ANTECEDENTS OF ENTREPRENEURIAL INTENTIONS AND BEHAVIOUR: THE ROLE OF ENTREPRENEURIAL EDUCATION AND CONTEXTUAL FACTORS

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ABSTRACT

Given the important role of entrepreneurship, understanding and predicting the emergence of venture initiation entails a research to explore the antecedents of entrepreneurial intention and behaviour. Review of past literatures has revealed that a research gap exists mainly in the conceptualization of the framework, particularly in examining the role of exogenous factors (entrepreneurship education), contextual and environmental factors (perceived entrepreneurial motivators and barriers) in developing entrepreneurial intentions and behaviour among the university graduates. Indeed, none of the past studies accounts for the moderating role of contextual and environmental factors in the development process of entrepreneurial intention and behaviour. This research develops and proposes a theoretical model of the antecedents of entrepreneurial behaviour, drawing together the different strands of thoughts and research on the role that formal entrepreneurship programmes may (or may not) play in influencing entrepreneurial attitude and consequently, intention and behaviour. As a whole, the main objective of this study was to investigate the link between entrepreneurial education, attitude, intention and behaviour. The three specific objectives of the study were: I) to examine the effect of entrepreneurship education programmes on the entrepreneurial attitude and intentions of university graduates, II) to assess the effect of the benefits of entrepreneurship education programme that raises the entrepreneurial attitude and intentions of university graduates, 3) to investigate the moderating effect of perceived contextual and environmental motivators and barriers on the relationship between entrepreneurial intention and behaviour.

The data for the study was collected from university graduates who are enrolled in entrepreneurship education programmes. Survey questionnaires were distributed to the

graduates during the class and were asked to provide data pertaining to the important constructs of the study. Structural equation modelling was applied to examine the measurement model, structural model as well as to test the hypothesis of the study. Overall, the entrepreneurship education programmes are found to have a positive influence on the entrepreneurial attitude of graduates and as a result, these students attain strong entrepreneurial intentions. Furthermore, within the entrepreneurship education programme, entrepreneurship learning benefits are found to be the most influential dimension in founding the entrepreneurial attitude of the students. In addition, inspiration and utilization of incubation resources are also found to positively affect subjective norms and perceived behaviour control, thus exhibiting its influence in establishing the entrepreneurial intention of the graduates. Moreover, the moderating effect of perceived entrepreneurial motivators and barriers were analysed to examine its relationship between entrepreneurial intention and behaviour. The students are found to be deterred and influenced by perceived entrepreneurial environmental barriers. The main conclusion drawn from this study is a better understanding of the entrepreneurship education programmes, especially knowing the perceived benefits and its influence on entrepreneurial intentions and behaviour. This study enables us to identify the sequence of influences and the important effects of each dimension of entrepreneurship programme on entrepreneurial intentions independently. More importantly, the study shows that the effectiveness of entrepreneurship education programme is subjected to contextual factors, particularly entrepreneurial environment and context. As such, designated entrepreneurship education should consider the environmental context.

ABSTRAK

Memandangkan peranan penting keusahawanan, memahami dan meramalkan kemunculan perniagaan baru mengakibatkan penyelidikan untuk meneroka latar belakang tentang niat dan tingkah laku keusahawanan. Tinjauan literatur lepas telah mengumumkan bahawa jurang penyelidikan wujud terutamanya dalam mengkonsepsikan rangka kerja konsep terutamanya dalam memeriksa peranan faktor-faktor luaran (pendidikan keusahawanan), konteks dan faktor persekitaran (terutamanya motivator keusahawanan dan halangan) dalam membangunkan niat keusahawanan dan tingkah laku di kalangan graduan universiti . Sesungguhnya, kajian lepas tidak menganalisa peranan faktor konteks dan alam sekitar dalam proses pembangunan niat dan tingkah laku keusahawanan. Kajian ini membangunkan dan mencadangkan satu model dengan menggunakan teori tingkah laku keusahawanan, dengan gabungan peranan program keusahawanan formal untuk melihat samada program ini memainkan peranan dalam mempengaruhi sikap keusahawanan dan seterusnya niat dan tingkah laku.

Secara keseluruhannya, objektif utama kajian ini adalah untuk menyiasat hubungan antara pendidikan keusahawanan, sikap, niat dan tingkah laku. Tiga objektif khusus kajian ini adalah: I) untuk mengkaji kesan program pendidikan keusahawanan kepada sikap keusahawanan dan niat graduan universiti, II) untuk menilai faedah program pendidikan dan kesannys terhadap keusahawanan dari segi sikap keusahawanan dan niat graduan universiti, 3) untuk menyiasat kesan moderasi motivator dan halangan konteks dan persekitaran hubungan antara niat dan perilaku keusahawanan.

Data untuk kajian ini telah dikumpulkan daripada graduan universiti yang namanya terdaftar dalam program pendidikan keusahawanan. Soal selidik kajian telah diedarkan kepada graduan semasa kelas dan diminta untuk menyediakan data berkaitan dengan konstruk yang penting dalam kajian ini. Pemodelan persamaan struktur telah digunakan untuk mengkaji model pengukuran, model struktur serta untuk menguji hipotesis kajian.

Secara, keseluruhan program pendidikan keusahawanan didapati mempunyai pengaruh yang positif ke atas sikap keusahawanan graduan dan hasilnya pelajar mencapai niat keusahawanan yang tinggi. Oleh itu, hasilnya adalah pelajar-pelajar didapati memulakan perniagaan mereka sendiri. Tambahan pula, dalam program pendidikan keusahawanan, faedah pembelajaran keusahawanan merupakan dimensi yang paling berpengaruh yang menjadi pengasas sikap keusahawanan pelajar. Di samping itu, inspirasi dan penggunaan sumber pengeraman juga didapati memberi kesan positif ke atas norma subjektif dan kawalan tingkah laku yang mana seterusnya mempengaruhi dan mewujudkan niat keusahawanan graduan.Selain itu, kesan yang moderasi bagi motivasi keusahawanan dan halangan dianalisis untuk mengkaji hubungan di antara niat dan perilaku keusahawanan. Keputusan kajian menunjukkan motivasi dan halangan memainkan peranan sebagai moderasi dalam proses pembangunan niat keusahawanan dan seterusnya untuk menjana perniagaan. Kesimpulan utama yang diambil daripada kajian ini adalah berkaitan dengan pemahaman yang lebih baik daripada program pendidikan keusahawanan terutamanya mengetahui manfaat dan pengaruhnya ke atas niat dan tingkah laku keusahawanan. Kajian ini membolehkan pengurus mengenal pasti urutan pengaruh dan kesan yang penting dalam setiap dimensi program keusahawanan terhadap niat keusahawanan. Lebih penting lagi, kajian menunjukkan bahawa keberkesanan program pendidikan keusahawanan adalah

tertakluk kepada faktor-faktor kontekstual terutamanya persekitaran keusahawanan dan konteksnya. Oleh itu, pendidikan keusahawanan yang dilaksanakan perlu mengambil kira konteks alam sekitar.

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DEDICATION

To My Mother, Gul Khanda

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CHAPTER 1

INTRODUCTION

1.1 Background

Economists, researchers and policy makers acknowledged the vital role of entrepreneurship in economic development both at micro and macro level. As on the macro level, among the key authors and pioneers Schumpeter, (1934) observes that entrepreneurship facilitate to rejuvenate economies, boost innovation in the industries, introduce effective and efficient means of production and also is the vibrant force behind the economic development. From micro perspective, entrepreneurship provides platform to the marginalized groups to share their efforts in the mainstream of economic development. (Acs, Desai, & Hessels, 2008). Accordingly, there is an increasing trend for government policy to promote entrepreneurship for its apparent economic benefit (O'Connor, 2013). Gibb (2002) supports the idea of an international and national variety of benefits to be gained from entrepreneurship. Entrepreneurship, associated commonly with business creation and is the process of getting into and operating some one's own business (Gartner, 1989). Meyer & Allen (1994, p. 46) considered "entrepreneurship to be the most important mechanism in wealth production, job creation, innovation and socio-economic development".

Acknowledging the importance of entrepreneurship and considering the structurar and behavioural changes many efforts have been made to promote entrepreneurship particularly among the youth and university graduates. Policy makers have developed a wide array of measures to support entrepreneurship and key among these is the call to academia to reconsider their role as promoters of entrepreneurship and entrepreneurial ventures (Guerrero, Toledano, & Urbano, 2011; Heinonen, 2006). The educational

institutions particularly universities are encouraged to contribute through particular educational programs, i.e. entrepreneurship education (Johansen, Schanke, & Clausen, 2012). Numerous universities comprehend the importance of this phenomenon and have adopted in the curriculum. The aim of these developments and initiatives was particularly oriented toward exploring and developing the unexplored strength of universities and research institutions (Fayolle & Gailly, 2004; Liñán, 2004). The contents of these programs was designed to promote an entrepreneurial attitude and culture among university graduates and to motivate them to established their own ventures (Kantis, Postigo, Federico, & Tamborini, 2002).

Entrepreneurship education has a relatively long history and has developed into a widespread phenomenon (Katz, 2003; Kuratko, 2005). By 2002, entrepreneurship education in U.S. has exploded to more than 2,200 courses at over 1,600 schools; 277 endowed positions; 44 refereed academic journals, mainstream management journals devoting more issues (some special issues) to entrepreneurship; and over 100 established and funded centres. The discipline's accumulated "wealth" has grown to exceed $440 million with over 75% of those funds accruing since 1987 (Katz, 2003). In addition, a remarkable rate of growth and development is the curriculum, devoted to entrepreneurship development is documented in several early studies. Today, the number of universities and colleges offering entrepreneurship course and programs has grown from few in 1970s to thousand across the world (Kuratko, Hornsby, & Covin, 2014). A large number of universities are offering entrepreneurship as major, minor, certificates, diplomas and master degrees. Some high research oriented universities are offering PhD programs in research to build its teaching strength in the entrepreneurship (Morris, Kuratko, & Cornwall, 2013). Over the last four decades, the entrepreneurship has grown in the universities faster than any other field of study. The pace is

accelerating while more universities are pursuing to develop entrepreneurship programs and courses. Kuratko (2005) notes, "Entrepreneurship is new and is about continual innovation and creativity. It is the future of business schools and it should begin to move into a leadership role" (p. 591). Indeed, entrepreneurship programs have risen to a position of high importance and impact in the universities and school of businesses.

1.2 Setting the research scene

The current research is conducted in the context of a developing county Pakistan. Pakistan's being the 6th largest populous country shares 2.55 per cent of the total population of the world National Institute of Population Studies (NIPS, 2013). It is worth to mention that the glory of the Pakistan's population is that the major part comprises by youth and young generation. Youth below 30 contains 60% of the population in Pakistan (Pakistan Bureau of Statistics 2011). Even the splendid population country is under the dark clouds of unemployment and poverty. As a large chunk of the population is living below $1.25-a-day worsen poverty situation. About 45.7 per cent people (Approximately 82 million) in Pakistan are living below the poverty line. And out of these 45.7 per cent people 36.5 per cent million (Approximately 65 million) of the total population are living in chronic poverty. (Benazir Income Support Program, 2013).

Today's Pakistan faces cyclical, technical, structural and seasonal unemployment. The most horrible part is that it is rising every year which in the long term will demonstrate to be hazardous for the economy of Pakistan. (Gul, Zaman, Khan, & Ahmad, 2012). The soaring unemployment is prevailed in both categories of workforce, including labour force and professional degree holders. According to official statistics, labour force participation rate for Pakistan is 45.7 per cent. In light of the above statistics, 3.05

million persons in the labour force are estimates as unemployed in 2011 (Government of Pakistan, 2011-12). In addition 40% of unemployed are youth in the age between 15 to 34 years. Furthermore, this problem has gradually crept up the education ladder. Today, in Pakistan there's an alarming surplus of university graduates and post-graduate (Economist Pakistan Issue, 2011). The unemployment rate is 11.24% among the graduates holding higher education degrees (Pakistan Bureau Statistics, 2013). In the popular debate, it is often taken for granted that a higher unemployment also implies lower rate of economic growth (Calmfors & Holmlund, 2000). Unemployment is one of the obstacles in the way of persistent and sustainable economic growth. In Pakistan, it has been considered as a major economic problem along with its many social adverse consequences (Waqas & Hyder, 2012). The economic growth of the country is continuously declining from last one decade. According to Pakistan Bureau of Statistics (2011), the GDP of Pakistan decreases from 4.37 % to 1.72 % from 2004 to 2010.

At the core of urgent efforts to improve economic situation and lower down the rate of unemployment, the focus of policies is diverted to the stabilization of macroeconomic settings. Stabilization of the economies includes promoting of entrepreneurship (as defined by new business creation), nascent entrepreneurship and development of small and medium enterprises (SMEs) (Kongolo, 2010). The literature suggested that, a significant rate of economic growth can be linked to entrepreneurs exploiting national investments in knowledge creation (Valliere & Peterson, 2009). Thus entrepreneurship contains competitive nature of human behaviours that expedite the market process (Wong, Ho, & Autio, 2005).

In the above explained respect, entrepreneurship’s contribution to the economy has attracted the attention of policy makers in both developed and developing economies

(Krasniqi, 2007). Concurrently, experts and economists are unanimous about the role and importance of small and medium enterprises in the development of Pakistan's economy (Kongolo, 2010). Government of Pakistan has declared the emerging of new business and SMEs as one of the four important drivers of economic growth (Ali, 2013). Business start ups, nascent entrepreneurship and SMEs believed to be the survival in worse economic condition. This sector approximately estimates 90% of all business sectors and covers 77 per cent of total industrial employment. Further, SME sector contribute 40% in the annual GDP of Pakistan (SMEDA Pakistan, 2010). It also contributes 24 per cent to national manufacturing exports and account for the employment of more than 21 million people. According to economic survey of Pakistan, nearly 3.2 million SMEs are operating in country and best contribute technological for economy SMEDA Pakistan, (2010).

Acknowledging the importance of business start ups, small & medium enterprises (SMEs) and entrepreneurship development in the economic development, government agencies incline to expedite the trend of emerging business in the economy. Meanwhile, emphasis has been on the promotion of self-employment attitude among the youth in Pakistan. The rationale for emphasis in motivating the youth for self-employment and establishing enterprises resonates with the trend worldwide, where knowledge-based economy, information communication technology, the service sector, and increased individual independence, have led to the predominance of self-employment and the generation of new enterprises as the main creator of jobs (Carter & Jones-Evans, 2006).

Replicating the global trend, Pakistan during the last decade, 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 entrepreneurial education and culture in Pakistan's universities (Saeed, Yousafzai, Yani-De-Soriano, & Muffatto, 2014). Academia is asked to play their role in promoting entrepreneurship and entrepreneurial approach in the society. Entrepreneurship in education is a primary initiative of government policies in encouraging young people to consider entrepreneurship as a career path. Today there are number of universities offering entrepreneurship educations programs both at undergraduate and postgraduate. the programs are offered with aim to equip students with necessary skills and motivate them to start their own business (Shabib-ul-Hasan, Izhar, & Raza, 2012). Policy makers of the time believe that the role of universities should be to educate the student to become employers instead of employees. In addition, it is argued that the society must be equipped with entrepreneurship education to help them in their lives independently or improve their employability (Promotion of Education in Pakistan Foundation, 2010). The Higher Education Commission emphasized that universities should not only develop mastery of subject matter, but also the abilities to think critically, innovate, communicate, work effectively in teams, and develop entrepreneurship opportunities and flexibility among their graduates. Universities are expected to play a key role in the national development process by creating, using, and diffusing new knowledge through the establishment of technology parks and business incubators, making possible access to venture capital, and other such schemes (Rehman, 2008). Further higher education institutions are considered to establish and stick to an educational structure that craft educational environment into more vibrant, broader and deep rooted, so as to transform powerful learners into powerful entrepreneurs (Shabib-ul-Hasan et al., 2012).

In further efforts to support self-employment, besides integrating entrepreneurship in the existing curriculum, the government of Pakistan take a number of additional measures. Government policies facilitate nascent entrepreneurs in providing competitive environment with an equal level playing field, role of law in protection of property rights and contract enforcement. Furthermore the government and universities established a number of student business start-up funds and start up business centres in the universities. These include SAFE (Student Advancement Endowment Funds) and SBC (Start-up Business Centres) both are established in 2012. SAFE demonstrates to enable a university provide scholarships to needy talented students, fund student's business start-ups and add new capacity building programs. SBC will enable a university to train students in entrepreneurship. In addition, recently, a "Prime Minister Youth programme, 2014" in announced to provide loan free business start-ups funds to the youth. The objective of this programme is to motivate the youth to start their own business and play their role in the development of entrepreneurship and produce more employment in the country (SMEDA, 2014).

1.3 Problem Statement

Despite the efforts to develop entrepreneurship in Pakistan, business start-ups and total entrepreneurship activity is disappointing compared to other economies. Total early stage entrepreneurial activity or TEA rate (the sum of the nascent entrepreneurship rate and the new business manager rate) in Pakistan was 9.07 %. This is lower than the average TEA rates for the factor driven economies (4.22 %) and efficiency driven economies (13.8 %) (GEM, 2011).

The lower businesses start up and total early stage entrepreneurial activity can be viewed in two different policy approaches adopted by government of Pakistan. Firstly,

earlier, back in 1970's and 1980's the common view of the policy makers in Pakistan in relation to entrepreneurship is that investment at the large industrial level (Akbar & Bashir). Policy makers adopted approaches pertaining to attract investment. These approaches include licensed monopolies in protected markets and subsidised credit and inputs for certain activities and emphasis on large scale manufacturing as oppose to SME. As a result this rise a challenging economic and socio-cultural environment for entrepreneurship (Chemin, 2010). Thus keeping the economic definition in mind, one can observe the entrepreneurship in Pakistan is very weaken and prejudiced by government policies, legislation and regulation. Consequently all such hard work do not bring the desired results (Shabib-ul-Hasan et al., 2012).

Secondly, from last one decade, policy agencies and higher education institutions trying to develop entrepreneurial attitude among the university graduates, however, they are fail to develop the right skills needed to nurture entrepreneurial attitudes among students (Shabib-ul-Hasan et al., 2012). Indicating that, the development of entrepreneurship among the university graduates in Pakistan is lacking a coherent policy framework that determines the role of all relevant stakeholders in playing their respective roles in their particular domains (SME policy, 2007). Besides, the various efforts to promote entrepreneurship would expectedly be premised on personality and entrepreneurial psychology literatures whose explanation of business creation is questionable and there is, therefore, a need to examine present entrepreneurship education strategies to promote entrepreneurial approach among the youth leaving schools, colleges and universities and also how policy and the environment factors that play a moderation role in the whole process of entrepreneurship development attitude can be adjusted to allow entrepreneurship play a greater role in the economy in Pakistan.

The current research would be more focused on the later part of the problem statement in order to identify the relative roles of different individual, educational and contextual factors in the success of entrepreneurship policies and programmes in Pakistan.

1.4 Research Questions

1. Do entrepreneurship education programmes raise entrepreneurial attitudes and intention of students
2. What type of entrepreneurship education programme's benefits raises the entrepreneurial attitude and intentions of university graduates?
3. What is the moderating effect of perceived contextual and environmental motivators and barriers on the relationship between entrepreneurial intention and behaviour?

1.5 Research Objectives

1. To examine the effect of entrepreneurship education programmes on the entrepreneurial attitude and intentions of university graduates.

2. To assess the effect entrepreneurship education programme's benefits that raise the entrepreneurial attitude and intentions of university graduates.

3. To investigate the moderating effect of perceived contextual and environmental motivators and barriers on the relationship between entrepreneurial intention and behaviour.

1.6 Research Approach

Evaluation of venture creation process has become central point of interest among the academic society. The phenomenon is analyzed using very different approaches and

methodologies. The objectives of this study is accomplished by adopting the commonly accepted tenet that entrepreneurial behaviour is planned behaviour (toward a specific goal such as venture creation or starting a business) which follows from formation of an intention to become an entrepreneur. This view is consistent with the results of the great number of empirical studies and meta-analyses reported in the social psychological literature, which confirm that intention is the best predictor of planned behaviour over which individuals have control (Armitage & Conner, 2001; Fishbein & Ajzen, 2010; Sutton, 1998; Ajzen & Klobas 2013.). The ability of intention to predict behaviours means that understanding the formation of entrepreneurial intention also provides an insight into the new venture initiation process.

In the domain of business start-ups and entrepreneurship, our conceptualization of the TPB proposes that three factors account for variations in entrepreneurial intention and can thus be used to predict intention for entrepreneurial behaviour. These factors are: attitude towards entrepreneurial behaviour, e.g., towards starting one's own business as compared to being employed in the service of others (Kolvereid, 1996); subjective norms or perceived social pressure (Fishbein & Ajzen, 2010) to become (or not to become) an entrepreneur, which incorporates perceived social pressure from peers, family and, as it is important to entrepreneurs, society as a whole (Ajzen, 2001; Krueger Jr, Reilly, & Carsrud, 2000); and perceived control for entrepreneurship, which refers to one's perception that they can take the actions necessary to become an entrepreneur, and which would typically incorporate evaluations of skills and intellectual ability as well as ability to overcome setbacks or deal effectively with barriers. In turn, intention plays a role as a mediator between these factors and behaviour, even when attitudes are credited as accounting for variations in behaviour (Bagozzi, Baumgartner, & Yi, 1989).

Thus, we agree that intentions-based models offer a great deal to entrepreneurship researchers. Entrepreneurial activity is clearly a planned behaviour. Intent is a critical characteristic of organization formation so studying pre-organizational phenomena, including the decision to initiate an entrepreneurial career, is clearly both important and interesting (Katz and Gartner 1988).

The TPB addresses the origins of the direct determinants of intentions and the beliefs that underlie them only in generic terms that are not specific to any applied domain (Fishbein & Ajzen, 2010). Thus, while the TPB indicates the mechanisms by which external factors might influence the determinants of intentions and behaviours, it remains open to the variables that are likely to affect how beliefs about entrepreneurship and associated attitudes, subjective norms, perceived behavioural control and intention is formed. In other words, it is up to entrepreneurship researchers to identify exogenous influences on the psychological system of intention creation. Amongst these determinants of EI, entrepreneurship education appears to be an important antecedent as well, as evidence in previous studies shows that there is clear a linkage between entrepreneurship education and entrepreneurial activities (Galloway & Brown, 2002; Gorman, Hanlon, & King, 1997). Thus, the current study aims to investigate the role of entrepreneurship education developing entrepreneurial approach among university graduates as an exogenous factor on the antecedence of entrepreneurial intentions.

In an international setting, the diverse range of countries with unique cultural, national and institutional characteristics and contexts means that entrepreneurship graduates in different countries are exposed to a unique set of opportunities and challenges (Nabi & Liñán, 2011). Although entrepreneurship programmes inspire and empower an individual with entrepreneurial knowledge and skills and positively impact entrepreneurial intention, the nature of their impact is different across different

economies (Giacomin et al., 2011). Entrepreneurship education may be more critical for developing countries than developed countries (Lee, Chang, & Lim, 2005), but even in economies with consistent growth, a national policy supportive of entrepreneurial structure and development is encouraged (Lee & Peterson, 2001). Thus, in order for educational programmes to be efficient, they must be adjusted, for example, to the perceived barriers and attitudes towards being an entrepreneur unique to each nation (Pittaway & Cope, 2007).

1.7 Significance of Research

This study is significant for a number of reasons. Firstly, entrepreneurial intent remains an important part of the venture creation process and is worthy of attention in its own right. Nonetheless, a vast amount of previous research on entrepreneurial intentions has been done and policies and efforts to increase entrepreneurial intention and action are hampered by a lack of common understanding of the factors that affect the link between an individual and business creation; factors such as why some people are more interested in entrepreneurship than others and whether educational programmes, training and activities stimulate the entrepreneurial desires of college and university graduates or not.

Much past research has sought to define the psychological characteristics that distinguish entrepreneurs from others (Finardi, 2013 ; Mitchell et al., 2002) and the motivations, attitudes and characteristics that stimulate them to establish their own ventures (Althoff, 2012; Howorth, Smith, & Parkinson, 2012). Different groups of researchers have obtained conflicting outcomes, resulting in controversy about entrepreneurial characteristics and entrepreneurial personality (Bienkowska & Klofsten,

2012; Che, 2012; Duval-Couetil, Reed-Rhoads, & Haghghi, 2012; Gordon, Hamilton, & Jack, 2012; Griffiths, Kickul, Bacq, & Terjesen, 2012) (see others in the footnote) [1]

Thus, an alternative approach shifts the focus from examination of traits to examination of process in developing entrepreneurial intentions, including the long time it can take to make a decision to start a business (Lee & Wong, 2004). The lengthy decision-making process might be affected by incidental experiences and experiences of changes in the external environment and these, in turn, might influence beliefs, convictions and attitudes that affect entrepreneurial intentions.

For the current study, the researcher reviews the literatures of development of university graduates' entrepreneurial intentions, classifying them as literature on: psychological factors associated with entrepreneurship as intentional, planned behaviour; exogenous factors (focusing on benefits entrepreneurship education); and contextual factors (perceived entrepreneurial motivators and barriers). Based on the above classification of the literature, this research aims to provide a multidisciplinary framework for analysis of the role of university education in developing entrepreneurial intentions and actions. It develops and proposes a theoretical model of the antecedents of entrepreneurial behaviour, drawing together the different strands of opinion and research on the role that formal entrepreneurship programs may (or may not) play a role in developing entrepreneurial intention and action. The framework of the current study can be used to distinguish the relative roles of different individual, educational and contextual factors in the success of entrepreneurship policies and programmes in other developing and developed economies. Importantly, the proposed theoretical framework offers policy makers and educators an aid to designing entrepreneurship programs by illustrating how

[1] Korhonen, Komulainen, & Raty, 2012; Leitch, Hazlett, & Pittaway, 2012; Mirabella & Young, 2012; Pache & Chowdhury, 2012; Palmero, Camara, & Eguizabal, 2012; Rahmati, Khanifar, & Moghimi, 2011; Raposo & do Paco, 2011a, 2011b; Rasmussen, 2011; Venesaar, Ling, & Voolaid, 2011; Walter & Dohse, 2012).

contextual factors act as barriers or incentives to entrepreneurial action by moderating intention.

Secondly, although entrepreneurship education is recognized to be important (e.g., Donckels 1991; Robinson and Sexton1994; Gorman et al.1997; Zhao et al.2005), however, there have been relatively few empirical studies of its impact, distinct from that of general education, on perceptions of entrepreneurship and EI (Krueger and Brazeal, 1994; Peterman and Kennedy 2003). In addition, as mentioned by Byabashaija and Katono (2011, page 129): "The effect of general education has been explored but only a few studies have looked at entrepreneurial education, particularly at university and tertiary institution level". In other words, the effect of entrepreneurship education on entrepreneurial intention is limited and still undergoing empirical testing (Byabashaija and Katono 2011). Research is not conducted on the interrelationship between the educational processes and the outputs of these processes, then educational practitioners are unlikely to know what forms of activity work, for what purpose, leading to what changes in student behaviour, activity and choice (Pittaway & Cope, 2007). Thus, the current study is significant in analysing the effect of entrepreneurship education programs includes a portfolio of complementary activities. The entire structure of the programs is divided into four major components: (1) taught component, (2) business planning component (3) interaction with practice component and (4) university support component guided from the general structure of the program offered in major global universities. As a whole these components offer three types of benefits to the students such as, learning, inspiration and utilization of incubation resources. Methodologically, this study examines the impact of each entrepreneurial activity on the antecedents of entrepreneurial intentions and individually to explore the most influential component of the program.

Thirdly, psychological models of entrepreneurship do not cover some combinations of environmental and exogenous factors which can serve to facilitate or precipitate the realization of intentions into behaviour (Krueger & Brazeal, 1994; Shapero & Sokol, 1982; Stopford & Baden-Fuller, 1994). Environmental and exogenous factors include legal, institutional and socioeconomic conditions, entrepreneurial and business skills, financial or nonfinancial assistance, and other elements which depend on the country (Gnyawali & Fogel, 1994; Henrekson & Davidsson, 2002). Moreover, as Carayannis, Evans, & Hanson (2003) point out, intentionality is embedded in cultural expectations; intentionality itself will be influenced by perceived and real barriers to action and will be affected by the general enterprise infrastructure in country or region. Therefore, similar to personality traits, contextual and environmental opportunities and barriers have been found to be important facilitators for entrepreneurial activities (Hisrich & Peters, 1995; Pennings, 1997) and can play a role in the entrepreneurial intentions of students. Therefore, in order for entrepreneurial educational programs to be effective, they must be adjusted, for example, to the perceived barriers or opportunities and entrepreneurial attitudes unique to each nation. In fact, Pittaway and Cope (2007) argued that entrepreneurship education should vary by nation as well as region. Therefore, this study is significant for its investigation of the moderating effect of contextual and environmental factors on relationship between entrepreneurial intention and entrepreneurial behaviour. This is significant in permitting to explore the perceived entrepreneurial motivators and barriers of university graduates.

Fourth, in order to move this young field of research beyond its exploratory stage (Alberti, 1999) descriptive and retrospective studies are not sufficient to provide convincing evidence for the presumed effects (Alberti, 1999; Gorman et al., 1997;

Matthews and Moser, 1996). Peterman and Kennedy (2003) call for the development of credible methods of testing hypotheses, using large sample sizes and control groups. This study is therefore significant for investigating the role of entrepreneurship education in developing the entrepreneurial intentions using a large sample size from both public and private universities in all four provinces in Pakistan. In addition, to assess the difference of entrepreneurial intentions among the entrepreneurial graduates and non entrepreneurial graduates the current study introduce a control group and invites the graduates who are enrolled in other business programs such master in business administration (MBA) and entrepreneurship as a course.

Lastly, a significant aspect of the research relates to the fact that it brings empirical evidence from a relatively new cultural context taking into account that most of the previous studies on entrepreneurial intentions have focused on industrially well-developed countries like Scandinavia and the USA (Autio et al., 2001; Krueger et al., 2000) or others such as Norway (Kolvereid, 1996), Spain (Linan et al., 2011) and Taiwan (Linan and Chen, 2009). There remains a paucity of research on entrepreneurial intention and entrepreneurial education in developing countries. The few studies conducted in developing countries to date include: Tkachev and olvereid (1999), who studied intentions among Russian students; (Gird & Bagraim, 2008), who studied students from South Africa; Jones et al. (2008), who studied Polish students; and Wu and Wu (2008), who studied Chinese students. The situation is far from clear, and there is little research on the Theory of Planned Behaviour, entrepreneurial intentions, attitudes, and motivations of students and graduates in developing countries. Since the social and economic environment in developed countries is different from the developing countries, a study in a developing country is significant. In addition as it is observed by Krueger et al. (2000), the linking of entrepreneurial behaviour with

attitudes and individual background factors give a better understanding of how entrepreneurship occurs, and specific suggestions of how it can be influenced. The results might be used by policy makers and trainers to identify the technical, financial, and other training needs of university graduates.

1.8 Structure of Thesis

1.8.1 Chapter One

The current chapter introduces the context of the research covering issues such as the background, objectives and significance in order to give an overview of this research. To explain the further insight of this research, the remaining sections of the thesis are as follows.

1.8.2 Chapter Two

The literature review chapter examines the main theories and identifies gaps, which formulate the conceptual framework of this research. This chapter also provides a review of the previous literature on the constructs incorporated in this research.

1.8.3 Chapter Three

The research method chapter starts with a discussion on the research paradigm and the choice of paradigm that has been employed. This chapter also describes the research process, research design, pilot study, instrument development and data collection procedures. This chapter provides significant information on the research methodology and the methods adopted to carry this research where quantitative approach was considered more appropriate in light of research questions and objectives.

1.8.4 Chapter Four

The analysis and results chapter explains structural equation modelling (Analysis of Moment Structures or AMOS). In order to pursue the prime objectives of the study, chapter four investigates and explains the relationship of independent variables with dependent variables and presents the empirical results of the research hypothesis.

1.8.5 Chapter Five

The discussion, implications and conclusion chapter summarizes the findings, discusses the implications, describes the limitations of the research and offers suggestions for future research.

CHAPTER 2

LITRATURE REVIEW

2.1 Introduction

Entrepreneurship is acknowledged as a vital source of economic growth and a prominent factor influencing the socio-economic wellbeing of a society (McMullan, Long, & Graham, 1986). For Schumpeter (1911; 1934) the entrepreneurial process is a major factor in economic development and the entrepreneur is the key to economic growth. The evolution of new businesses also opens social prospects. Entrepreneurship is regarded as a key source of job creation, poverty reduction, innovation and societal development as well as economic competitiveness (Wu, Kuo, & Shen, 2013; Commission of the European, 2003; Liñán, Rodriguez-Cohard & Rueda-Cantuche, 2005). Hence, a steady growth of business creation is necessary for social wellbeing as well as economic development.

How does society identify and develop its entrepreneurs, and how can formal education contribute to this process? After many years of debate among policy makers, practitioners and educators, no clear answers have emerged (Souitaris, Zerbinati, & Al-Laham, 2007; Von Graevenitz, Harhoff, & Weber, 2010). This research aims to provide a multidisciplinary framework for analysis of the role of university education in developing entrepreneurial intentions and behaviours. It develops and proposes a theoretical model of the antecedents of entrepreneurial behaviour, drawing together the different strands of opinion and research on the role that formal entrepreneurship programmes may (or may not) play in developing entrepreneurial intention and behaviour. The framework of the current study can be used to distinguish the relative roles of different individual,

educational and contextual factors in the success of entrepreneurship policies and programmes in other developing and developed economies. Importantly, the proposed theoretical framework would offers policy makers and educators an aid to designing entrepreneurship programmes by illustrating how contextual factors act as barriers or incentives to entrepreneurial behaviour by moderating intentions.

Policy makers have developed a wide array of measures, both at macro and micro levels, to create opportunities and develop an entrepreneurial approach in society to trigger the creation of new ventures. The focus of these policies lies in academia (Nabi & Holden, 2008). Observers in developing countries link contemporary economic growth in western nations with the inflow of university graduates and entrepreneurs in the creation of formal entrepreneurship (Muhammad, Akbar, & Dalziel, 2011). University graduates who are treated as potential entrepreneurs tend to start their own business after completion of their studies (Zainuddin, 2012). Regardless of discipline, university graduates are considered more capable of entrepreneurial behaviour because they generally have higher socioeconomic status and are equipped with unique skills and mind-sets. They register their businesses with government agencies and regularly pay taxes. Policy makers' and practitioners' interests are therefore interested in motivating more university graduates to become self-employed, and this has led to proposals for action to increase entrepreneurial intentions among college and university graduates (Kirby & Ibrahim, 2011;Zainuddin, 2012). As a result, an increasing number of universities offer degree courses, often at postgraduate level, designed to impart, in addition to the generic skills of all university graduates, specific knowledge of areas of academic study considered necessary for effective creation and successful continuation of entrepreneurial ventures. Entrepreneurship

education programs have four broad components: (1) taught component, (2) business planning component (3) interaction with practice component and (4) university support component (Gartner and Vesper, 1994; Souitaris et al., 2007).

Nonetheless, policies and efforts to increase entrepreneurial intention and behaviour among graduates are hampered by a lack of common understanding of the factors that affect the link between an individual and business creation; factors such as why some people are more interested in self-employment than others and whether educational programmes, training and activities stimulate the entrepreneurial desires of college and university graduates or not. Much past research has sought to define the psychological characteristics that distinguish entrepreneurs from others (Finardi, 2013 ; Mitchell et al., 2002) and the motivations, attitudes and characteristics that stimulate them to establish their own ventures and succeed in them (Althoff, 2012; Howorth, Smith, & Parkinson, 2012).

Different groups of researchers have obtained conflicting outcomes, resulting in controversy about entrepreneurial characteristics and entrepreneurial personality (Bienkowska & Klofsten, 2012; Che, 2012; Duval-Couetil, Reed-Rhoads, & Haghghi, 2012; Gordon, Hamilton, & Jack, 2012; Griffiths, Kickul, Bacq, & Terjesen, 2012; Korhonen, Komulainen, & Raty, 2012; Leitch, Hazlett, & Pittaway, 2012; Mirabella & Young, 2012; Pache & Chowdhury, 2012; Palmero, Camara, & Eguizabal, 2012; Rahmati, Khanifar, & Moghimi, 2011; Raposo & do Paco, 2011a, 2011b; Rasmussen, 2011; Venesaar, Ling, & Voolaid, 2011; Walter & Dohse, 2012). An alternative approach shifts the focus from examination of traits to examination of process in developing entrepreneurial intentions, including the long time it can take to make a decision to start a

business (Lee & Wong, 2004). The lengthy decision-making process might be affected by incidental experiences and experiences of changes in the external environment and these, in turn, might influence beliefs, convictions and attitudes that affect entrepreneurial intentions. It is argued in current research study, on the other hand, that the factors which are considered to be the cause of business emergence should be brought together in a single framework that gives policy makers and educators a clear insight into the heterogeneous factors in the process.

It is therefore the researcher reviews (in section two) the literatures of development of university graduates' entrepreneurial intentions, classifying them as literature on psychological factors associated with entrepreneurship as intentional, planned behaviour; exogenous factors (focusing on entrepreneurship education); and contextual factors (institutional and economic barriers and opportunities). The third section logically links the psychological, exogenous and contextual factors in a single process that represents the proposed relationship between entrepreneurship education, graduates' beliefs about entrepreneurship, their entrepreneurship intentions and business creation.

Motivation for entrepreneurship is complex and involves the dynamic interaction of factors (Nabi, Holden, & Walmsley, 2006). Different scholars and researchers understand entrepreneurship differently and have come up with different and conflicting conclusions about how to boost and harness it for development. This section begins by reviewing the literature of the two major schools of thought about the proximal cause of entrepreneurship, focusing first on theory and research about personal characteristics that produce 'natural' entrepreneurs, and subsequently on arguments that entrepreneurial intentions and their

formation are key to the process of new venture creation. It then examines the role of education in motivating and forming entrepreneurs, and concludes with consideration of environmental and contextual factors that might enable individuals to act on their entrepreneurial intentions or create barriers to formation of intentions and entrepreneurial behaviour.

In reviewing the literature, the researcher take account of the different terminology used to describe entrepreneurial intentions and consequent behaviours in different fields of study over many years. Thus, we include models and studies of the antecedents of "self-employment" where it is clear that the described self-employment requires development of a new venture (Kolvereid, 1996a; Krueger et al., 2000; Luthje and Franke, 2003). Similarly, we include models and studies of the antecedents of "business start-up" where the entrepreneur (as distinct from macro-level institutional factors) is the focal point of the model. Nonetheless, as much as possible, we preserve the language of the original work. When summarising or synthesising, we adopt more generic terms, specifically "starting a business" and "new venture creation".

2.2 Entrepreneurship as natural behaviour

The major theme in the literature intended to describe the motivation for entrepreneurship is seemingly complex and involves the dynamic interaction of factors (Nabi, Holden, & Walmsley, 2006). Different scholars and researchers understand entrepreneurship differently and come up with different and conflicting conclusions on how to boost and harness it for development. However (Kirby & Ibrahim, 2011) argued that entrepreneur and self-employee may be probably intentional and pre-planned. Thus, one may be conscious to know how that attitude and perception evolved, what are the factors either internal or

external that contribute in the development of that particular behaviour. In this regard entrepreneurial intention would be the first step in the evolving and sometimes long process of venture creation (Lee & Wong, 2004). The intention to start up, then, would be a necessary precursor to perform entrepreneurial behaviours (Fayolle, Gailly, & Lassas-Clerc, 2006; Lars Kolvereid, 1996). Therefore entrepreneurial intentions has been considered to be the best element in understanding the new firm creation process (Bird, 1988)

2.2.1 Entrepreneurship as intentional, planned behaviour and entrepreneurship approaches

Primarily the factor which plays an important role in identifying and describing the phenomena of association of an individual with business creation concerns entrepreneurial intentions of the individual. Entrepreneurial intentions have been given high importance in understanding of entrepreneurship process due to its vital role in explaining the relationship between business creation and an individual (Bird, 1988; Krueger & Carsrud, 1993). Entrepreneurial intention in general terms can be explained as an individual's conscious awareness and determination to set up a new business venture (Bird, 1988; Hmieleski & Corbett, 2006; Thompson, 2009).

Early studies conducted on entrepreneurial career choice primarily focused on psychological and demographical factors such as personality variables, personal history and social contexts in determining of individuals choices and preferences with respect to their entrepreneurial status (Dyer, 1994; Robinson, Stimpson, Huefner, & Hunt, 1991). A great number of researchers come up with different assumptions and explored variety of factors

that plays an important role in the entrepreneurship development. Formerly early researchers explored personal background factors and relate them with the emergence of business.

2.2.1.1 Personal Background Approaches

The personality approach in identifying the factors that contribute to venture establishment is based on the direct measurement of personality traits of the individual. The concept was first discussed by MacClelland *et al*. (1953) and McClelland (1961) that explored and relate the need for achievement, power and affiliation with business creation. Many other researchers joined the efforts to explore the characteristics that would help in differentiating entrepreneurs from others (Bienkowska & Klofsten, 2012; Collins & Moore, 1970; Sexton & Bowman, 1986; Shapero, 1975). These authors generally addressed personal background from the perspective of propensity to set up an enterprise includes achievement, motivation, propensity to take risk, innovation, and autonomy, or the desire for independence. However the research based on personality theory pose variety of problems such as inappropriately application of the theory to entrepreneurship context, poor instrument validity and failing to incorporate the environmental influence in the theory (Robinson et al., 1991). Thus unsatisfactory results from the personality theory direct the research society to demographic factors in investigating the relations between an individual and venture emergence.

2.2.1.2 Demographic Approaches

The second approach in identifying the characteristics of entrepreneurs lies in the demographics of a typical entrepreneur. The demographic models hypothesized that people with similar background contains similar underlying characteristics. Based on the model's assumptions, it is assumed that by identifying the demographics of a known entrepreneur

will help in predicting the entrepreneurship in unknown population. The demographic variables investigated under this approach includes the family background and experiences such as age, gender, birth order, role models, marital status, education level, previous work experience and work habits (Cohen, 1980; Collins & Moore, 1964; Gasse, 1982; Hisrich, 1986; Jacobowitz & Vidler, 1982; Sexton & Auken, 1982).

The demographic models were not successful, and were criticised for a number of reasons. Firstly, these models provided little or no evidence of the role of family background and social condition in the individual's decision-making process (Kolvereid, 1996). Katz (1992) further argued that role models are not applicable at micro scale. More critically, as Robinson et al. (1991) pointed out, the demographic approach had major theoretical and methodological shortcomings, including lack of justification for suggestions that entrepreneurship might be based on sex, race, birth order or most other factors studied, and inconsistency of the approach with evidence from psychology about individual decision making (Rychlak, 1981) and previously established criteria for the evaluation of social science research and theory (Bacharach, 1989).

Although research designed to understand how personality and demographic characteristics are associated with entrepreneurship has contributed to understanding the emergence of business ventures, the findings are still considered vague and questionable; personality theory and demographic approaches cannot adequately account for entrepreneurship (Gartner, 1989; Shane & Venkataraman, 2000). Scholars argued that to stimulate and encourage the entrepreneurship development approach, it is important and necessary to predict it suitably and the factors discussed have been found poor predictors of

entrepreneurial intentions. It is difficult to conclude on the bases of personality traits, individual background factors, cultural factors with self-employment and entrepreneurship development (Gartner, 1989; Shane & Venkataraman, 2000). Therefore, we review more recent research, which focuses on the contribution of entrepreneurial intentions to new venture creation, in the next section.

2.2.1.3 Entrepreneurship as intentional, planned behaviour

According to theories that focuses on entrepreneurial intention, intentions are the best element for understanding the new firm creation process (Bird, 1988). Kirby & Ibrahim (2011) further argue that entrepreneurship is not only intentional but also pre-planned. In this sense, the formation of an entrepreneurial intention is a central element in the evolving and sometimes long process of venture creation (Lee & Wong, 2004; Fayolle, Gailly, & Lassas-Clerc, 2006; Lars Kolvereid, 1996).

Thus, the factor which plays the pivotal role in identifying and describing the association of an individual with a business creation is the individual's entrepreneurial intention (Bird, 1988; Krueger & Carsrud, 1993). Entrepreneurial intention (EI), in general terms, can be explained as an individual's conscious awareness and determination to set up a new business venture (Bird, 1988; Hmieleski & Corbett, 2006; Thompson, 2009).

Much current research on entrepreneurial behaviour is directed toward prediction of entrepreneurial intentions rather than entrepreneurial behaviour or new venture creation. This approach is supported by research that shows that intentions are good predictors of actual behaviour in many different contexts (Armitage & Conner, 2001; Sutton, 1998).

Two models are at the core of the entrepreneurial literature for predicting intentions. Both models propose that formation of intentions precedes behaviour, but there are differences in both the formation of intentions and the mechanisms by which intentions are translated into behaviours. The entrepreneurial event model proposed by Shapero & Sokol, (1982) is specific to entrepreneurship and explains EI by means of perceived desirability, perceived feasibility and propensity to act. The second model is a generic model of human behaviour proposed by (Ajzen, 1988, 1991), the Theory of Planned Behaviour (TPB). The three antecedents which explain intentions in this model are attitudes, subjective norms and perceived behavioural control (PBC).

Shapero's model considers human behaviours to be subject to inertia until the occurrence of a displacement. Displacement can be either negative (losing a job or getting a divorce) or positive (inheritance). It triggers a change in behaviour and the entrepreneurial decision maker will choose the best prospect available from a set of alternatives (Katz, 2003). Entrepreneurial intentions are based on two sets of factors. Firstly, establishing a business should be perceived as a valuable and significant action, attractive to the individual; this is known as perceived desirability. Perceived desirability is affected by personal, interpersonal and social influences. At the same time, the business should be seen as a credible opportunity; this is reflected in perceived feasibility, the individual's self-belief that they can start a business. Secondly, starting a business requires a sort of precipitating act, but people differ in the extent to which they act on the decisions they make. Propensity to act refers to an individual's nature to act upon their decisions. It is be treated as having a moderating effect on intentions rather than a direct effect like perceived desirability and perceived feasibility (Krueger, 1993). The three major antecedents of Shapero's model,

perceived desirability, perceived feasibility and propensity to act, are empirically well supported (Krueger, Reilly, & Carsrud, 2000; Krueger, 1993; Krueger & Brazeal, 1994).

As adapted to entrepreneurial behaviour, Ajzen's (1988, 1991) TPB postulates two antecedents of intention similar to with perceived desirability: attitudes and perceived subjective norms, and a third, perceived behaviour control (PBC), is similar to the perceived feasibility of executing the behaviour. Attitudes to entrepreneurial behaviour are evaluations about whether engaging in entrepreneurial behaviour will have positive or negative outcomes for the individual and perceived subjective norm refers to perceived social pressure for taking or not taking entrepreneurial action; in Shapero's model, these pressures affect intentions indirectly through perceived desirability, while in Ajzen's model, they have a direct effect on intentions. PBC is a well-developed concept in the TPB. It resembles (Bandura, 1997) concept of *self-efficacy* (Ajzen, 1988; Fishbein & Ajzen, 2010). Self-efficacy refers to a person's belief in their ability to undertake the necessary actions to perform, often with a desired or specified level of competence (Bandura, 1997, pp. 3, 21), while PBC is a person's "perception of the degree to which they are capable of, or have control over, performing a specific behaviour" (Fishbein & Ajzen &, 2010, p. 38). The two concepts are similar (Ajzen, 2002; Fishbein & Ajzen, 2010), and most clearly distinguished through their role in theory and measurement. In Bandura's (1986, 1997) Social Cognitive Theory, self-efficacy is primarily associated with perceptions of control based on internal assessment of capability while, in Ajzen's (1991) TPB, PBC is often associated with perceived control over external barriers and constraints, although it can also be derived from both internal factors (Fishbein & Ajzen, 2010). According to Armitage and Conner (2001), perceived behaviour control is strongly correlated to intention and behaviour.

Some authors argue that Shapero's model and the TPB overlap to a large extent in that perceived desirability and perceived feasibility in Shapero's model correspond to Ajzen's attitudes and perceived behavioural control respectively (Kolvereid & Isaksen, 2006; Lars Kolvereid, 1996; Krueger, 1993). Both models assume a willingness and capability to measure intentions. However, there is a difference in the way the concepts are measured. Nonetheless, Krueger et al. (2000) argued that both models offer high utility and strong potential in measuring EI, and empirical analyses of EI support both models as valid frameworks for explanation of entrepreneurial intentions (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Chen, Greene, & Crick, 1998; Fayolle et al., 2006; Kolvereid & Isaksen, 2006; Kolvereid, 1996; Krueger, 1993; Krueger & Brazeal, 1994; Krueger, Reilly, & Carsrud, 2000; Lee & Wong, 2004; Peterman & Kennedy, 2003; Tkachev & Kolvereid, 1999).

Hereby the curiosity of policy maker's crop up in finding the effective homes, sources and tools in stimulating the entrepreneurial intentions and behaviour of the youth. The motivation and focus goes to the academic society in pursuing the goal of entrepreneurial development approach among the youth and graduates (Nabi & Holden, 2008). Hence the higher education institutions are asked to play a fundamental role in the achievement of said objective. Apart from their traditional academic activities and teaching, the higher educational institutions are challenged to equip their students with proper and appropriate motivation, knowledge, skills and capabilities for self-employment and this task is considered to be the third mission of universities (Gibb, 1996; Etzkowitz et al., 2000; Johannisson et al., 1998).

2.3 Entrepreneurship Education and Entrepreneurial Graduates

This section considers the role of education in development of the entrepreneurial graduate. Here, theory, research and academic practice serve policy makers' interests in finding effective ways to stimulate entrepreneurial intentions and behaviour (Nabi & Holden, 2008) and higher educational institutions are challenged to equip their students with motivation, knowledge, skills and capabilities for venture creation, a task sometimes described as the third mission of universities, enhancing the value of discipline-specific teaching and research (Gibb, 1994; Etzkowitz et al. 2000; Johannisson et al., 1998).

Early debate on entrepreneurship and education concerned whether formal education was likely to enhance or reduce motivation and capacity for entrepreneurship. Several authors claimed that formal education in general fails to motivate individuals (while still at university, the "individual" is a student) to establish a business. Instead, they argued that a formal education can be counter-productive, equipping students with knowledge suitable for corporate sectors (Timmons & Spinelli, 1994), promoting a wage earning mentality (Kourilsky, 1995) and restraining innovation and entrepreneurship (Chamard, 1989; Plaschka & Welsch, 1990). Consequently, the early demographic research on entrepreneurship hypothesised that entrepreneurs are less educated than others in the working population (Jacobowitz & Vidler, 1982). This point of view was not borne out by empirical results. Instead, entrepreneurs were found to have higher levels of education than non-entrepreneurs (Bowen & Heroic, 1986) and the individuals involved in running a business (Robinson & Sexton, 1994).

Giving little or no consideration to the generic shortcomings of demographic study of entrepreneurship, the promising results of research on the relationship between formal education and innovation were accompanied by bold decisions from policy makers to introduce specialist courses in tertiary institutions to foster entrepreneurship (Solomon & Fernald, 1991) and encourage entrepreneurial behaviour (Donckels, 1991; Gasse, 1985). There continues to be a widespread belief that entrepreneurship education positively encourages entrepreneurship among graduates and provides an efficient and cost effective means of increasing the number and quality of entrepreneurs in the economy (Matlay, 2006). Entrepreneurship education programmes aim to stimulate the entrepreneurial desire of graduates and produce graduates who can create new businesses. The importance of such programmes is underlined by the policy of government agencies in all over the globe. A series of influential reports by the OECD (Ball, 1989) and the European Commission (2005), argue that entrepreneurship education must be at the core of any nation's education policy. Further the constructive role of entrepreneurship education programs is equally acknowledged in Scandinavian countries as can be witnessed in their policies (Danish Ministry of Science and Innovation, 2008; Norway action plan, 2009-2014; The Finnish National Board of Education 2004). Scholars also strongly emphasise the positive role of entrepreneurship in economic development, but they also emphasise the need to document the role of entrepreneurship education in entrepreneurial development (Kourilsky & Esfandiari, 1997).

Research on the nature, impact and effect of entrepreneurship education has been conducted in a variety of contexts (Gorman, Hanlon, & King, 1997). Several studies primarily describe entrepreneurship courses (Vesper & Gartner, 1997), discuss the

pedagogy of effective entrepreneurship education (Fiet, 2001), or investigate the impact of entrepreneurship education programmes comparing the participants and non-participants of these programmes (Chrisman, 1997).

Although entrepreneurship education is recognised to be important (Donckels 1991; Crant 1996; Robinson and Sexton 1994; Gorman et al. 1997; Zhao et al. 2005), there have been relatively few empirical studies of the impact of education specifically targeted at the development of entrepreneurs, as distinct from general education on the nature of entrepreneurship (Krueger and Brazeal 1994; Peterman and Kennedy 2003). Studies of tertiary level entrepreneurial education are particularly lacking (Byabashaija and Katono, 2011). Most importantly, little research has been conducted on the interrelationship between the entrepreneurship educational processes and the outputs of these processes; thus, educational practitioners are unlikely to know what forms of activity work, and for what purpose, i.e., leading to what changes in student attitude, intention, behaviour, activity and choice (Pittaway & Cope, 2007).

In the early stages of entrepreneurship education research (Gorman, Hanlon, & King, 1997), a number of methodologies were used to measure the effect of entrepreneurship education programmes (EEP). Some studies simply describe courses or trends in entrepreneurship education (Vesper & Gartner, 1997), or investigate the effect of courses by comparing the participants of entrepreneurial courses vs. non participants (Chrisman, 1997).

Some of the earliest research on the relationships between entrepreneurship education and entrepreneurial intentions and behaviours provided only weak support (Gibb Dyer, 1994;

Krueger & Brazeal, 1994; Robinson et al., 1991), but other, particularly more recent research (often using more sophisticated research designs and analytical methods) provides more encouraging results. Participation in enterprise and entrepreneurship education (Dainow, 1986; Gorman et al., 1997; McMullan, Chrisman, & Vesper, 2002) has been demonstrated to be associated with new venture development. Several studies have shown that participation in university-based entrepreneurship education programmes increases the perceived attractiveness of new venture initiation (Fayolle et al., 2006; Peterman & Kennedy, 2003; Souitaris, Zerbinati, & Al-Laham, 2007; Tkachev & Kolvereid, 1999). Three experimental studies have had a strong impact on the field. Peterman & Kennedy (2003) reported that enterprise education affects the entrepreneurial intentions of high school students. Their study was conducted in 17 Australian schools where 109 students were chosen to participate in entrepreneurial programmes and 111 students were placed in a control group. The survey came up with interesting and distinctive results: participants with weak entrepreneurial propensities before participating in the programmes experienced a stronger positive treatment effect than participants with strong ex-ante entrepreneurial intentions. For Souitaris et al. (2007) too, the entrepreneurship education programme was directed at developing stronger entrepreneurship intentions, in their case through a semester-long programme at two major European universities. Participation in the programme increased positive attitudes to entrepreneurship and EI among science and engineering students. This finding is also reflected in the work of Oosterbeek, van Praag, & Ijsselstein (2010) who investigated the impact of entrepreneurship education in a compulsory course using a difference-in-differences framework and affirmed the positive relationship between entrepreneurship education and entrepreneurial intentions of the students.

2.4 Contextual and environmental factors

The impact of contextual and environmental factors like legal, institutional and socioeconomic conditions, entrepreneurial and business skills, financial or nonfinancial assistance and other elements which depend on national or regional location (Gnyawali & Fogel, 1994; Henrekson & Davidsson, 2002) cannot be ignored in the process of developing entrepreneurial intentions or acting on them. Initial research on contextual and environmental factors was designed to improve the ability of early demographic and attitudinal theories to explain the emergence of new ventures (Aldrich, 1990). Researchers have identified several contextual and environmental factors which they have been considered in playing a triggering or precipitating role in transforming an entrepreneurial intention into behaviour (Krueger & Brazeal, 1994; Shapero & Sokol, 1982). In Shapero's model, for example, *displacements* have this effect (Shapero & Sokol, 1982). Where the triggering event fails to activate the intention, entrepreneurial potential is not likely be transformed into entrepreneurial behaviour (Shook, Priem, & McGee, 2003). This notion has some similarity with Fishbein and Ajzen's (2010) definition of an intention as "readiness" (p. 21). Rather than requiring a precipitating or triggering event, however, Fishbein and Ajzen generally assume that people will act on their intentions unless they are prevented from doing so.

Whether or not a trigger is required, contextual and environmental factors appear to act between intention and behaviour, either supporting the realisation of intentions (i.e., the transformation of intentions into behaviours) or providing a barrier. Therefore, it is important to highlight the moderating role of contextual and environmental factors in the relationship between intention and behaviour.

In an international setting, the diverse range of countries with unique cultural, national and institutional characteristics and contexts means that entrepreneurship graduates in different countries are exposed to a unique set of opportunities and challenges (Nabi & Liñán, 2011). Although entrepreneurship programmes inspire and empower an individual with entrepreneurial knowledge and skills and positively impact entrepreneurial intentions, the nature of their impact is different across different economies (Giacomin et al., 2011). Entrepreneurship education may be more critical for the developing countries compared to developed countries (Lee, Chang, & Lim, 2005), but even in economies with consistent growth, a national policy supportive of entrepreneurial structure and development is encouraged (Lee & Peterson, 2001). In Denmark, for example, innovative activities and innovations are the core objective of entrepreneurship education policies (Ministry of Science and Education, Denmark, 2010). Thus, in order for educational programmes to be efficient, they must be adjusted, for example, to the perceived barriers and entrepreneurial attitudes unique to each nation (Pittaway & Cope, 2007).

Three papers provide particular insight into the relationship of contextual factors with entrepreneurial intentions. Muhammad, Akbar, & Dalziel (2011) explored the major prospects and problems generated by the "war economy" encountered by graduate entrepreneurs in Afghanistan. Key findings of their study proposed opportunities for graduates, especially in construction, education and trade within a context of mass destruction while adverse security conditions and widespread corruption were the major problems faced. Another study, conducted by (Mitra, 2002) on a collaborative entrepreneurship development programme by several Nigerian institutions and a UK-based institution suggested some important policy implications and proposed several activities to

motivate the entrepreneurial intentions of Nigerian graduates, including embracing research, knowledge transfer activities, training and continuing professional development programmes. Finally (Campos, Hormiga, & Matiz-Bulla, 2012) investigated the environmental factors that stimulate highly-skilled immigrants from a developing country to return to their home country to establish their own business instead of starting one in the host country. This case-based study found community, family support and true friendship as important components of the decision to return home.

2.5 The process of entrepreneurial intention development

2.5.1 Psychological Factors: Entrepreneurship as intended, planned behaviour

The current section begins by adopting the commonly accepted tenet that entrepreneurial behaviour is planned behaviour (toward a specific goal such as venture creation or starting a business) which follows from formation of intentions. This view is consistent with the results of the great number of empirical studies and meta-analyses reported in the social psychological literature, which confirm that intentions are the best predictors of planned behaviour over which individuals have control (Armitage & Conner, 2001; Fishbein & Ajzen, 2010; Sutton, 1998; Ajzen & Klobas 2013.). The ability of intentions to predict behaviours means that understanding the formation of entrepreneurial intentions also provides an insight into the new venture initiation process.

In the domain of business start-ups and entrepreneurship, our conceptualisation of the TPB proposes that three factors account for variations in entrepreneurial intentions and can thus be used to predict intentions for entrepreneurial behaviour. These factors are: attitude

towards entrepreneurial behaviour, e.g., towards starting one's own business as compared to being employed in the service of others (Kolvereid, 1996); subjective norms or perceived social pressure (Fishbein & Ajzen, 2010) to become (or not to become) an entrepreneur, which incorporates perceived social pressure from peers, family and, as it is important to entrepreneurs, society as a whole (Ajzen, 2001; Krueger Jr, Reilly, & Carsrud, 2000); and perceived control for entrepreneurship, which refers to one's perception that they can take the actions necessary to become an entrepreneur, and which would typically incorporate evaluations of skills and intellectual ability as well as ability to overcome setbacks or deal effectively with barriers. In turn, intentions play a role as a mediator between these factors and behaviour, even when attitudes are credited as accounting for variations in behaviour (Bagozzi, Baumgartner, & Yi, 1989).

Thus, it is argued that intentions-based models offer a great deal to entrepreneurship researchers. Entrepreneurial activity is clearly a planned behaviour. Intent is a critical characteristic of organisation formation so studying pre-organisational phenomena, including the decision to initiate an entrepreneurial career, are clearly both important and interesting (Katz and Gartner 1988). On the basis of the literature we review here, we hypothesis that:

H1. *The stronger the intention to become an entrepreneur, the more likely an individual will be to start his or her own business.*

2.5.1.1. Attitude towards behaviour and entrepreneurial intention

The attitude towards entrepreneurial intentions in TPB is comprehensive and inclusive evaluation of an action (Ajzen, 1991) In addition the attitude towards venture creation refers to the invitation of the proposed behavioural or the degree to which an individual carries a positive or negative personal appraisement about being an entrepreneur (Ajzen, 1991, 2002; Kolvereid, 1996b). In this sense attitude towards the behaviour is a significant factor related to the perception of desirability that affects entrepreneurial intention. Furthermore a positive attitude towards entrepreneurship leads to a positive entrepreneurial intention. Thus 'high' attitude towards becoming an entrepreneur indeed reveal that the an individual is more inclined to start his/her own business as compare to organization employment (Kolvereid, 1996a).

In addition, TPB explains attitude towards a behaviour is determined by a complete set of measurable beliefs associating the behaviour with distinct other attributes and outcomes. Indeed, the strength of each belief is subjective by the assessment of the outcomes (Ajzen, 1991). Thus two individuals may carry equally strong belief that entrepreneurship development needs more efforts and involves various challenges. However, one of them may perceived these challenges positive and consider it a potential opportunity for entrepreneurship development while other may recognize it troublesome and undesirable. Therefore the above mentioned two element process of attitude formation helps the scholars why individuals holding different beliefs may exhibit identical attitudes, and vice versa.

Several previous studies have showed a positive relationship between attitude towards entrepreneurship and entrepreneurial intention. This is also witnessed by a meta- analysis where the researcher (Armitage & Conner, 2001) indentify 161 journal articles and book chapters including 185 empirical tests of the theories. Their results indicated that the average correlation of the antecedents and behavioural intentions were 0.49 for attitude towards behavioural. Similarly (Kim & Hunter, 1993) perform a meta-analysis study across a wide variety of target behavioural and related intentions, in which they reported that attitudes explain over 50 percent of the variance in intentions.

Based on conjecture made in prior studies in entrepreneurship, where they broadly confirmed the theories predictions on the subject of relationship between intentions and its antecedents and extending these prior findings to this study, positive attitude towards entrepreneurship will trigger intentions to become entrepreneur. Accordingly, given, the well established rationale and empirical support for effect of attitude towards behavioural on behavioural intentions, it is hypothesized that:

H1a: *The stronger the entrepreneurial attitude with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business*

2.4.1.2 Subjective norms and entrepreneurial intention:

The second component and antecedent of the TPB is subjective norms (SN). Subjective norms refers to perceived social pressure from family, friends, colleagues and other individuals in the group (Ajzen, 1991) to perform particular behaviour. It is further defined that the above mentioned referral group may appreciate or discourage the individual in

his/her decision for becoming an entrepreneur (Ajzen, 2001). Generally subjective norms tend to contribute more weekly in account of variation in intentions of an individual (Armitage & Conner, 2001) with strong locus of control (Ajzen, 2002) than the individual with strong action oriented (Bagozzi, 1992). Several studies in the entrepreneurship literature, illustrate no direct affect of subject norms on the entrepreneurial intentions particularly, those studies who applied theory of planned behaviour (Ajzen, 1991) and intended to measure entrepreneurship and self employment intentions of students (Fayolle & Gailly, 2004; Krueger Jr et al., 2000). On the other hand subjective norms in social capital literature find evidence pointing out the positive impact of subjective norms on the attitude towards behaviour and previewed behaviour control (Scherer, Brodzinsky & Wiebe 1991; Cooper 1993; Matthews and Moser 1996; Kennedy et al. 2003; Linan and Santos 2007). Consequently several authors in their studies exclude subjective norms for example (Sparks, Shepherd, & Frewer, 1995).

Although, some empirical studies indicates insignificant influence of subjective norms on entrepreneurial intention, however, several other studies find subject norm as positive and measure significant variance in behavioural intention. For example (Kolvereid, 1996b) reported a direct and significant impact of social norms on the entrepreneurial intentions. Moreover (Trafimow & Finlay, 1996) found a clear divergence and contract across 30 behaviours between individuals whose actions are mostly driven be attitude and those whose actions are backed by subjective norms. Further analysis in the current study of this relationship would contribute this discrepancy. Thus it is hypothesized that:

H1b: *The stronger the subjective norms with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business*.

Subjective norm is found to have indirect effect entrepreneurial intention on an individual, while effecting attitude and perceive behavioural control. Since both elements: attitude towards behaviour and perceived behavioural control are facilitated and govern by internal and psychological feelings of an individual. In this regards, an individual back by strong social norms from family, friends or other relationship lead to in generation of values, beliefs, or trust in the cognitive dimensions favouring individual perceptions (Liñán & Santos, 2007). Thus positive entrepreneurial values presumed from the society, such as family and friends would generate more constructive perception of attitude towards entrepreneurship and also in greater behavioural control in initiating and establish a firm. On the other hand bridging emotional and intellectual capital may also breed in favourable values and beliefs towards entrepreneurial intention and behaviour. Therefore it could be argued that subjective norms would positively influencing attitude towards entrepreneurship and perceived behavioural control. In addition social literature finds verification supporting that subjective norms positively and significantly affect attitude towards behaviour and perceived behaviour control (Kennedy, Drennan, Renfrow, & Watson, 2003; Liñán & Santos, 2007; Scherer, Brodzinski, & Wiebe, 1991) Subsequently following the above rationale it is hypothesized that:

H1d: *Subjective norms with regards to become an entrepreneur, has positive impact on attitude towards entrepreneurship.*

H1e: *Subjective norms with regards to become an entrepreneur, has positive impact on Perceived behavioural control.*

2.4.1.3 Perceived behavioural control and entrepreneurial intention

Perceived behaviour control is a third component of TPB and considered the most important factor that explains a major part in the variation of intentions. Perceived behaviour control is defined as the ability of an individual's ability in performing any behaviour and they have strong believe on their ability to perform the particular behaviour such a starting a business (Kolvereid, 1996a). Perceived behaviour control is considered of holding similar concept and meaning but not exactly of self efficacy explained by of (Bandura, 1977, 1982). The consideration of the PBC element in the process of new firm creation lies in its predictive capacity. Although some scholars argued (Armitage and Conner, 2001) that self efficacy is more relevant and clearly defined in context of intentions. In deed PBC is replaced by self efficacy in numerous empirical studies Kolvereid & Isaksen, 2006; Krueger et al., 2000; Moriano, 2005; Hessels, Van Gelderen, & Thurik, 2008), and strong and positive relationship of self efficacy with business creation and entrepreneurial success is witnessed in a meta analysis study (Rauch & Frese, 2007). However, the prime argument of PBC in relation with new firm creation process is, how an individual efficiently and effectively utilize his/her capabilities and abilities to better control the behaviour along the way, in the way in establishment of entrepreneurship (Ajzen, 2002). In this context the following element could be influenced by different internal and external factors. Such as enactive mastery, role modelling, social persuasion and judgments (Bandura, 1997). Thus an individual ,with substantial beliefs about their capabilities and better control in initiating and executing the required activities for starting and establishing a business and also efficiently managing the events that affect their lives lead to firm entrepreneurial intentions (Ajzen, 2002). The theory of planned behavioural and particularly perceived behavioural control has found much empirical support with

positive and significant relationship with intentions in the area of entrepreneurship for example (Fayolle & Gailly, 2005; Kolvereid, 1996b; Krueger Jr et al., 2000; Liñán, 2004; Tkachev & Kolvereid, 1999; Veciana, Aponte, & Urbano, 2005). Moreover perceived behavioural control has positively and significantly attached with occupational choice among college students. Thus perceived behavioural control may be an important element in investigating entrepreneurial intention and behavioural during the provision of entrepreneurial training and education. Therefore it is hypothesized that:

H1c: *The stronger the perceived behavioural control with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business*

2.4.1.4 Perceived behavioural control and entrepreneurial intention and behaviour

The proviso that intentions predict behaviour, over which individuals have control, is an important characteristic of the TPB, which differs from the theory of reasoned action (TRA, Fishbein & Ajzen, 1975) only in its inclusion of perceived behavioural control (PBC). PBC accounts, at least in part, for the extent to which the individual has control over the actions that are necessary to perform the behaviour. It affects not only intentions, but also realisation of intentions.

As we indicated in the previous section, PBC for entrepreneurship refers to a person's beliefs that they have the skills and intellectual ability to become an entrepreneur as well as that they are able to overcome setbacks or deal effectively with barriers to implementation of their entrepreneurial intentions. Thus, in line with the TPB, perceived control for entrepreneurship is likely not only to contribute to the formation of entrepreneurial

intentions but also to be involved in the subsequent emergence of the intended new business venture. Thus, we propose that:

H1d: *Perceived control for entrepreneurship and entrepreneurial intentions to become an entrepreneur together provide a more complete explanation of entrepreneurial behaviour than entrepreneurial intentions alone.*

2.5 Exogenous Factors: Entrepreneurship Education

The TPB addresses the origins of the direct determinants of intentions and the beliefs that underlie them only in generic terms that are not specific to any applied domain (Fishbein & Ajzen, 2010). Thus, while the TPB indicates the mechanisms by which external factors might influence the determinants of intentions and behaviour, it remains open to the variables that are likely to affect how beliefs about entrepreneurship and associated attitudes, subjective norms, perceived behavioural control and intentions are formed. In other words, it is up to entrepreneurship researchers to identify exogenous influences on the psychological system of intention creation.

The early research that sought to identify the personal characteristics of entrepreneurs was primarily concerned with exogenous influences on entrepreneurial behaviour (Shapero & Sokol, 1982). Exposure to entrepreneurial activity was one of the earliest recognised exogenous effects (Krueger, 1993; Matthews & Moser, 1996). Since then, a substantial body of studies has provided evidence of a link between exposure to entrepreneurship as part of management or science education and entrepreneurial intentions or entrepreneurial activities (Fayolle and Lassas-Clerc, 2006; Galloway & Brown, 2002; Gorman et al., 1997; Henderson & Robertson, 2000; Peterman and Kennedy, 2003; Souitaris et al. 2007;

Tkachev and Kolvereid, 1999). In spite numerous empirical studies reported insignificant impact of entrepreneurship education on the entrepreneurial intentions of an individual, e.g. Brenner, Pringle and Greenhaus (1991) reported in their study that only 5% of the students pretended to start their own business after completion of their studies. Further the results of a survey conducted in Norway reported almost the same results as only 7% of students indicated as self employment as career choice (Kolvereid, 1996). However several other studies integrated a major education variable into research models in order to explain entrepreneurial intentions and students taken part in those studies reported higher level of entrepreneurial level intentions (Karhunen and Ledyaeva, 2010; Kuckertz; Shinnar, Hsu, & Powell, 2014 and Wagner, 2010; Liñan and Chen, 2009). Thus, it seems reasonable to argue that participation in entrepreneurship education programmes will increase individuals' intentions to start their own businesses (Krueger & Carsrud, 1993). This observation, together with TPB's general proposition for the action of exogenous factors, leads us to hypothesis that:

H2. *Participation in entrepreneurship education programmes positively affects the entrepreneurial intentions of individuals.*

Entrepreneurship education is considered as important and influential source in developing entrepreneurial attitude among the society (Bae, Qian, Miao, & Fiet, 2014) and the rapid incorporation of entrepreneurship education programs can be noticed in the curriculum of colleges and universities all over the globe (Solomon, Duffy, & Tarabishy, 2002). As a result several early studies in the field target variety of objectives to know the exact attached benefits from these particular education programs. Thus the existing studies were either to describe the courses (Vesper & Gartner, 1997), entrepreneurship can be integrated

in education domain (Fiet, 2001), or comparative studies between takers and non-takers established on entrepreneurial courses and activities (Chrisman, 1997). While, (Souitaris et al., 2007) established three objectives of specialised entrepreneurship education programmes (EEP): graduates should benefit in terms of learning, inspiration and utilisation of resources. They explained how the four structural components of entrepreneurship courses enable EEPs to achieve these objectives: (a) from *the taught component*, students are expected to gain specific knowledge of entrepreneurship; (b) the *business planning component* aims to motivate and inspire graduating students to come up with business ideas; (c) in the *interaction with practice component*, seminars, workshops and training can be conducted and networks with practitioners and investors built; and (d) through the *university support component*, a group of university-provided resources provided by universities helps students and graduates experiment with their business ideas with the aim of eventually converting the ideas into a successful venture.

2.5.1 Entrepreneurship education learning benefits

In perspective to the proposed benefits mention above, the primary benefit is learning about entrepreneurship, which may motivate and encourage a student through acquiring constructive knowledge of entrepreneurship establishment and development. The entrepreneurial learning and experience positively impact entrepreneurial antecedence such as values, attitude, behavioural control and personality traits, etc and entrust confidence needed to students to create their own venture (Zhao, Seibert, & Hills, 2005). The entrepreneurship courses also provide the opportunity to observe the successful mentors and thus the opening for vicarious learning to take place. These opportunities are offered in the form of seminars, lectures given by the local entrepreneurs, case studies of influential

entrepreneurs or practically interaction with an entrepreneur on course project (Zhao et al., 2005). In addition (Johannisson, 1991) indentified five level of learning from entrepreneurship education: Why entrepreneurs act (values, motivation), what needs to be done (knowledge), how to do it (abilities, skills), who should we know (social skills, networks) and finally when to act (experience and intuition). Further knowledge derived during entrepreneurship education programs through several provided means facilitates the integration and accumulation of new knowledge, providing individual with larger opportunity set (Gimeno et al., 1997). Recent results depicts prior entrepreneurial knowledge is positively linked with identification of greater number of opportunities and innovativeness (Shepherd, 2003). The individuals equipped with rich entrepreneurial knowledge resulted from those particular programs expedite their entrepreneurial attitudes and intentions and are expected to be more confident in initiating and establishing their own businesses. Thus to empirically test the above supposition in the current study it is hypothesized that:

H2b. *The higher the learning from entrepreneurship education program the higher will be the entrepreneurial attitude, subjective norm, perceived behavioural control and intention to become an entrepreneur*

2.5.2 Entrepreneurship education Inspiration benefits

Other than providing conceptual knowledge and learning about entrepreneurship benefits, individuals enrolled in entrepreneurship education programs can be benefited in terms of triggering and intensifying the inspiration towards entrepreneurship and venture creation. Inspiration was generally explained as “the infusion of some idea or purpose into the mind and the awakening or creation of some feeling of impulse” (Oxford English Dictionary;

Simpson and Weiner, 1989). The psychology literature provides more distinct and practical conceptualization of the construct. It is further explained by (Elliot & Church, 1997) that the inspiration entails motivation which boost up and direct a particular behavioural of an individual. In the broad review of the literature, (Thrash & Elliot, 2003) recommended differed but similar descriptions of inspiration such as: inspiration is raised and provoked in place of initiated through an act of will without apparent cause a term 'trigger' was used to the stimulus that arouses inspiration. Furthermore inspiration brings new thoughts, behaviourals (Isabella, 1990) and a change of minds (Falcioni's (2001). Since it is argued that an entrepreneur is an explorer and adventurer thus a potent and efficient entrepreneurship education programs must be attributed with components that could intensify integrative, innovative and inspirational characteristics of the individuals enrolled in the particular programs (Rabbior, 1990). Similarly it is expected that entrepreneurship education programs are among the best fuels for inspiring the students to establish and develop entrepreneurship in a society but not only increasing number of business start-ups rather offering upgraded, innovative and creative products and services. In context of operationalization of the construct in academia, students confirms the understating of inspiration when it is tied with a trigger (inspiration from what?) and to a target (inspiration to do what?) (Souitaris et al., 2007). Therefore, the inputs given in terms of events conducted during entrepreneurship education programs could trigger the inspiration of students and make them consider becoming an entrepreneur and would the first step that significantly change of attitudes and intentions towards entrepreneurship (Souitaris et al., 2007). Subsequently following the above rationale it is hypothesized that:

H2c. *The greater the inspiration from entrepreneurship education program the higher will be the entrepreneurial attitude, subjective norm, perceived behavioural control and intention to become an entrepreneur*

2.5.3 Entrepreneurship education incubation resources benefits

The entrepreneurial graduates enrolled in the entrepreneurship education programs are subjected to utilized and benefited from a pool of resources offered in the particular programs. Access and utilization of the resources attached with every component of the entrepreneurship education programs would possibly facilitate them in discussing, developing and evaluating business ideas, resulting in to evolving a potential business idea and venture creation (Souitaris et al., 2007). For example, as part of the taught course, students can relate to a group of entrepreneurial-minded classmates in order to build a team. While carrying out business-planning activities, they can get advice from lecturers, technology transfer officers and classmates and use a business plan competition to test their venture. Additionally, students can utilise networking events to access practitioners for recruitment or advice and get referrals to investors. Finally, due to their university association students can often get close to technology with commercial potential, access research resources (e.g. proprietary market research reports in the library), use physical space for meetings and at times even access university seed-funding.

Resources were considered as significant derivers in establishing and developing entrepreneurship. Thus entrepreneurs are anticipated as constantly upgrading markets offerings integrating innovative and impulsive combination of resources (Schumpeter, 1934). Further it is argued that entrepreneurship is raised as result of pursuing of an opportunity without regard to the resources currently controlled (Stevenson & Jarillo,

1990). The learning process either through education trainings or vocational trainings which finally results in entrepreneurship development occurs from particular relevant nascent entrepreneur activities, that includes opportunity identification, resources accumulation, products/services conceptualization and fundamental building blocks of the organization (Honig, 2001). Thus accessing the above mentioned resources particularly the pool of resources, this is considered as the critical barrier in entrepreneurship establishment, offered during entrepreneurship education programs would significantly convince students to start their own business and therefore boost up their attitude and intentions. Thus it is hypothesized that:

H2c. *The higher the utilization of incubation resources the higher will be the entrepreneurial attitude, subjective norm, perceived behavioural control and intention to become an entrepreneur.*

2.6 The impact of contextual and environmental factors

Although the current research posits the entrepreneurship education programs positively affect entrepreneurial attitude, subjective norms, perceived behavioural control, entrepreneurial intentions and finally behaviours. However, the moderating effect of contextual and environmental factors like legal, institutional and socioeconomic conditions, entrepreneurial and business skills, financial or nonfinancial assistance and other elements which depend on national or regional location (Gnyawali & Fogel, 1994; Henrekson & Davidsson, 2002) cannot be ignored in the process of developing entrepreneurial intentions or acting (Schlaegel & Koenig, 2014). Moreover, as (Pittaway & Cope, 2007) and also (Carayannis, Evans, & Hanson, 2003) point out, intentionality is surrounded by several compulsory aspects such as cultural expectations, barriers to business start-up and environment; thus intentionality itself will be more or less influenced by perceived and real

barriers to action and will be affected by the general enterprise of infrastructure. In addition, if the contextual and environmental factors are importantly similar to personality traits and play a role as essential facilitators for entrepreneurial activities (Hisrich & Peters, 1995; Pennings, 1997) thus affecting the entrepreneurial decision process of entrepreneurs in their countries of origin, then it could be argued that these same variables will be perceived as a facilitator or precipitator by the graduates and will be an influencing effect on regulating attitude and also an impact on their perceived behavioural control, entrepreneurial intention and behavioural (Watson, Hogarth-Scott, & Wilson, 1998). Thus, contextual and environmental factors cannot be separated from physiological and demographical factors (Turker & Selcuk, 2009) and this strongly is a suggestion for considering not only temporal issues (Bird, 1991) but also contextual and environmental factors which may precipitate, facilitate or inhibit entrepreneurial attitude, intentions and behavioural.

The current study proposes that contextual and environment factors may serve to constrain or moderate the relationship of entrepreneurial intentions and behaviours. The contextual and environmental factors are current research referrers to a “combination of factors that play a role in initiating and developing entrepreneurship among nascent entrepreneurs. First it refers to the (Perceived entrepreneurial motivators: intrinsic rewards, extrinsic rewards and perceived entrepreneurial support that facilitate and accelerate an individual ability and willingness to carry out entrepreneurial activities. Secondly it refers to overall socio-economical, political and institutional factors (Perceived entrepreneurial barriers) that depressingly influence motivation of university graduates in initiating and commencing business start up activities.

2.6.1 Perceived entrepreneurial motivators

Research in the entrepreneurship has investigated a broad array of motives and that would lead an individual to initiate and develop a business. It is argued that motive is provided when someone owns venture creation is the most desirable career option (Douglas & Shepherd, 2000) and thus opportunity is provided by the individual's perception of an un-served or under-served market need (Shane, 2000). Further it is argued that an individual's entrepreneurial intentions and actions will be triggered, provided that it promises them the optimum expected psychic satisfaction and utility (Douglas & Shepherd, 2000). Utility is resulting from the leading outcomes by employment or self-employment situations. It is further argued that individuals acquire positive psychological satisfaction and utility lead to prefer to have more intrinsic rewards and other net perquisites resulting in positive entrepreneurial intentions and actions.

In some earlier studies Bird (1989)and (Volery, Doss, & Mazzarol, 1997) the prominent motivated factors which were brought to the discussion were intrinsic motivators (e.g psychological rewards) and extrinsic motivators (financial and other tangible rewards) investigated directed effect on entrepreneurial intentions and found a significant and positive relation with business creation (Choo & Wong, 2006). In addition contextual support (appreciating the entrepreneurial attitude) found a constructive consequences on entrepreneurial intentions and behaviours of university graduates (Lüthje & Franke, 2003). Thus it could be argued that a student might be motivated and willing to found a business in perceiving supportive conditions (trigger effect) regardless of his negative attitude towards entrepreneurship, therefore to empirically test the above supposition in the current study it is hypothesized that:

H3a: *The more favourable individuals perceive contextual factors to be founding a new venture, the more likely they are to act on their intentions to become entrepreneurs.*

2.6.2 Perceived entrepreneurial Barriers

An individual carrying a positive and well developed entrepreneurial intention is never granted leading to a successful action resulting venture creation (Triandis, 1977). Intentionality for entrepreneurship is surrounded by cultural expectations, barriers to business start-up and business environment; thus entrepreneurial intentions themselves will be more or less influenced by perceived and real barriers to action and will be affected by the general business infrastructure of the environment (Carayannis et al., 2003; Pittaway & Cope, 2007). Several empirical studies investigate the direct effect of particular phenomenon in literature and propose certain important factors to the consideration of academic society and policy makers. Further very few empirical studies examine the barriers either real or perceived are conducted among the graduates. This is evident in following studies that investigate barriers to creating business among entrepreneurs, (Young and Welsh, 1993; Kuratko et al, 1997). Furthermore general business climate, security of present employment and family commitment factors were found significantly different between the perceptions of non-starters and starters of a business (Finnerty & Krzystofik, 1985). (Volery et al., 1997) indentified three factors as barriers namely "risks greater than initially expected," "the lack of own savings or assets" and "a more difficult task than expected," surveying 45 non-starters in Australia. In addition a fear of failure, regulation, taxation and difficulties in obtaining finance were also found as barriers in starting some own's business in literature review of research into barriers to start up (Robertson, Collins, Medeira, & Slater, 2003). Thus it could be argued that graduates with

a positive attitude towards new venture creation may not decide to start their own business due to a negative perception of salient factors in the environment. Extending the above mentioned arguments it is hypothesized that:

H3b: *The stronger the perceived or actual barriers to found a new venture the less likely individuals are to act on their intentions to become entrepreneurs.*

2.7 A model of entrepreneurial intention and behaviour

Hypothesis 1 to 6 is brought together graphically in (Figure 2.1). The figure also shows how the propositions map to the core of the theory of planned behavioural. The exogenous factors included in (Figure-1) are limited to those hypothesised in this model to affect the psychological factors directly associated with the formation of entrepreneurial intentions (*Ent. Intentions* in the figure2.1).

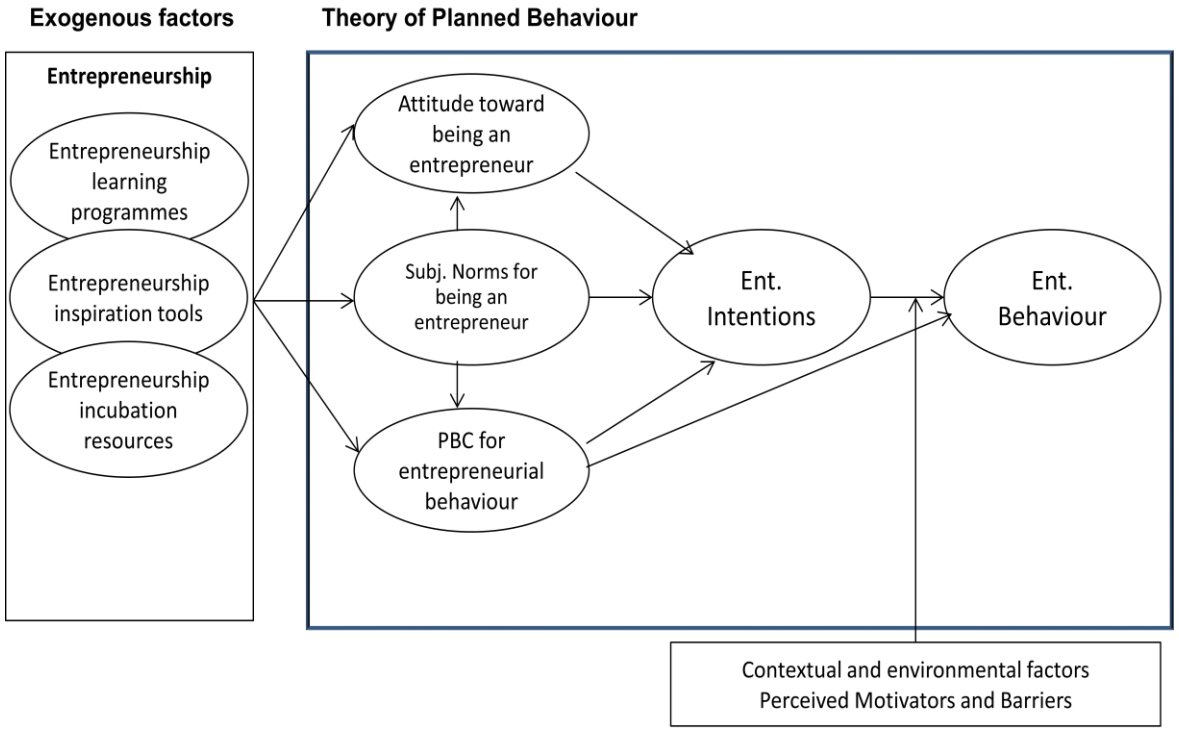


Figure: 2.1 Theoretical Model

2.8 Conclusion

The ongoing debate about whether and how contextual and environmental conditions, and psychological factors such as attitudes and perceptions, affect a students' career decision towards staring their own venture creation is yet to be resolved. Although they have observed a relatively high number of business start-ups initiated by students graduating from colleges and universities, policy makers would still benefit from a clear understanding of the process and knowledge of the relative importance of different factors (Scott & Twomey, 1988). Taking this as the starting point, in this paper, we have proposed a framework to analyse the linkages between antecedents of entrepreneurial intentions and entrepreneurial behaviour. Moderating variables, missing in many studies, are incorporated within the framework. If, on the one hand, personality traits, which tend to be stable over the short-term, are the only cause of venture creation, entrepreneurship education programmes would not encourage entrepreneurial development. On the other hand, if the inclination of students to start their own business is mainly influenced by actions related to development of attitudes, knowledge and skills for founding new ventures, such as entrepreneurship education programs in universities, and contextual factors (the contextual and environmental opportunities perceived to be motivators and barriers), changes in these factors should have an effect on entrepreneurial intentions by affecting attitudes, perceptions of social expectations and perceptions of ability to become an entrepreneur.

If this is the case, policy makers, particularly the personnel in government entrepreneurship development institutions and centres and decision makers and program managers in the universities will gain insights which may help them to take effective measures in promoting the entrepreneurship development approach among university graduates. Furthermore,

tying diverse factors in the education sector and in the external environment in a single logical process provides an opportunity for policy makers to better understand the phenomenon of venture creation, from initiation to formation of entrepreneurial intentions and deciding whether or not to act on intentions in the light of environmental and contextual barriers and opportunities. This will help to establish effective and successful collaboration between the university, government and private sectors for development of entrepreneurship in the society. To develop entrepreneurial behaviours among students and graduates, universities could be encouraged to provide constructive, efficient and effective means of entrepreneurship development. Entrepreneurship education programs play such a role by merging the diverse factors and components of entrepreneurship development (theoretical knowledge, practical experience interaction with corporate sectors and inspiration) in a single program. These programs not only make students aware of the world of entrepreneurship, in addition, during these programs the students get chance to learn about potential opportunities and barriers residing in their particular context and environment, what is needed to muster the resources necessary to take advantage of opportunities and overcome barriers, and how and when to trust their judgment.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is concerned with the selection of an appropriate methodology, by which the validity of research can be judged. Thus, the researcher intends to provide a clear and complete justification of how the proposed research is carried out and why particular procedures were preferred and applied. The methodology applied in this study is derived from the literature reviewed, in the context of a particular subject of interest and the conceptual framework proposed in Chapter Two.

Based on a conceptual approach, several testable hypotheses have been developed to investigate the relationship between dependent and independent variables. Initially, a philosophical viewpoint of research is examined in order to understand the philosophy of research methods which leads to a satisfactory justification and validation of a method adopted in the current research. Later, in the current chapter, a brief explanation is provided to justify the strategy and process adopted for this study. A comprehensive research design is established to exercise the whole process efficiently and effectively.

This chapter is systematically and logically explained in different sections to provide maximum descriptive and statistical information on the process carried out in this study. The chapter is explained in thirteen major sections. It begins with the first three sections on research paradigms which provide a constructive route in developing and designing research design applied in this research. Section four provides an explanation on the population, sampling frame and justification of the selected sample of the study. Section

five explains how the research instrument is developed. Section six of the chapter is based on the procedure of the operationalization of the constructs. Section seven and eight explain the demographic and control variables. The purpose of having a pilot study and the discussion on the results of the study is explained in Section nine. The final section of the chapter concludes with a summary of the chapter.

3.2 Research Paradigms

The paradigm approach in a contentious sense was introduced by Thomas and Kuhn in the early 1960s, and can be defined as an 'individual's beliefs, norms, standards, value judgments, perspectives, ideologies, myths, theories, and approved procedures that govern his thinking and action' (Gemmesson, 2000. P.18). The research project is always initiated by deciding on a research topic and a research paradigm that guides the proposed theory (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Further research on the definition of paradigm referred to it as 'a basic set of beliefs, and assumptions that we are willing to make, which serve as touchstones in guiding our activities' (Lincoln, 1989). In addition, Taylor, Kermode, and Roberts (2007, p.5) define a research paradigm as "a broad view or perspective of something."

Historically, the research that was primarily occurred in the scientific method, particularly in the natural science during the enlightenment era (Chisick, 2008).. Later on, several scholars argued that as humans are always interacting with their surroundings, they therefore develop some common beliefs and judgments regarding any particular phenomenon. The beliefs and judgements would indeed require them to be validated and generalized.

Positivism approach “refers to a collection of numerical data in the understanding of human behaviours” and would be a preferred approach in social science (Erickson, 1985). More scholars later began to argue that positivism is an appropriate approach to be adopted in social science research (Erickson, 1986). Their arguments were supported by the view that issues in social science which are confined by known facts, objects and other measurable entities intended to adopt positivist paradigm (Onweugbuzie, 2002; Smith, 1983). They further argued that the research studies in social science mainly deal with psychological aspects which are derived from the human minds and therefore require particular respondents to communicate and interpret. Later on, some constructive characteristics emerged in the subject under debate known as constructive paradigm (Denzin & Lincoln, 2005). Consequently, scholars in social science endorsed the argument and appreciated to adopt constructive paradigm in their studies. However, later, both approaches were used by scholars in social science research, particularly those scholars whose research theories were bound to ‘mixed methods’ approaches (Creswell, 2012; Creswell & Clark, 2007). Although a combined approach is applied in many studies, difficulties however in applying both approaches in a single research is yet under debate (Creswell & Tashakkori, 2007; Crewell, 1994; Schultz & Hatch, 1996). The main features of quantitative and qualitative paradigm are provided in table 3.1.

Table 3.1: Main Features of the Quantitative and Qualitative Paradigm

Quantitative (Positivistic) Paradigm	Qualitative (Constructivist) Paradigm*
Applies scientific principles.	Applies understanding principles.
Uses prediction.	Uses exploration.
Values objectivity.	Values inter-subjectivity.
Aims to produce quantitative data.	Aims to produce qualitative data.
Uses large (statistical) samples.	Uses small (theoretical) samples.
Is concerned with hypothesis testing.	Is concerned with generating theories.
Data is highly specific and precise.	Data is rich and descriptive.
Location is artificial.	Location is natural.
Reliability is high.	Reliability is low.
Validity is low	Validity is high.
Can claim generalization from sample to population.	Can claim transferability, from context to similar context.

Source: Adapted from Hussey and Hussey (1997)

*This content reflects Hussey and Hussey's emphasis on the phenomenological sociological perspective.

3.2.1 Current Study Research Paradigms and their justifications

The current study is carried out with several prime objectives such as understanding the phenomenon of entrepreneurship emergence, particularly among the university graduates and enhancing the knowledge in particular areas of interest. The motivation of the study guided student in identifying a significant contribution derived from reviewing a large amount of literature. Hence, a conceptual framework is developed by integrating distinct but relevant fields, such as the role of entrepreneurship programs may (or may not) play in developing entrepreneurial intention and environmental and contextual factors. Investigating and validating several prime purposive objectives of the research project require in examining the relationship among proposed constructs of the study, which results in developing a number of hypotheses. The discussion in the previous section (3.2) provides useful information to guide this research in adopting the most appropriate approach. This study, therefore, applied a positivist approach in testing hypothesis to provide a number of valid reasons.

According to Remenyi, (1998) a review of relevant literature is a road map to develop a methodological framework, which will guide the study in projecting and forecasting a particular trend of the phenomenon. The first reason in applying a positivist paradigm is to minimize the methodological errors in adopting the same methodology used by several renowned scholars earlier in the particular area of research (Athayde, 2009; Cruz, Escudero, Barahona, & Leitao, 2009; Peterman & Kennedy, 2003; Von Graevenitz, Harhoff, & Weber, 2010). Thus, by drawing a significant support to the positivist methodological framework and paradigm used in this study, the quantitative results produced would be supporting, confirming or challenging the findings of other scholars in a different research context.

The second reason is based on the nature of the study and its factors with different but relevant areas such as "entrepreneurial psychological factors, entrepreneurship education, and contextual and environmental factors" which require more test cases and observations in that particular context; else it may create and promote uncertainties that emerge from numerous factors attached with the phenomenon of venture creation. These factors include socio-demographic characteristics, knowledge, attitudes, behavioural patterns, motivational levels and individual life experiences. Thus, in this particular study, a scientific method which is considered the foundation for a positivist research is used. This method provides a guideline to the researcher in different ways, for example, relying on objective measures while testing hypothesis to support their findings and abstaining from common problems (general assumption and bias) attached with interpretive research (Wicks & Freeman, 1998). Similarly, a quantitative research approach is advocated as it leads to the verification

of hypotheses providing strong reliability and validity (Amaratunga, Baldry, Sarshar, & Newton, 2002).

Finally, the reason for adopting a positivist approach in this study is in consideration of the interest of the potential audience. As seen in the previous studies using the quantitative approach, it seems that the potential audience (e.g. examiners, graduate committees, journal editors and readers) are more inclined to investigate the current topic in a quantitative perspective. Thus, it is more logical and appropriate to carry out the current study using the quantitative approach.

3.2.2 Contrasting Quantitative and Qualitative Methodologies

When deciding on a research philosophy, a researcher is required to follow several important philosophical assumptions such as ontology, epistemology, human nature and methodology which are related to reality and the association between a researcher and reality and the approaches used by the researcher to discover the reality (Healy & Perry, 2000). Thus, these assumptions are guidelines which help to differentiate between quantitative and qualitative methodologies (Creswell, 1994). Assumptions of the qualitative and quantitative methodologies are shown in table 3.2.

Table 3.2: Assumptions of the Qualitative and Quantitative Methodologies

Assumption	Question	Quantitative	Qualitative
Ontological	What is the nature of reality?	Reality is objective and singular, apart from the researcher.	Reality is subjective and multiple as seen by participants in a study.
Epistemological	What is the relationship of the researcher to that being researched?	Researcher is independent from that being researched.	Researcher interacts with that being researched.

Axiological	What is the role of values?	Value-free and unbiased.	Value-laden and biased.
Rhetorical	What is the language of the research?	Formal. Based on a set of definitions. Impersonal voice. Use of accepted quantitative words.	Informal. Evolving decisions. Personal voice. Accepted qualitative words.
Methodological	What is the process of the research?	Deductive process. Cause and effect. Static design-categories isolated before study. Context-free. Generalizations leading to prediction, explanation and understanding. Accurate and reliable through validity and reliability.	Inductive process. Mutual simultaneous shaping of factors. Emerging design-categories identified during research process. Contest-bound. Patterns, theories developed for understanding. Accurate and reliable through verification.

Source: (Creswell 1994)

The scholars and researchers discussed both philosophies of the research where the positivism paradigm is based on the ontology of the world, assuming the subjects under investigation have measurable stable reality which is external and objective (Guba and Lincoln, 2005). According to Burrell and Morgan (1979), both subjective and objective paradigms in social science research followed four assumptions.

From the ontological assumption perspective, the major concern is on the nature or essence of the social phenomenon to be assessed. The positivist paradigm description discussed above stated that "the researcher views reality as objective and out there independent of the researcher" (Saidon, 2012, p.99) and is well suited and feasible in the current research. As discussed earlier, the major objective of this study is to know the important factors in venture creation following the leading theories and themes carried out by scholars in their

studies (Athayde, 2009; Cruz et al., 2009; Peterman & Kennedy, 2003; Von Graevenitz et al., 2010). It is assumed that the proposed factors would play a constructive role in a particular subject of interest and can be measured objectively resulting in the utilization of the survey for the purpose.

The second approach used in research is epistemology that is concerned with the study of knowledge and is considered valid knowledge (Collis et al., 2003). In this particular study, only phenomena which are observable and measurable can be widely regarded as empirical knowledge. In this study, with regards to the antecedence of entrepreneurial intentions, the outcomes of exogenous factors and the moderating effect of contextual factors were measured using selected psychometric constructs and quantitative data.

The next assumption is axiological which is concerned with the values of the researcher and it is assumed that the personal values of the researcher should be emotive and therefore outside scientific inquiry. The values under investigation are regarded as objects in the sense that they have already been identified and studied; as such, in this case, they are issues related to entrepreneurial intentions. The researcher is keen to explore the interconnections of the objects and believes that these objects were present before the researcher took an interest in them.

Defining the rhetorical assumption of research philosophy is concerned with the language used in any research. In the current study, the language used was formal based on a set of definitions and an impersonal voice. Furthermore, as discussed, an earlier quantitative approach is applied to test several hypotheses derived from a proposed conceptual

framework. The research project was guided and adhered to concepts, variables and hypotheses which were selected and developed during the first stage of the research.

In wrapping up the research paradigms of the current study, a positivist, empirical, quantitative approach based on three main principles is adopted. Firstly, the researcher assumes that there are predefined laws and principles that lead to the basic understanding of how a system works. Discovering and exploring these laws and foundations is considered the major role of the investigator of this research. Secondly, after distinguishing the essential laws relevant to the particular study, the next step is to report and describe the factors. Finally, data analysis will help to establish and justify that the statistical techniques which are used are anti contemplation and bias.

3.3 Research Design

The current study attempts to investigate the efforts made by the academic society in commencing entrepreneurship education programs in the universities. As such, this study intends to provide a multidisciplinary framework to investigate the role of university education in developing entrepreneurial intentions and actions. Thus, initial literature reviews were gathered from different fields e.g. antecedents of entrepreneurial behavior, a drawing together of the different strands of opinion and research on the role that formal entrepreneurship programs may (or may not) play in developing entrepreneurial intention and action.

In response to the above mentioned objective, different but relevant fields were reviewed to explore a research gap that efficiently and effectively answer research questions and develop an understanding of the investigated domain. Upon extensively reading the

literature, including a debate on whether entrepreneurship can be taught or not (Henry, Hill, & Leitch, 2005a, 2005b), it is found that most of the scholars provide the view that entrepreneurship as an educational program can be a part of the college and university curriculum. (Henry et al., 2005a, 2005b; Kantor, 1988). The importance of such programs is underlined by the policy of government agencies all over the globe. In addition, a series of influential reports by the OECD (Ball, 1989) and the European Commission (2005) argued that entrepreneurship education must be at the core of any nation's educational policy. From this point of view, several researchers empirically investigated the effect of entrepreneurship education (Tkachev and Kolvereid, 1999; Fayolle et al., 2006; McMullan et al., 2002; Peterman and Kennedy, 2003; Souitaris et al. 2007 and Oosterbeek et al. 2010) and found a positive and encouraging role on perceived attractiveness and perceived feasibility of a new venture creation. However, it is unknown whether these entrepreneurial intentions were developed as a result of attending the above-mentioned programs and whether actions were taken or not as the individual in establishing his/her own business, interacted with a rich and various range of factors in the environment. Therefore, in the current research, environmental and contextual factors are proposed as moderating variables which may help to distinguish the relative roles of different individuals, educational and contextual factors in the ensuing success of entrepreneurship policies and programs.

This study pursues a hypothetical-deductive method in obtaining the desired objectives stated in Chapter Two. Hypothetical-deductive follows a common process of research where it starts from the literature review in developing the framework, formulating research questions and objectives, developing hypothesis and building logical derivations from the

results of the study (Sekaran, 2006). The step-by-step research design based on the hypothetical- deductive method is depicted in Figure 3.1.

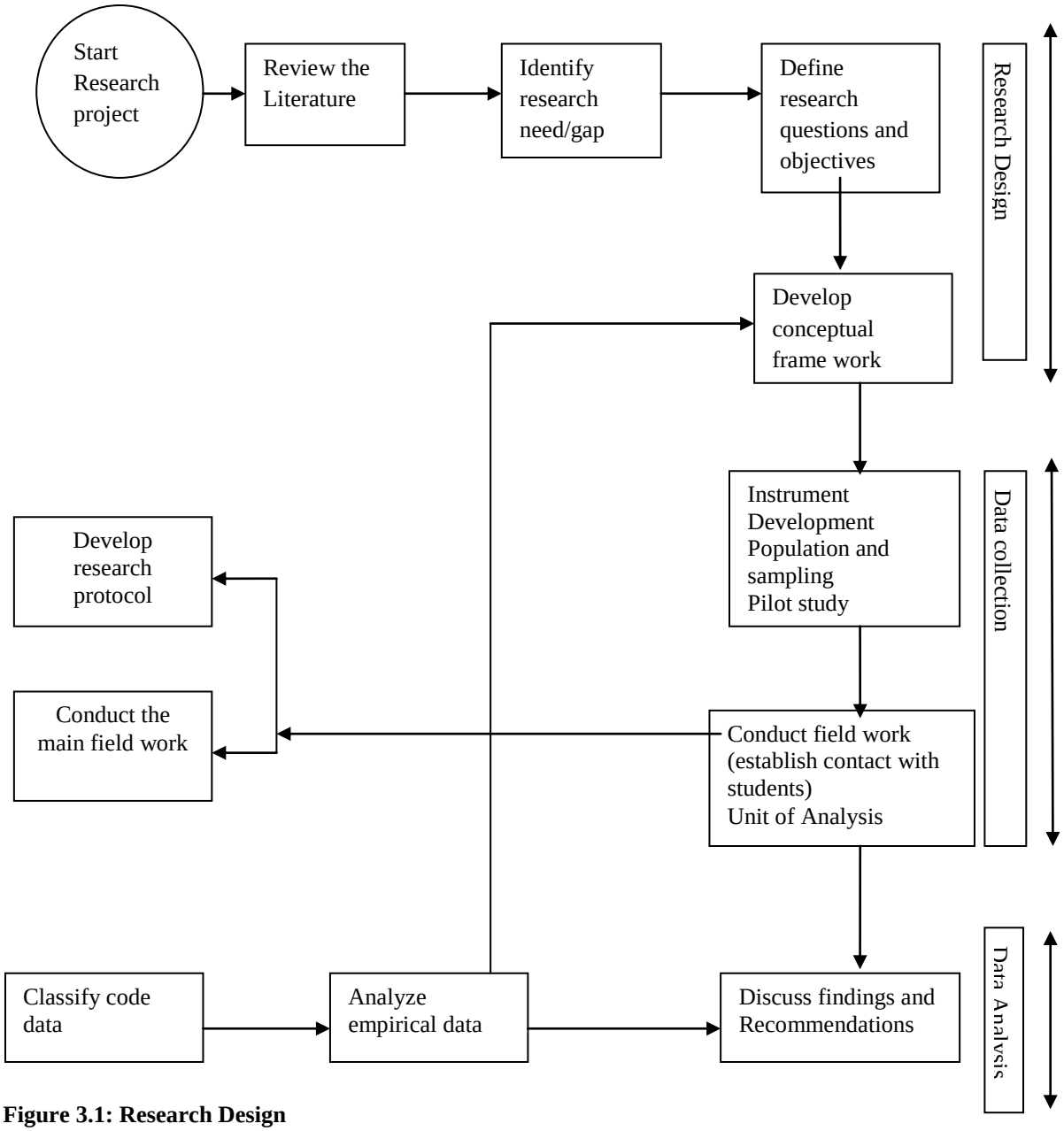


Figure 3.1: Research Design

In line with the above discussion, a positivist philosophical approach and cross-`sectional survey field study is adopted for the current research. The data was collected at a single point in time. In support of the field study survey, Kerlinger (1992) defines it as a non-

experimental scientific inquiry designed to explore the relationship among variables in a real social structure such as communities, institutions and organizations. The field study carries several advantages. Firstly, the field study uses the Likert scale in measuring the attitude of the respondents (Miller & Brewer, 2003) whereby it is supported because of the valid reliability of the scale and it also provides a greater range of answers permitted to the respondents (Oppenheim, 1992). Moreover, field study provides an opportunity to the researcher to collect a considerable amount of information from a comparatively large sample (Kerlinger, 1986). Lastly, it is argued that the information gathered from questionnaires tends to be more accurate, as the particular instrument is developed in line with specific research questions (Dess & Robinson, 1984; Slater, 1995).

3.4 Population and Sample of the Study

The total number of both public and private universities and degree-awarding institutions in Pakistan is 160 (HEC, 2014). These universities offer numerous degrees and programs to undergraduate and postgraduate students. Most of the universities offer entrepreneurship as a course in the business programs. However, entrepreneurship as a degree or program is offered only by some universities in Pakistan.

The sample for this research was drawn from the list of universities which offered entrepreneurial programs at bachelor and master level. The universities were selected based on the criteria that the programs should contain all four modules and components such as: (1) taught component, (2) business planning component (3) interaction with practice component and (4) university support component. Generally, these programs are offered in the Faculty of Business and Administration in the universities. Based on the above criteria, eight well-known universities offering entrepreneurship education programs to

undergraduate and postgraduate students were identified to collect the data. Among these eight well-known universities, two large universities in the biggest metropolitan area of each region were chosen. These include the Institute of Business Administration in Karachi, the Government College University in Lahore and other universities of the same rank.

The data was collected from the population of the university students who are in the last of year of their degree programs such as master of entrepreneurship education and bachelor of entrepreneurship education. This is a convenient sample very often used in entrepreneurship research (Fayolle and Gailly 2005; Kolvereid 1996; Krueger et al. 2000; Tkachev and Kolvereid1999; Veciana et al. 2005). In particular, a recent research found that young university graduates (25–34 years) showed the highest propensity towards starting a firm (Reynolds et al.2002). The total population of entrepreneurial graduates (who were in their final year of study) in these selected universities was around 760. The researcher distributed 60 questionnaires to each of the eight universities totally 480.

In addition, IBA conducted an evening class on entrepreneurship education. Most of the students enrolled in the evening classes are either working or running their own business. These students were requested to attend short interviews and upon acceptance, fourteen explorative natures of interviews were conducted. The aim of these interviews was to collect the explorative information on the major constructs used in this study. The information would indeed help to understand the results retrieved from the data analysis. Moreover, the answers of the graduates would probably explore the relationship among the study variables.

Moreover, as mentioned earlier in this chapter, in order to assess the difference in entrepreneurial intentions among the entrepreneurial graduates and non-entrepreneurial graduates, the current study also invited graduates who are enrolled in other business programs such as MBA and BBA and who attend entrepreneurship as a course. The data for the control group was collected both from the universities which were selected for the main sample of the study and from other public and private universities as well.

3.4.1 Data Collection Procedure

The selected universities were contacted and requested for a permission to personally distribute the questionnaire to the graduates during class. Before going to the selected universities for data collections, the lecturer or professor concerned was contacted through phone or email to know the exact time of class and then the date and time were fixed accordingly. With the mutual consent of the class lecturer/professor, the questionnaires were then distributed during the last fifteen minutes of the class and the students were assisted during the process.

3.5 Research Instrument and Measurement Scale

This is a cross-sectional study in which data was collected at one time using random probability sample technique from university students to test the proposed hypothesis. The data was collected from both entrepreneurial students who attended the entrepreneurship education programs (as the actual sample of the study) and non-entrepreneurial graduates who study entrepreneurship as a single subject in their perspective degrees (as a control group of the study). The survey primarily aims to explore and find out what a selected group of individuals think, feel, or do (Vershuren & Doorewaard, 1999).

3.5.1 Questionnaire Design and Development

The development of the survey instrument is based on the nature of information. Thus, literature in its distinct subject was reviewed and explored using several validated instruments utilized previously. The survey instrument for acquiring information on the proposed variables was developed by incorporating previous validated instruments and was slightly tailored to accommodate the sample of this research. Using previous studies to develop the survey instrument of the study is a common process and it provides several benefits to the researcher. Firstly, the adapted instruments have been validated and confirmed its reliability. Secondly, using the same instrument provides an opportunity to compare the results of this study (Kitchenham & Pfleeger, 2002) and will also possibly open new avenues to help in enhancing the knowledge of the subject under discussion.

When designing the instrument, serious attention was paid particularly to the words used and order of the questions. In addition, the language used significantly qualifies the level of high school comprehension and questions were appropriately organized and conveniently spaced in order to provide assistance to the respondents. Moreover, maximum care was applied to the length of the questionnaire and the number of words used as suggested in the literature, for example, most of the items were limited to 20 words as suggested by (Horst, 1968) and (Oppenheim, 1992) and the overall length of the survey instrument was less than 10 pages (Hoinville & Jowell, 1978; Lorelle Frazer & Lawley, 2000). To avoid respondent fatigue as their interest tends to decrease when replying to the later part of the questionnaire, less important questions (demographic details) were placed in the later part of the survey instrument (Alreck and Settle, 1995). The details of the survey instrument of the current study were further discussed in the following five sections.

Section A of the survey has a total of 47 items (1-47, see Appendix-1). This section encapsulates the entrepreneurial intentions, actions and the antecedence of entrepreneurial intentions based on the theory of planned behaviour.

The survey instrument of this study starts with a section on the attitude toward being an entrepreneurship and it consists of 19 items (1-19, see Appendix-1). This subsection provides information about the attitude of the individuals towards starting their own business. Further on, this section includes the subjective norms for being an entrepreneur and it comprises five items (20-24). The items on representing subjective norms concern the opinions of "reference people" such as family, friends and society on the individual, whether they appreciate or are intimidated by their decision of becoming an entrepreneur. The third subsection of Section A is based on the items on perceived behaviour controls (PBC), and its intention is to gain information on the perceived ability of an individual to perform a particular behaviour such as starting a business. In addition, Section A contains six items (30-35) regarding entrepreneurial intentions. In this section of the study, we attempt to obtain the information and observe the intentions of the samples of the study on whether they have developed intentions which help them in starting their own business in the future. The last section of Section A is entrepreneurial behaviour or action consisting of fourteen items (36-49) and is based on the real actions initiated by entrepreneurial graduates during the entrepreneurial education programs.

Section B of the survey consists of 21 items in total (Appendix-1) and it provides information regarding the overall benefits gained from the entrepreneurship education programs. Section B further consists of three subsections based on the benefits that can be

derived from entrepreneurship education programs. The first subsection of Section B is related to "benefits of entrepreneurship education learning" and comprises of five items (48-52) whereby the researcher is more interested to obtain information on whether the theoretical subjective module helps the graduates in learning and gaining constructive knowledge of entrepreneurship establishment and development. Further on, Section B of the survey instrument is on "Entrepreneurship education inspiration benefits" and it contains six items (53-58). This section is related to the information on the major events conducted during these programs and is on whether these events affect the graduates' entrepreneurial attitude and inspire them to choose entrepreneurship as a career on not. The last section of Section B is based on the "usage of incubation resources benefits" and it consists of eleven items (59-69). In the entrepreneurship education programs, the students are assumed to utilize and benefit from a pool of resources offered in the particular programs. Accessing and using the resources would possibly facilitate them in discussing, developing and evaluating business ideas, resulting in an evolving of potential business ideas and venture creations. Thus, the last section aims to gain the above-mentioned information from the entrepreneurial graduates.

Section C of the survey instrument presents the items on the contextual factors of "perceived entrepreneurial motivators and barriers". The sub section of Section "C" is about "perceived entrepreneurial motivators" and contains seventeen items (70-86). This section intends to obtain the opinions of the graduates on the contextual factors which motivate the entrepreneurial graduates and intensify their entrepreneurial intentions. Further on, the subsection of Section C is on "perceived entrepreneurial barriers" and this comprises twenty-two items (87-108). This section of the survey instrument is to gain

information on the perceived barriers of entrepreneurial graduates residing in their surroundings and which negatively affect their entrepreneurial intentions and actions.

Section D, which is the last in the survey instrument, provides the demographic information of participants, which is information on the participant's personal particulars, education and family background. These include gender, age, ethnicity, programs enrolled, current semester, university, work experience, self-employed experience, parents' educational level, parents' professions and their contact numbers and email addresses. Table 3.3 illustrates the constructs, the number of items used to measure and the sources of the items.

Table 3.3: Total Scale Items Used to Measure Each Construct

Constructs	Number of Items	Source
Attitude toward being an entrepreneur	19 items	*Lars Kolvereid (1996)*
Subjective norm for being an entrepreneur:	5 items	*Lars Kolvereid (1996)*
Perceived behaviour control	5 items	*Lars Kolvereid (1996)*
Entrepreneurial intentions	6 items	*Francisco Liñán Yi-Wen Chen (2009*
Entrepreneurial behavior	14 items	*Alsos and Kolvereid (1999)*
Entrepreneurship learning programs	5 items	*Souitaris, Zerbinati and Al-Laham(2007)*
Entrepreneurship inspiration programs:	6 items	*Souitaris, Zerbinati and Al-Laham(2007)*
Entrepreneurship incubation resources	11 items	*Souitaris, Zerbinati and Al-Laham(2007)*
Perceived entrepreneurial motivators	17 items	
Perceived entrepreneurial barriers	22 items	*Urban, Noris (2013) and Choo and Melvin (2006)*

3.5.2 Pre-Testing of Measures and Instrument

Although the survey instrument is a commonly used mechanism for data collection in social science research, it is subject to several validity issues (e.g. internal consistency and reliability, construct validity, external validity and face validity) and mono method bias (Campbell, 1966). Thus, in order to avoid the above mentioned errors and threats, a series of pre-tests was conducted to remove any ambiguity and unclear words from the questionnaire. Pre-testing of instruments improves and insures the validity and reliability of the survey instrument (Churchill, 1995; Frazer and Lawley, 2000). Furthermore, clear and unambiguous instructions were drafted in order to increase the response rate (Babbie, 1990; and to minimize common method errors (Sanchez, 1992).

In the pre-test process, content validity was conducted using several suggested methods, including examining the literature, whereby the adapted measures were already validated in previous studies, evaluation by a panel of academicians and finally, presenting to a number of nascent entrepreneurs in order to validate the face validity and to ensure that the items included in the questionnaire are understandable and clear to the subject (Cavana et al., 2001). The prime objective of content validity is to ensure that the measures include an adequate and representative set of items that sufficiently tap the concepts (Cavana et al., 2001).

3.5.2.1 Evaluation by Panel of Academics

The evaluation of questionnaire by academicians is done in two different ways. Firstly, those who can be accessed easily and have sufficient knowledge in the field of entrepreneurship development and business creation were requested to attend a meeting.

During the meeting, the items were discussed on all necessary aspects. Several constructive suggestions were provided, including omitting the redundant items and incorporating some additional items in order to get the necessary information required on the constructs. Further, the academicians were requested to provide additional information which is significant to the validity and reliability of the instrument.

3.5.2.2 Evaluation by Panel of Practitioners

Practitioners' opinions are considered an essential means to ensure the face validity of the instrument as they are aware of the common words used in the market which can be easily understood by the general public. The respondents of the current study ***"****University Graduates"* may not know the exact meanings of some technical words used in the items and this would cause a decreasing validity and reliability of the items. Thus, both university alumni who are currently nascent and well-known entrepreneurs in the market were requested to evaluate the face validity and to suggest alternative terms for which they considered as complicating to the respondents. This process also is valid in ensuring the validity and reliability of the questionnaire (Churchill, 1995; Lorelle Frazer & Lawley, 2000). Furthermore, the instructions given in the questionnaire were clear and easy to understand, which increased the probability of response rate (Babbie, 1990) and minimized measurement error (Sanchez, 1992).

3.5.2.3 Items generation

The constructs used in the current research are measured using a variety of validated scales. In total, **108** items were used to measure the constructs of the study.

In the current study, item selection was based on three following criteria. First, item reliability was ensured (adapted from previous studies) by examining the minimum acceptable threshold values (e.g. Cronbach Alpha of 0.60 or greater). Secondly, convergent validity and discriminant validity were also examined from the studies (where reported) to determine if the items predicted measured what it was supposed to measure. Finally, theoretical guidance and judgment were used in making the final selection of items that best met the domain of the specific construct as defined in this research.

3.6 Operationalization of the constructs

The constructs of the current study are developed and operationalized in the guideline of literature review conducted in Chapter Two. Literature review on antecedence of entrepreneurial intention, entrepreneurship education programs and perceived environmental and contextual entrepreneurial motivators and barriers guided how the above mentioned constructs are operationalized in a particular case. Likert scale is used in the operationalization of constructs, which is considered a common approach in the operationalization of a variety of latent constructs (Kent, 2001). In this research, the five-point Likert scale ranging from (5) to a great extent to (1) Not at all were used for the antecedence of entrepreneurial intentions, entrepreneurship education benefits and finally, perceived environmental and contextual entrepreneurial motivators and barriers.

A multi-item construct approach was employed in this research; the multi-item construct approach is given priority as it ensures a comprehensive evaluation and is free of any particular weakness attached to single item measures in measuring any construct (Churchill Jr, 1979; Nunally & Bernstein, 1978; Peter, 1979). A single item measure approach has several flaws and drawbacks, such as it is closely related to other attributes, lacks of

adequate with attributes being measured and it has restricted variance of a scale and unreliable responses (Churchill Jr, 1979). The original items and item scales of each construct are presented in the subsequent section for each particular construct. The items were modified during the pre-testing of measures and the instrument process suggested by the panel of academicians and practitioners; the objective was to provide ease to the respondents of the research study to understand the questions in order to achieve a desirable and accurate response. The survey instrument including modified items were then tested and validated during the pilot study.

3.6.1 Endogenous Variable: Antecedence of Entrepreneurial Intentions

The theory of planned behaviour is used to test the effects of entrepreneurship education on the antecedence of entrepreneurial intentions. Further, TPB also facilitates this study to analyze the moderating role of perceived contextual and environmental entrepreneurial motivators and barriers.

3.6.1.1 Attitude towards being an entrepreneur

Attitude towards behaviour refers to a positive involvement of an individual in the particular behaviour (Ajzen, 1991; Kolvereid, 1996b) and considerably affects entrepreneurial intention. This measure intends to investigate the conviction of an individual towards venture creation. In this study, attitude towards entrepreneurship was developed and used by (Kolvereid, 1996a), which includes the six reasons in favor of being an entrepreneur: autonomy, self-realization, economic opportunity, challenge, authority and participants in the whole process. Two to four items were used as indicators of each dimension and 19 items represent six reasons for being an entrepreneur. The university graduates were asked based on a five-point Likert scale (1 = not at all to 5 = to a large

extent) on the extent to which these factors were important to them in pursuing their professional career. Table 3.4 illustrates the nineteen original items and the measuring scale.

Table 3.4: Attitude towards being an entrepreneur

	Original scale items	Measuring Scale	
		Not at all	To a large extent
1	To what extent will starting a business provide you with independence	1----------2----------3-------4---------5	
2	To what extent will starting a business provide you with decision-making power	1----------2----------3-------4---------5	
3	To what extent will starting a business provide you with a position of authority	1----------2----------3-------4---------5	
4	To what extent will starting a business provide you with an opportunity to be your own boss	1----------2----------3-------4---------5	
5	To what extent will starting a business provide you with an opportunity to know about your abilities	1----------2----------3-------4---------5	
6	To what extent will starting a business provide you with an opportunity to make use of your creativity	1----------2----------3-------4---------5	
7	To what extent will starting a business provide you with an opportunity to carry out your dreams	1----------2----------3-------4---------5	
8	To what extent will starting a business provide you with an opportunity to create something new	1----------2----------3-------4---------5	
9	To what extent will starting a business provide you with an opportunity to take advantage of an economic opportunity	1----------2----------3-------4---------5	
10	To what extent will starting a business provide you with an opportunity to have a large share of your salary based on results	1----------2----------3-------4---------5	
11	To what extent will starting a business provide you with an opportunity to be paid based on your achievements	1----------2----------3-------4---------5	
12	To what extent will starting a business provide you with an opportunity to have a challenging job	1----------2----------3-------4---------5	
13	To what extent will starting a business provide you with an opportunity to have an exciting job	1----------2----------3-------4---------5	
14	To what extent will starting a business provide you with an opportunity to have an	1----------2----------3-------4---------5	

	interesting job	
15	To what extent will starting a business provide you with an opportunity to have a motivating job	1----------2----------3-------4---------5
16	To what extent will starting a business provide you with an opportunity to have power to make decisions	1----------2----------3-------4---------5
17	To what extent will starting a business provide you with an opportunity to have authority in making your own decisions	1----------2----------3-------4---------5
18	To what extent will starting a business provide you with an opportunity to participate in the whole business process	1----------2----------3-------4---------5
19	To what extent will starting a business provide you with an opportunity to follow the work -task from A to Z	1----------2----------3-------4---------5

3.6.1.2 Subjective Norm for being an entrepreneur

Subjective norms in this particular context refers to perceived social pressure from peers, family and society as a whole (Ajzen, 2001; Krueger Jr, Reilly, & Carsrud, 2000). In the current study, subjective norms were measured with the scale developed by Kolivared (1996a) including two self-constructed items based on results achieved from a pilot study and proposed by the panel of practitioners and academicians. A total of five items represent subjective norms and the respondents were asked on a five point Likert scale (1=not at all to 5=to a large extent) about the views and involvement of the society around them when deciding to start their own business. Table 3.5 illustrates the three original items and two self constructed (4 and 5) in order to measure subjective norms.

Table 3.5: Subjective Norms for being an entrepreneur

	Original scale items	Measuring Scale	
		Not at all	To a large extent
1	To what extent it is important to you that my closest family members think that I should start my own business	1----------2----------3-------4---------5	
2	To what extent it is important to you that my closest friends think that I should start my own business	1----------2----------3-------4---------5	
3	To what extent it is important to you that my colleagues and people around me think that I should start my own business	1----------2----------3-------4---------5	
4	To what extent it is important to you that my fellow graduates of the entrepreneurship programs think that I should start my own business	1----------2----------3-------4---------5	
5	To what extent it is important to you that that the local business community leaders think that I should start my own business.	1----------2----------3-------4---------5	

3.6.1.3 Perceived Behaviour Control

Perceived behaviour control refers to one's perception that he or she can take the actions necessary to become an entrepreneur and which would typically incorporate evaluations of skills and intellectual ability as well as ability to overcome setbacks or deal effectively with barriers. The above-mentioned characteristics are well covered and measured in the study conducted by Kolvereid (1996a). Thus, the current study adopted the same instrument used in Kolvereid's (1996a) to measure perceived behaviour control. A total of five items were used and the students pursuing entrepreneurship education programs were asked on a five point Likert scale (from 1 = not at all to 5 = to a large extent) to what extent they are confident in performing the particular tasks mentioned in the survey instrument. Table 3.6 illustrates the five original items and measuring scale.

Table 3.6: Perceived behaviour control

	Original scale items	Measuring Scale	
		Not at all	To a large extent
1	To what extent It would be easy for me to become an entrepreneur	1----------2----------3-------4---------5	
2	To what extent It would be easy for me to start your own business	1----------2----------3-------4---------5	
3	To what extent i believe that the number of events which is outside my control could prevent me from being self-employed is numerous.	1----------2----------3-------4---------5	
4	To what extent you are confident that you have the ability to become self-employed successfully	1----------2----------3-------4---------5	
5	To what extent you are confident that if you start a business the failure chances will be very low	1----------2----------3-------4---------5	

3.6.1.4 Entrepreneurial Intentions

Intentions play a role as a mediator between antecedence of intention and behaviour, even when attitudes are considered as accounting for variations in behaviour (Bagozzi, Baumgartner, & Yi, 1989). In the current study, entrepreneurial intentions were measured with six items adopted from (Liñán & Chen, 2009). Respondents were asked to respond on a five point Likert scale (5 = to a great extent to 1 = not at all) representing a self-predictive measure of intentions; where the entrepreneurial graduates were asked on the basis of their determination to establish their own ventures instead of being employees. Table 3.7 illustrates the six original items and measuring scale.

Table 3.7: Entrepreneurial intentions

	Original scale items	Measuring Scale	
		Not at all	To a large extent
1	I am ready to do anything to be an entrepreneur	1----------2----------3-------4---------5	
2	My professional goal is to become an entrepreneur	1----------2----------3-------4---------5	
3	I will make every effort to start my own business	1----------2----------3-------4---------5	
4	I am determined to create a firm in the future	1----------2----------3-------4---------5	
5	I have very seriously thought of starting a firm	1----------2----------3-------4---------5	
6	I have firm intention to start a business	1----------2----------3-------4---------5	

3.6.1.5 Entrepreneurial behaviour

Several studies in the literature measure entrepreneurial behaviour using samples of nascent entrepreneurs (Alsos & Kolvereid, 1998; Carter, Gartner, & Reynolds, 1996) and new business founders (Kolvereid & Isaksen, 2006). Although measuring entrepreneurial behaviour and action using samples of the university students is challenging, however, (Souitaris, Zerbinati, & Al-Laham, 2007) measured entrepreneurial behaviour on the samples of entrepreneurial graduates (who are involved in some real business activities during their studies) and treated them as nascent entrepreneurs. Souitaris et al. (2007) who presented a list of nineteen entrepreneurial activities argued that graduates who are practically involved in any of those nineteen proposed activities relevant to venture creation had significant probability that an idea would be converted into a new venture. In the current study, entrepreneurial behaviour is measured based on a scale used by Souitaris et al. (2007) which was based on the work by (Alsos & Kolvereid, 1998), whereby the respondents of the survey were asked on nineteen start-up activities. However, in the current study, only 14 activities are included as the remaining five activities were dropped

in the pilot study due to low loadings. The start-up activities considered in the evolution process falls into three categories: business planning activities, financing of new firm activities and interaction with external environment activities.

At first, the university graduates were asked this question, "Are you involved in evaluating a new business idea?" answer yes to the question, they were further asked, "Are you trying to start your own business?" and finally, the students were asked on a five point Likert scale (from 1 = not at all to 5 = to a large extent) on a list of 14 activities associated with starting a new business to measure the extent of their involvement and commitment in starting their own business. Table 3.8 illustrates the fourteen original items and measuring scale.

Table 3.8: Entrepreneurial Behaviour

	Original scale items	**Measuring Scale**	
		Not at all	**To a large extent**
	Business Planning		
1	To what extent you are involved in preparing business plan	1----------2----------3-------4---------5	
2	To what extent you organized a start-up team	1----------2----------3-------4---------5	
3	To what extent you acquired the facilities/equipment	1----------2----------3-------4---------5	
4	To what extent you developed a product/service	1----------2----------3-------4---------5	
5	To what extent you conducted a market research	1----------2----------3-------4---------5	
6	To what extent you devoted full time to the business	1----------2----------3-------4---------5	
	Financing the new firm		
7	To what extent you have saved money to invest starting your own business	1----------2----------3-------4---------5	
8	To what extent you applied for a bank funding	1----------2----------3-------4---------5	
9	To what extent you received bank funding	1----------2----------3-------4---------5	
10	To what extent you applied for government funding	1----------2----------3-------4---------5	

	Interaction with external environment	
11	To what extent you have applied for license patent, etc.,	1----------2----------3-------4---------5
12	To what extent have you hired employees	1----------2----------3-------4---------5
13	To what extent you have carried out sales promotion activities	1----------2----------3-------4---------5
14	To what extent you have business registration	1----------2----------3-------4---------5

3.6.2 Exogenous variables

In the current study, entrepreneurship education activities are treated and accounted as exogenous factors. In most universities in Pakistan, four major activities such as teaching component, business planning component, interaction with practice component and university support component are carried out under the umbrella of entrepreneurship education programs, both at undergraduate and postgraduate level. In the perspective of measuring the effect of these modules, three types of benefits (entrepreneurship education learning, entrepreneurship education inspiration and utilization of incubation resources) proposed by (Souitaris et al., 2007) are expected to be gained at the end of the program. In the following section, the above-mentioned entrepreneurial benefits are presented alongside the items used to measure the constructs on entrepreneurship education program benefits.

3.6.2.1 Entrepreneurship Education Learning Benefits

Learning refers to the information and knowledge about entrepreneurship that a student gains during a program. According to (Johannisson, 1991), learning from entrepreneurship education programs can be conceptually classified into five levels such as a. values, motivation b. abilities, skills c. social skills, networks d. experience and e. intuition. Based on the above-mentioned conceptual classification of learning from entrepreneurship programs, (Souitaris et al., 2007) developed a perceptual scale to measure entrepreneurship

education learning benefits. The scale developed by (Souitaris et al., 2007) is adopted to measure entrepreneurship education learning benefits. The entrepreneurial graduates were asked to answer on a 5-point Likert scale (1 = not at all to 5 = to a large extent) to measure the core benefits of entrepreneurship education programs. In total, five items were used to measure the construct. Table 3.9 illustrates the five original items and measuring scale.

Table 3.9: Entrepreneurship learning programs

	Original scale items	Measuring Scale	
		Not at all	To a large extent
1	Increase your understanding of the attitudes, values and motivation of entrepreneurs	1----------2----------3-------4---------5	
2	Increase your understanding of the actions someone has to take in order to start a business	1----------2----------3-------4---------5	
3	Enhance your practical management skills in order to start a business	1----------2----------3-------4---------5	
4	Enhance your ability to develop networks	1----------2----------3-------4---------5	
5	Enhance your ability to identify an opportunity	1----------2----------3-------4---------5	

3.6.2.2 Entrepreneurship Education Inspiration Benefits

Inspiration in general refers to the "strain of some idea that stimulates creation of some feeling of impulse" (Oxford English Dictionary). In addition, several scholars define inspiration in different contexts. For e.g., inspiration entails emotions of extracted elevation, awe and admiration (Branzei & Zietsma, 2003) and inspiration is further defined as an encompassing motivation directed towards a new 'target' e.g. a behaviour, a personal goal, or a creative product (Isabella, 1990). Thus, while operationalizing the construct of inspiration, previous literature was carefully reviewed to find an appropriate measure which covers all the important elements discussed above. A measure used by Souitaris et al., 2007 was adopted to measure the construct "entrepreneurship education inspiration benefits". The students were asked on any particular event or input during these programs that change

their "mind or heart". The students were presented with a list of potential program-related triggers with the aim of enabling them to relate trigger examples with the concept. The students were asked on a categorical scale (Yes/No) to tick events in the list which applied to them. The categorical construct was accomplished by a measure of degree on a 5-point Likert scale (1 = not at all to 5 = to a large extent): "To what extent did such views make you seriously consider embarking on an entrepreneurial career?" In total, six items were used to measure the particular construct. Table 3.10 illustrates the six original items and measuring scale.

Table 3.10: Entrepreneurship inspiration programs

	Original scale items	**Measuring Scale**	
		Not at all	**To a large extent**
1	The views of a professor	1----------2----------3-------4---------5	
2	The views of an external speaker	1----------2----------3-------4---------5	
3	The views of a visiting entrepreneur	1----------2----------3-------4---------5	
4	The views of classmate(s),	1----------2----------3-------4---------5	
5	The preparation for a business plan competition	1----------2----------3-------4---------5	
6	The views of the judges of the competition	1----------2----------3-------4---------5	

3.6.2.3 Entrepreneurship Education Incubation Resources

The entrepreneurial graduates during the programs access and utilize resources which directly and indirectly help them in developing business ideas. These resources can be accessed from any component among the four major components of the entrepreneurship education programs. Thus, while operationalizing the construct and utilizing the program-resources, the literature was carefully reviewed to find measures to tap the major aspects of entrepreneurial resources used during these programs. Consistent to that, an eleven items measure developed by Souitaris et al. (2007) was adopted and modified in the current study. Souitaris et al. (2007) compiled an 11-items list of incubation resources by visiting

the websites of various entrepreneurship programs and then discussing and validating it with colleagues in the field. The rationale behind the use of the above mentioned scale is that this scale is developed particularly on the structure of entrepreneurship education programs and would be considered valid in the context of the current study. For respondents' understanding of the current study, they were asked about the usage and utilization employing the five-point Likert scale (ranging from 1 = not at all to 5- more than ten times) on eleven resources offered during the entrepreneurship education programs. Table 3.11 illustrates the eleven original items and measuring scale.

Table 3.11: Entrepreneurship education incubation resources

	Original scale items	**Measuring Scale**	
		Not at all	**More than ten times**
1	A pool of entrepreneurial-minded classmates for building a team	1----------2----------3-------4---------5	
2	A pool of university technology	1----------2----------3-------4---------5	
3	Advice from faculty	1----------2----------3-------4---------5	
4	Advice from classmates	1----------2----------3-------4---------5	
5	Advice from tech-transfer officers	1----------2----------3-------4---------5	
6	Research resources (library/web)	1----------2----------3-------4---------5	
7	Networking events	1----------2----------3-------4---------5	
8	Physical space for meetings	1----------2----------3-------4---------5	
9	Business plan competitions (testing ground for the idea)	1----------2----------3-------4---------5	
10	Seed funding from university	1----------2----------3-------4---------5	
11	Referrals to investors	1----------2----------3-------4---------5	

3.6.3 Moderating variables: perceived entrepreneurial motivators and barriers

This research includes the moderating role of perceived contextual and environmental entrepreneurial motivators and barriers that are combined with entrepreneurial education to influence entrepreneurial intentions and behaviour.

3.6.3.1 Perceived Entrepreneurial Motivators

In the current study, perceived entrepreneurial motivator is measured by three manifest constructs, e.g. entrepreneurial extrinsic rewards, entrepreneurial intrinsic rewards and perceived support factors. Among these three scales, two (entrepreneurial extrinsic and intrinsic rewards) were adopted from (Choo & Wong, 2006) and perceived support factors were adopted from a study conducted by (Lüthje & Franke, 2003). In total, seventeen items represent perceived entrepreneurial motivator dimensions whereas three items represent the subscale of entrepreneurial extrinsic rewards; eight items represent entrepreneurial intrinsic rewards and six items represent perceived entrepreneurial supports. The university graduates were asked on a five-point Likert scale (5 = to a great extent to 1 = not at all) to what extent the following motivators drive their intentions to start their own business. Table 3.12 illustrates the seventeen original items and measuring scale.

Table 3.12: Perceived entrepreneurial motivators

	Original scale items	Measuring Scale	
		Not at all	To a large extent
	Extrinsic rewards		
1	To change my self	1----------2----------3-------4---------5	
2	To realize my dream	1----------2----------3-------4---------5	
3	To take advantage of my creative talents	1----------2----------3-------4---------5	
	Perceived entrepreneurial supports		
4	Entrepreneurs have a positive image in our society	1----------2----------3-------4---------5	
5	Consultant and service support for new companies is available	1----------2----------3-------4---------5	
6	The creative atmosphere in my university inspires to develop ideas for new businesses	1----------2----------3-------4---------5	
7	The entrepreneurial development institute in Pakistan motivates to start some one's own business	1----------2----------3-------4---------5	
8	The unnerving markets prompt to start a business	1----------2----------3-------4---------5	

9	University and industry collaboration inspire you to develop ideas for new businesses	1----------2----------3-------4---------5
	Entrepreneurial intrinsic rewards	
10	To receive a salary based on merit	1----------2----------3-------4---------5
11	To provide a comfortable retirement	1----------2----------3-------4---------5
12	To work at a location of my choice	1----------2----------3-------4---------5
13	The need for a job	1----------2----------3-------4---------5
14	To invest my personal saving	1----------2----------3-------4---------5
15	To increase my status/prestige	1----------2----------3-------4---------5
16	To follow the example of a person i admire	1----------2----------3-------4---------5
17	To maintain a family tradition	1----------2----------3-------4---------5

3.6.3.2 Perceived Entrepreneurial Barriers

Perceived entrepreneurial barriers refer to the perceived barriers which discourage an individual and adversely affect his/her entrepreneurial intentions. In fact, it prevents one from executing a potential business idea into action and venture creation (Choo & Wong, 2006). In the current study, six subscales, legal and regulatory environment, hard reality, lack of skills or resources, complaint cost, lack of support and lack of capital were used to measure perceived entrepreneurial barriers. Among these six subscales, legal and regulatory environment is adopted from a study conducted by Urban and Boris (2013) and the other five subscales were measured using a scale developed by Choo and Melvin (2006). This scale has been widely used in early entrepreneurial studies to access the effect of barriers on the entrepreneurial intentions and in emerging markets (Choo & Wong, 2006; Urban, 2013). In total, twenty-one items were used to measure perceived entrepreneurial barriers dimension. The respondents were asked, using a five-point Likert scale (5 = to a great extent to 1 = not at all) to what extent the following perceived barriers adversely affect their

entrepreneurial intentions and restricts them from creating their own business. Table 3.13 illustrates the twenty-one original items and measuring scale.

Table 3.13: Perceived entrepreneurial Barriers

	Original scale items	Measuring Scale	
		Not at all	To a large extent
	Legal and regulatory environment		
1	Government organizations do not assist individuals starting their own businesses	1----------2---------3-------4---------5	
2	Government supports government contracts for new and small businesses	1----------2---------3-------4---------5	
3	Local and national government have no special support for individuals starting a new business	1----------2---------3-------4---------5	
4	Government does not sponsor organizations that help new businesses develop	1----------2---------3-------4---------5	
	Hard reality		
1	Bad economic factors	1----------2---------3-------4---------5	
2	Risk greater than initially expected	1----------2---------3-------4---------5	
3	The uncertainty of failure	1----------2---------3-------4---------5	
	Lack of skills or resources		
1	Lack of marketing skills	1----------2---------3-------4---------5	
2	Lack of managerial or financial expertise	1----------2---------3-------4---------5	
3	Lack of info about business start-ups	1----------2---------3-------4---------5	
4	Finding the right partner	1----------2---------3-------4---------5	
	Complaint cost		
1	Compliance with government regulations	1----------2---------3-------4---------5	
2	High taxes and fees	1----------2---------3-------4---------5	
3	Finding suitable labor	1----------2---------3-------4---------5	
4	Fear of failure	1----------2---------3-------4---------5	
	Lack of support		
1	Convincing others it is a good idea	1----------2---------3-------4---------5	
2	No one wants to help me	1----------2---------3-------4---------5	
3	Lack of suitable premises	1----------2---------3-------4---------5	
	Lack of capital		
1	Difficulty in obtaining finance	1----------2---------3-------4---------5	
2	Lack of own savings or assets	1----------2---------3-------4---------5	
3	Lack of support from family or friend	1----------2---------3-------4---------5	

3.7 Demographic Variables

Demographic variables of interests in the current study include gender, age, ethnicity, educational level and years of working experience. The demographic information was either used to determine if significant individual demographic differences existed among the respondents. Several early studies examined the relationship between demographic factors e.g. ethnicity (Bates, 2000; Fairlie, 2004), gender (Farrington, Venter, & Louw, 2012) and self-employment. Further, according to (Kristiansen & Indarti, 2004), several studies supported the argument that demographic variables such as age, gender and individual background (education and employment experience) influenced entrepreneurial intentions. Thus, in the current study, the important demographic characteristic variables were included and were assessed in the following way. The respondents were asked about their gender (0 = male, 1 = female) and the degree which they are enrolled in (0, undergraduate, 1=postgraduate). The respondents were also asked about their ethnicity; major ethnic groups were classified by assigning numerical numbers.

3.8 Control Variables

Control variables in the current study were the father's profession, the parent's educational level, family business and self-entrepreneurial experience. Many early studies indicated a positive relation between family background and venture creation (Hout & Rosen, 1999; Oyelere & Belton, 2013; Skriabikova, Dohmen, & Kriechel, 2014). The control variables were assessed in the following way: family background in entrepreneurship was assessed by asking the employment status of the previous working lives of the respondent's father and mother. The three alternatives were employee, retired and self-employed, self-employed and unemployed. The respondents who reported that their parents were self-

employed during most of their working life were classified as having a family background in entrepreneurship. Respondents were asked whether they had any self-employed experience (0 = no, 1 = yes); those who had self-employed experience were further asked about their personal views and experience as a self-employed (0 = negative, 1 = positive).

3.9 Pilot Study

A pilot study for the current study was conducted with the aim of avoiding considerable problems attached to survey research, particularly when measuring social psychological phenomena. Pilot study helps researchers on different important aspects of the survey questionnaire; these include reliability of the survey questionnaire, validating consistency of the questions and an understanding of the responding nature of respondents to the questionnaire. Further, the pilot study identifies and diagnoses the unexplored methodological issues which are overlooked during the reading of literature review and it saves numerous studies from disaster and failure using the respondent's suggestion on the diverse aspects of the survey questionnaire. These issues include identifying and changing confusing, or offensive wordings, questions and techniques (Cooper & Schindler, 2003).

The pilot study was conducted in the month of November 2013 and 60 questionnaires were distributed to entrepreneurial postgraduates during their class in IBA, University Karachi, Pakistan. The respondents were briefed about the objectives of the research and they were familiar with the idea and objective of entrepreneurship education and venture creation.

3.9.1 Discussion of Pilot Study Results

The participants of the pilot study suggested some amendments to clarify and strengthen the survey questionnaire. The wordings of some items, particularly those representing attitude towards entrepreneurship were complicated and lengthy, and which required the participants to spend more time and effort to understand the exact meaning of the questions. Further, participants also commented and made suggestions to simplify and clarify the instructions given for each group of questions. Most importantly, the participants suggested a scale be provided on each page of the questionnaire and the numbers which represent the degree of the scale such as (5 = to a great extent and 1 = not at all) be replaced with wordings which help the participants to quickly respond to each item while looking at the degree of the scale present on each page of the questionnaire.

The reliability of the survey instrument for the current study was assessed on the loading of the items on their perspective constructs. Assessing the quality of any measure, a researcher should refer to the Crobach alpha coefficient values which help scholars to measure and confirm the reliability of the items. Generally, the acceptance level of the Crobach alpha coefficient is 0.60 to 0.70 (Hair et al. 1998). The items that show redundancy and low loading on their perspective constructs are removed from the questionnaire. The items which are removed include three items from the sub-construct economic opportunity (EO-9, 10 and 11), one item from attitude challenge AC-4 and two items from participation in the whole process (PWP-1, 2). Further, some items represent entrepreneurial behavior, e.g. business planning (BP-7), financing the new firm (FNF-5-6) and interaction with external environment (IEE-5-6). Once all the required amendments were confirmed and the

questionnaire modified and refined accordingly, then the data collection process was carried out. The schedule of pilot study and main study is depicted in Table 3.14.

Table 3.14: Time Schedule for the Research Study

Study Phase	Activity	Period
Pilot Study	Send the survey instrument to participants	September and October 2013
	Data coding, entry and cleaning and data analysis	
	Write pilot study results	
Main Study	Contact universities, visit universities and distribute instruments into the classes	January, February and march 2014
	Data coding, entry and cleaning	April, May, June and July 2014
	Data analysis	
	Write main study results and conclusions	August, September, October and November 2014
	Thesis submission	

3.10 Summary of Chapter

This chapter presents the procedure carried out and justifies the need to employ a positivist paradigm in collecting answers to the research questions with the aim of testing the hypotheses in the model. The chapter also provides a detailed description of instrument development and operationalization of the constructs. In addition, the research methodology includes administrating the instruments and the pilot study. Chapter 4 will provide the data analyses and results.

CHAPTER 4
DATA ANALYSIS AND RESULTS

4.1 Introduction

In order to pursue the prime objectives of the study, this chapter investigates and explains the relationship of independent variables with dependent variables and presents the empirical results of the research hypothesis. The pervious chapter provides significant information on the research methodology and the methods adopted to carry out this research where a quantitative approach was considered more appropriate in light of research questions and objectives. The data was collected using a survey questionnaire and analyzed using different applicable statistical techniques and tools such as a statistical package for social science (SPSS) version 22.0 and structural educational modelling (SEM) on AMOS (version 18.0) to achieve the maximum accuracy and desired results. This chapter consists of ten main sections. It starts with an introduction and an overview of the data analysis process. The third section of this chapter provides a preliminary analysis of the data. The next section of the chapter describes the procedures used to filter the data. The section provides an evaluation of the response rate. Section five provides the demographic information of the respondents. The results of the measurement models (CFA) were used to assess the uni-dimensionality, reliability and validity of the constructs and the common method bias test is presented in Section six. Section seven reports the results of the structural model to test the hypotheses developed in Chapter Three. The results of the hypotheses testing are reported in Section eight and summarized in Section nine. Finally, a short chapter summary concludes this chapter in Section ten.

4.2 Data Analysis – An Overview

The data analysis process starts with preparation of the data in terms of coding, inserting and examining the accuracy and normality of data obtained from the respondents of the study. The current study employed the SPSS software version 22.0, which is an extensively used statistical toll, particularly in the social science to analyze the data (Zikmund & Babin, 2006). The data analysis processes were carried out in two major phases. The first phase was concerned with data screening .i.e. data coding, removing outliers, assessing normality of the data, and computing the frequencies, means, standard deviation, non-response bias and demographics of the respondents.

In the second phase, the Structural Equation Modelling (SEM) was used to test and develop the measurement model, structural model and hypothesis. SEM is used as a common statistical tool applied in academic research (Anderson and Gerbing, 1988; Bollen, 1989; Kline, 2005; Hair et al., 1998). It is a methodology widely used in behavioural and social science research and claims to be very helpful and also provides constructive results, particularly when most of the constructs are unobservable (Sharma, 1995). In addition, the dominancy of SEM in elaborating multivariate data analysis can be witnessed in the literature (Hershberger, 2003). SEM provides the opportunity to assess the reliability and validity of the construct individually through uni-dimensionality. Apart from investigating the reliability of the data, SEM is useful in testing the overall model fit and individual parameter estimate tests concurrently (Hair, Anderson, Tatham, & Black, 1998). SEM has an attribute which allows a complete investigation of the factors used in the study simultaneously, including the investigation of multiple dependent variables (Byrne, 2001).

Using SEM, researchers are provided with two major alternatives in terms of statistical tools. Some of the software is based on covariance such as AMOS, LISREL and EQS and some are variance-based software such as PLS-Graph and Smart PLS (Chin and Newsted, 1999). The selection of software is relevant to the nature of the research itself. For e.g., covariance-based SEM approach is more preferable in case of theory testing and development. Conversely, variance-based SEM is more appreciated when research involves causal predictive analysis, particularly when research is high complexity endorsed and low theoretical information (Barclay, Higgins, and Thompson, 1995).

In light of the above explanations, this research employed covariance-based Structural Equation Modelling (SEM) software and analysis of the moment structure (AMOS). The prime argument of the current research is more on testing the impact of exogenous factors (entrepreneurship education) using a well-validated theory, i.e. the theory of planned behaviour (TPB) with the addition of some moderating factors and carrying well-validated measurements, which are significantly supported by the theory.

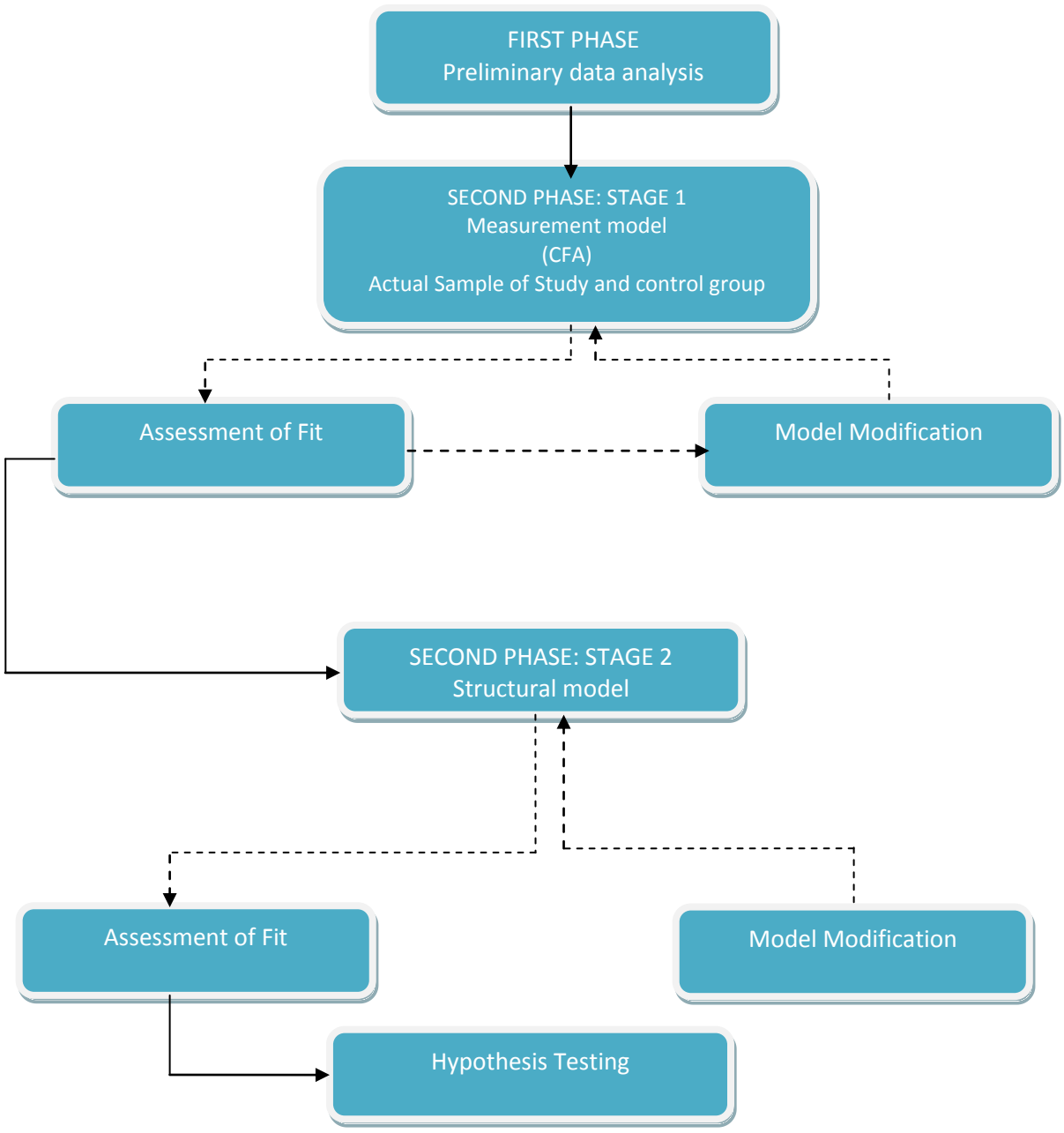


Figure 4.1: Summary of Data Analysis Procedures

Figure 4.1 demonstrates the data analysis procedures applied in this research. The data analysis process is carried out in two different phases. Phase one is named the preliminary data analysis where the focus is more on the procedure of data screening to ensure that the data is properly coded, entered and free of errors and meets the normality assumptions. The

second phase is based on the application of structural equation modelling since the two-stage approach of SEM is significantly used in the recent literature (Anderson and Gerbing, 1988; Gerbing and Hamilton, 1996; Kaplan, 2000).

The first phase of the data analysis was to examine the measurement model in terms of assessing the uni-dimensionality of each latent variable, model re-specification (where required) and finally, to test the reliability and validity of measurement properties, whereas the second phase entailed computing the model fit indices of the proposed structural model. Once a good model fit is achieved, the data analysis process will be continued with the testing of the hypothesized relationship between independent and dependent variables of the study.

While applying the SEM technique, serious attention should be given to ensure that the data meets the number of assumptions, for instance, the normality of the data and sufficient sample size.

4.2.1 SEM Assumptions

The normality assumptions are given great importance during the data analysis since non normality will provoke ill feelings and question the validity of the underlying research which would also result in contributing to other violations of assumptions (Sharma, 1995). Thus, initially, normality of the data included missing data, outliers and assessment of multivariate assumptions which were carried out and discussed in the following section.

A primary sample size when using SEM is considered adequate. Since SEM estimation is based on covariance and correlations, therefore, a small sample size would challenge the stability of the estimation (Kline, 2005; Tabachnick and Fidell, 2001). In addition, a small sample size is linked to several complications and statistical issues; these include less power to identify significant path coefficients and would most probably produce instability (sample error) in the covariance matrix. Consequently, this produces inadmissible results and insignificant goodness of fit indices (Quintana and Maxwell, 1999).

SEM probably requires 100 observations as minimum sample size in order to ensure an appropriate use of maximum likelihood estimation (Hair et al., 1998). Several other researchers argued that SEM could only be applied when the sample size is 200 or greater (Boomsma, 1983; Boomsma and Hoogland, 2001). Another criteria regarding the sample size when using SEM is based on the complexity of the model. For example, Bollen (1989) suggested a ratio of 3 to 5 participants for every parameter estimated in the model; at the same time, Bentler (1995) argued that SEM would generate stable parameter estimates when a researcher acquires at least a ratio of 5 participants per estimates in the estimated model. Since the literature does not provide a specific number of sample size when using SEM to test the model and hypothesis of the study, the acquired sample of 348 valid observations in this study is considered large enough to establish stable estimates (Boomsma and Hoogland, 2001) and therefore, it is more appropriate using the SEM to investigate the relationship between independent and dependent variables.

4.2.2 Maximum Likelihood Estimation (ML)

Maximum likelihood (ML) estimation is considered the most frequently used method in the research to obtain the parameter estimates (Bollen, 1989) since using this approach for the estimation provides several benefits to the research, including the ability to overcome the complication of more complex models and is generally robust to non-normality (Bollen, 1989; Brown, 2006). Therefore, the same method (ML) is carried out to obtain parameter estimates.

4.2.3 Goodness-of-fit Assessment

The goodness-of-fit of a statistical model generally provides the explanation on how good it fits into a set of observations (referee). Although literature provides several parameters and goodness-of-indices to examine the model fit, the most frequently used are four to six fit indices to assess how well the models fit the data structure (Medsker, Williams, and Holahan, 1994). Wheaton (1987) pointed out the significance of using multiple model fit indices in assessing the model fit. Similarly, Hair et al. (1998) recommended using at least three fit indices when examining model fit indices; the first one is “absolute fit indices” which includes chi-square (x2), goodness-of-fit (GFI) and root mean square error (RMSEA) and the second which is recommended is goodness-of-fit indices which is “incremental fit indices” that includes comparative fit index (CFI) and normed fit index (NFI) and lastly, the third one is “parsimonious fit indices” which is a measured normed chi-square (X2/df). Table 4.1 provides the summary of the goodness-of-fit indices.

Table 4.1: Summary of Goodness-of-Fit-Indices

Goodness-of-Fit Indices	Acceptable Value	Comments
Absolute fit indices: Chi-square ($\chi 2$)	$p > 0.05$ (Byrne 2001; Kline	Indicates exact fit of the model. A non-significant p value indicates an adequate representation of the data. This measure is sensitive to a large sample size.
Goodness-of-Fit (GFI)	GFI $\geq$ 0.90 (Hair et al., 1998; Kline, 2005)	Value close to 0 indicates a poor fit, while value close to 1 indicates a perfect fit. GFI indicates the amount of covariance between the latent variables in the model.
Root mean square error of approximation (RMSEA	RMSEA $\leq$ 0.08 (Browne and Cudeck, 1993; Kline, 2005	Values of less than 0.05 are generally considered a 'good' fit. Values between 0.05 and 0.08 are considered an 'adequate' fit. A value up to .10 is considered acceptable and represents the lower bound of fit
Incremental fit indices: Comparative fit index (CFI)	CFI $\geq$ 0.90 (Bentler, 1990; Kline, 2005)	Compares the hypothesized model against a null model.
Normed fit index (NFI)	NFI $\geq$ 0.90 (Kline 2005)	Value close to 0 indicates a poor fit, while value close to 1 indicates a perfect fit.
Parsimonious fit indices: Normed chi-square (χ/df)	$1.0 \leq \chi /df \leq 5.0$ (Cunningham, 2008b; Kline, 2005)	Lower limit is 1.0, upper limit is 3.0 or as high as 5.0.

4.2.4 Reliability

Reliability is concerned with credibility of data. It is defined as "the degree to which measures are free from random error and therefore produce rational and steady results" (Zikmund, 2003, p.330). In addition, reliability authenticates procedures and the ability to generate the same results. Reliability aims to achieve two fold objectives relevant to the data. Firstly, "accuracy of measurement" and secondly, "minimizing the errors and biases

in research" (Yin, 2014). This research employed three widely-used methods, namely, Cronbach's alpha, construct reliability (CR), and average variance extracted (AVE) to assess the reliability of the data.

Among them, Cronbach's alpha is widely known and the most common method used to assess the reliability of the constructs (Nunnally, 1978; Sekaran, 2003). Cronbach's alpha appeared to be the first considered method in examining the reliability of a measurement scale (Churchill, 1979; Nunnally, 1978). Different threshold values in examining the reliability of construct have been suggested in the literature, depending on the nature of constructs. For instance, Cronbach's alpha value of 0.60 for a new scale is considered acceptable (Nunnally and Bernstein, 1994). However, alpha value for well- established measures is expected to exceed 0.70 (Nunnally, 1978). At the same time, Carmines and Zeller (1979) recommended an alpha value of 0.80 for assessing internal consistency of constructs. Despite several suggested thresholds on the acceptance level of alpha value, the common practices observed are equal to or greater than 0.70 to validate the internal consistency of the measure. This study therefore employs a 0.70 minimum acceptance level to indicate the internal consistency of the constructs (De Vaus, 2002).

In this study, internal consistency was further assessed using the confirmatory factor analysis (CFA). Confirmatory factor analysis is a "technique usually employed to confirm a prior hypotheses about the relationship between a set of measurement items and their respective factors" (Netemeyer et al., 2003, p.148). Conducting confirmatory factory analysis which endorses the reliability of the measures used in the study and validates the consistency of the individual items in their measurements is important (Hair et al., 1998).

Generally, confirmatory factor analysis is used for uni-dimensionality of a scale for two reasons. Firstly, the estimation of coefficient alpha is considered appropriate for a uni-dimensionality set of items (Cortina, 1993; Clark & Watson, 1995). Secondly, as the covariance structural model uses a calculation of composite scores procedure, it is therefore considered more appropriate when individual items are uni-dimensional (Floyd and Widaman, 1995; Neuberg et al., 1997). It is also used to test whether the current data collected from the respondents validate the pre-specified relationship on the basis of theory (Hair et al., 2006).

The two suggested methods by Fornell and Larcker (1981) which are construct reliability (CR) and average variance extracted (AVE) were adopted to assess the reliability of the constructs of the study. The acceptance value which is equal to or greater than 0.60 is recommended for construct reliability (CR) whereas the acceptance value equal to or greater than 0.50 is recommended for average variance extracted (AVE) (Bagozzi and Yi, 1988).

4.2.5 Validity

Validity is defined as "the ability of a scale to measure what is intended to be measured" (Zikmund, 2003, p.331). The validity of the construct is one of the significant conditions for further theory testing and development (Carmines and Zeller, 1979; Steenkamp and Trijp, 1991). Therefore, a confirmatory factor analysis was carried out to ensure that the indicators empirically captured the theoretical meaning of a construct (Bagozzi et al., 1991; Steenkamp and Trijp, 1991). The estimation of coefficient alpha is considered appropriate for a uni-dimensionality set of items (Cortina, 1993; Clark and Watson, 1995). Secondly, as

the covariance structural model uses a calculation of composite scores procedure, it is therefore considered more appropriate when individual items are uni-dimensional (Floyd and Widaman, 1995; Neuberg et al., 1997).

Generally, construct validity carries several sub dimensions, such as uni-dimensionality, reliability, content validity, nomological validity, convergent validity and discriminant validity (Hair, et al., 2006; Garver and Mentzer, 1999; O'Leary-Kelly and Vokurka, 1998). Nomological validity refers to the ability to meet with other standard measures of the same construct (Zikmund, 2003). Nomoligical validity and convergent validity carry the same meaning and nomological validity becomes less important once we achieve a high value for convergent validity. Therefore, an assessment of convergent validity confirms the assessment of nomological validity (Zikmund, 2003). Four types of validity suggested by Netemeyer et al. (2003) and Morgan et al. (2004) for assessment of validity of construct have been used in this study, namely, content validity, face validity, convergent validity, and finally, discriminant validity.

Content validity is the process of assessing the extent to which the content of scale measures a construct of the study (Malhotra, Agarwal, and Peterson, 1996). This process was carefully carried out during the development of the questionnaire. For example, at the very early stage, only theoretically significant and valid measures in the literature were adopted in the current study. Further and careful intentions were given to the views of academicians and practitioners on the wordings or items in the questionnaire. More importantly, the results from the pilot study, particularly relevant to the content validity of the instrument were adequately incorporated. The details of the process are explained in

Chapter 4. However, realizing the importance of construct validity in the survey study and its profound impact on the results of the study, other validity assessments such as construct and criterion were applied to further validate the constructs in this research.

Construct validity is concerned with what the instrument is actually measuring (Churchill, 1995). In other words, construct validity is the extent to which a set of measured items actually reflects the latent construct those items are designed to measure (Hair et al., 1998). Construct validity is examined by analysing both convergent and discriminant validity. According to Sekaran (2003), convergent validity examines whether the measures of the same construct correlate highly, whereas discriminant validity determines whether the measures of a construct do not correlate highly with other constructs.

In this research, convergent and discriminant validity were assessed by conducting confirmatory factor analysis (CFA). To establish convergent validity, at a minimum, all factor loadings should be statistically significant and standardized loading estimate should be 0.50 or higher (Hair et al., 1998). In addition, average variance extracted (AVE) is also used as an indicator to support convergent validity (Fornell and Larcker, 1981). On the other hand, discriminant validity is established when the estimated correlations between the factors do not exceed 0.85 (Kline, 2005). Finally, construct validity is enhanced by assuring that the model goodness-of-fit results obtained from CFA fit the data adequately.

4.3 Preliminary Data Analysis

In this section, fundamental procedure was carried out, when looking briefly at some standard techniques which are critical before performing primary statistical analysis. It is considered important to inspect the collected statistics carefully to make sure that the data is feasible and appropriate to test both the measurement and structure model.

4.3.1 Data Cleaning and Coding

After completing the data collection process, the data was examined to ensure the completeness of the data. The examining process involved inspecting the answered questionnaires for elimination, legibility and consistency in classification (Zikmund, 1994). The transparency of questionnaires were analyzed in the light of the recommendation given by Sekaran (2003), whereby up to 75% of the survey instruments of the respondents who failed to complete the survey instrument were discarded and were not included in the analysis. After the inspection process, the raw data was manually transferred from questionnaire to the software (SPPS). Generally, the data entering process was carried out using two methods: pre coding and post coding (De Vaus, 1995). The current study used pre coding method, where all question items were pre-coded using numerical values. Moreover, frequency analysis was conducted for each variable to identify data entry errors and outliers. Any out of range value is improved further and corrected, where needed.

4.3.2 Data Screening

Data screening before analysis is an important process which ensures the accuracy of data and validates that the data is free from errors and issues. These issues include missing data, outliers, linearity, normality and homoscedasticity, which indeed impact the relationship

among the factors of the study resulting in producing unrealistic outcomes (Hair et al., 2006). In addition, the normality of data is one of the important assumptions which have to be fulfilled while applying structural equation modeling (SEM) (Hair et al., 1998; Kline, 2005; Tabachnick and Fidell, 2001). Therefore, the screening of data must be given high priority and all the issues relevant to data normality should be resolved to obtain robust results (Tabachnick and Fidell, 2007).

4.3.2.1 Missing Data

Missing data is a common issue in quantitative studies and it occurs for several reasons; the most common is sometimes, the questionnaire is too long, resulting in a feeling of irritation among the participants or the participants may accidentally miss out answering one or more items in the survey. Tabachnick and Fidell (2007, p.62) argued that "missing data seriousness depends on the pattern of missing data, how much is missing, and why it is missing." As Cohen and Cohen (1983) suggested, up to 10% of missing data may not affect the results and outcome of the analysis. Various methods were suggested in treating the missing data. However, recent literature supported the use of the Expected Maximisation (EM) approach in treating the missing data compared to other methods such as list-wise deletion and mean substitution (Graham et al., 1997). Since the missing data in the study was less than 5 %, therefore, the selection of method would not cause a serious variation in the results as each method has its own advantages and disadvantages (Hair et al., 1998). The responses with the missing data were replaced with the Expected Maximisation (EM) technique for each variable. In fact, this is considered the most appropriate method in view of it being the most common (Schwab, 2005) and extensively

used method (Hair et al., 1998) in treating the missing cases because it is established on real responses which provide a solid reason for the means to replace the missing data.

4.3.2.2 Outliers

Outliers are the values with distinct characteristics, considerably different from other values on one or more variables to deviate the statistics (Tabachnick and Fidell, 2007). According to Hair et al. (2006, p.73), an outlier is judged to be an unusually high or low value on a variable, or a unique combination of values across several variables that make the observation stand out from the others. Tabachnick and Fidell (2007), Hair et al. (2006, p.73) and Field (2006) recommended three methods for assessing and detecting the outliers such as:

1. Univariate detection
2. Bivariate detection and
3. Multivariate detection

Univariate outliers are observations with the extreme value on one variable which could be detected by using it in applying the distribution test. According to Tabachnick and Fidell, (2007, p.73) 'the extremeness of the standardized scores also rely on the sample size of the study with a very large N, a few standardized scores in excess of 3.29 are expected'. On the other hand, according to Hair (1998), any research based on a large sample size $z>4$ is manifested by an extreme observation. In the current study, univariate outliers were examined using histograms, box plot and standardized (z) score and it was found that none of the variables exceeded the threshold values.

Bivariate outliers can be detected using a technique where multiple variables are joined in a scatter plot, in which the cases will be treated as isolated points if they are outside the range of the other observations (Hair et al., 2006).

Multivariate refers to the combination of scores on multiple variables. Comparatively, multivariates were found to be more effective then univariates, in the case of the extensive number of graphs and limited number of variables. Thus, the multivariate detection method is more significant for multidimensional position of variables. Multivariate outliers can be examined using a technique called the "Mahalanobis D^2" measure in which the examination of each observation can be done across a set of variables. The test parameters explain that if D^2/df (degree of freedom) values exceed the value of 2.5 in a small sample and 3 or 4 in a large sample, this is demonstrated as a possible outlier (Hair, at el., 2006, p.75). In this research, the Mahalanobis D^2 measure was used to detect multivariate outliers from the observations. Investigation of the D^2 values in the entire observation does not exceed the threshold values and indicates the absence of multivariate outliers in the data and retains all the observations for further analysis.

Normality of the data can be examined using several statistical methods (Tabachnick and Fidell, 2007 and Hair et al., 2006). These statistical methods include the skewness and kurtosis test and Kolmogoroy and Shapiro (Field, 2006; Tabachnick and Fidell, 2007; Hair et al., 2006). To verify the normal distribution of the data, the skewness and kurtosis test were applied and were considered sufficient normality on the basis of achieving skewness and kurtosis values smaller than absolute values of 2 and 7 respectively (Cunningham 2008a; Curran, West, and Finch 1996; Kline 2005). The skewness and kurtosis values in Table 4.2 show sufficient data normality.

Table 4.2: Descriptive Statistics: Skewness and Kurtosis

	Items	Mean	SD	Skewness	Kurtosis
	Attitude towards entrepreneurship				
1	To what extent will starting a business provide you with independence	4.08	0.912	-0.71	-0.14
2	To what extent will starting a business provide you with decision-making power	4.3	0.773	-1.026	0.802
3	To what extent will starting a business provide you with a position of authority	4.31	0.748	-1.038	1.018
4	To what extent will starting a business provide you with an opportunity to be your own boss	4.41	0.789	-1.491	2.462
5	To what extent will starting a business provide you with an opportunity to know about your abilities	4.12	0.911	-0.802	-0.214
6	To what extent will starting a business provide you with an opportunity to make use of your creativity	4.14	0.8	-0.439	-0.792
7	To what extent will starting a business provide you with an opportunity to carry out your dreams	4.06	0.891	-0.571	-0.452
8	To what extent will starting a business provide you with an opportunity to create something new	4.06	0.851	-0.511	-0.547
9	To what extent will starting a business provide you with an opportunity to have a challenging job	3.84	0.933	-0.945	1.758
10	To what extent will starting a business provide you with an opportunity to have an exciting job	4	0.96	-1.046	1.797
11	To what extent will starting a business provide you with an opportunity to have an interesting job	3.98	0.963	-1.142	2.233
12	To what extent will starting a business provide you with an opportunity to have power in making your own decisions	4.13	0.896	-1.555	4.103
13	To what extent will starting a business provide you with an opportunity to have authority in making your own decisions	3.89	0.96	-1.169	2.129
	Subjective Norms				
1	To what extent is it important to you that your closest family members think that you should start your own business	3.27	1.19	-0.357	-0.579
2	To what extent is it important to you that your closest friends think that you should start your own business	3.2	1.2	-0.261	-0.595

Table 4.2: Continued

3	To what extent is it important to you that your colleagues and people around you think that you should start your own business	3.07	1.24	-0.128	-0.837
4	To what extent is it important to you that your fellow graduates of the entrepreneurship programs think that you should start your own business	3.15	1.15	-0.106	-0.49
5	To what extent is it important to you that the local business community leaders think that you should start your own business?	2.96	1.24	-0.039	-0.831
	Perceived Behavioural Control				
1	To what extent would it be easy for you to become an entrepreneur	3.38	1.14	-0.271	-0.751
2	To what extent would it be easy for you to start your own business	3.44	1.14	-0.172	-0.885
3	To what extent do you believe that the number of events outside your control which could prevent me from being self-employed is numerous	3.49	0.96	-0.323	-0.405
4	To what extent are you confident that you have the ability to successfully become self-employed	3.85	1.05	-0.818	0.195
5	To what extent are you confident that if you start a business, the failure chances will be very low	3.61	1.12	-0.498	-0.509
	Entrepreneurial Intention				
1	You are ready to do anything to be an entrepreneur	3.57	1.13	-0.674	0.075
2	Your professional goal is to become an entrepreneur	3.68	1.14	-0.691	-0.007
3	You will make every effort to start your own business	3.75	1.13	-0.843	0.396
4	You are determined to create a firm in the future	3.84	1.03	-1.193	1.909
5	You have very seriously thought of starting a firm.	3.71	1.1	-0.806	0.509
6	You have firm intentions to start a business	3.51	1.31	-0.597	-0.663
	Entrepreneurial behaviour				
1	To what extent are you involved in preparing a business plan	3.05	1.31	-0.119	-0.946
2	To what extent have you organized a start-up team	2.73	1.29	0.104	-1.03
3	To what extent have you acquired the facilities/equipment	2.61	1.29	0.164	-0.98

	Table 4.2: Continued…..	2.72	1.45	0.139	-1.32
4	To what extent have you developed the product/service				
5	To what extent have you conducted a market research	2.83	1.23	-0.062	-0.716
6	To what extent have you devoted full time to the business	2.39	1.37	0.35	-1.164
7	To what extent have you saved money to invest to start your own business	2.26	1.35	0.545	-0.965
8	To what extent have you applied for a bank funding	1.81	1.2	1.157	0.09
9	To what extent have you received a bank funding	1.86	1.25	1.117	-0.055
10	To what extent have you applied for a license patent, etc.,	1.78	1.23	1.286	0.456
11	To what extent have you hired employees	1.95	1.3	0.937	-0.538
12	To what extent have you carried out sales promotion activities	1.83	1.22	1.225	0.347
13	To what extent have you a business registration	2.33	1.47	0.546	-1.159
14	To what extent have you applied for a license patent, etc.,	2.17	1.41	0.604	-1.177
	Entrepreneurship Education learning				
1	Increase your understanding of the attitudes, values and motivation of entrepreneurs	3.6	1.22	-0.953	0.656
2	Increase your understanding of the actions someone has to take in order to start a business	3.59	1.26	-0.952	0.446
3	Enhance your practical management skills in order to start a business	3.51	1.21	-0.802	0.333
4	Enhance your ability to develop networks	3.33	1.26	-0.577	-0.262
5	Enhance your ability to identify an opportunity	3.42	1.26	-0.822	0.182
	Entrepreneurship Education Inspiration				
1	The views of a professor	4.01	0.72	0.019	-1.111
2	The views of an external speaker	4.07	0.6	-0.033	-0.268
3	The views of a visiting entrepreneur	4.04	0.67	-0.034	-0.793
4	The views of classmate(s),	3.93	0.61	0.608	-0.319
5	The preparation for a business plan competition	3.93	0.61	0.512	-0.43
6	The views of judges of the competition	4.01	0.72	0.019	-1.111
	Entrepreneurship Education learning				
1	A pool of entrepreneurial-minded classmates for building a team	2.86	1.16	0.169	-0.638

2	**Table 4.2: Continued…..**	2.55	1	-0.255	-0.979
3	A pool of university technology Advice from faculty	2.78	1.24	0.086	-0.914
4	Advice from classmates	2.959	1.33	-0.006	-1.119
5	Advice from tech-transfer officers	2.57	1.42	0.32	-1.211
6	Research resources (library /web)	2.88	1.2	-0.038	-1.013
7	Networking events	2.67	1.27	0.183	-1.124
8	Physical space for meetings	2.37	1.38	0.356	-1.151
9	Business plan competitions (testing ground for the idea)	2.14	1.02	0.442	-0.946
10	Seed funding from university	2.35	1.35	0.611	-0.936
11	Referrals to investors	1.95	1.05	0.778	-0.677
	Perceived entrepreneur motivators				
1	To change your self	3.95	0.05	-0.865	-0.718
2	To realize your dream	3.93	0.57	0.169	0.026
3	To take advantage of your creative talents	3.99	0.63	0.107	-0.553
4	Entrepreneurs have a positive image in your society	3.96	0.63	0.154	-0.506
5	Consultant and service support for new companies are available	4.03	0.71	0.017	-1.095
6	The creative atmosphere in your university inspires you to develop ideas for new businesses	4.02	0.65	0.069	-0.701
7	Entrepreneurial development institutes in Pakistan motivate you to start your own business	4.07	0.65	-0.062	-0.653
8	The unnerving markets prompt you to start a business	4.04	0.58	0.153	-0.209
9	University and industry collaboration inspire you to develop ideas for new businesses	3.69	0.38	-1.099	-0.363
10	To receive a salary based on merit	3.88	0.14	-0.939	-0.527
11	To provide a comfortable retirement	3.8	0.65	0.499	-0.538
12	To work at a location of your choice	3.99	0.62	0.112	-0.408
13	The need for a job	3.55	0.4	-0.354	-1.385
14	To invest your personal saving	3.53	0.41	-0.168	-1.483
15	To increase your status/prestige	3.85	0.64	0.465	-0.51
16	To follow the example of a person you admire	3.88	0.69	0.298	-0.835
17	To maintain a family tradition	3.47	0.81	-0.027	-0.209
	Perceived institutional and environmental barriers				
1	Government organizations do not assist individuals starting their own businesses	3.94	0.56	0.326	0.195
2	Government supports government contracts for new and small businesses	3.4	0.82	0.088	-0.337
3	Local and national government have no special support for individuals starting a	3.87	0.13	-0.341	-1.474

	Table 4.2: Continued…..				
	new business				
4	Government does not sponsor organizations that help new businesses develop	3.64	0.39	-0.723	-0.999
5	Bad economic factors	3.61	0.41	-0.576	-1.324
6	Risk greater than initially expected	3.97	0.59	0.083	-0.113
7	The uncertainty of failure	3.88	0.12	-0.279	-1.586
8	Lack of marketing skills	3.87	0.13	-0.36	-1.484
9	Lack of managerial or financial expertise	3.08	0.72	-0.142	-1.071
10	Lack of info about business start-ups	3.15	0.74	-0.323	-1.101
11	Finding the right partner	3.38	0.87	-0.054	-0.619
12	Compliance with government regulations	3.5	0.82	-0.367	-0.308
13	High taxes and fees	3.68	0.4	-0.914	-0.786
14	Finding suitable labour	3.95	0.59	0.241	-0.171
15	Fear of failure	3.63	0.4	-0.709	-1.08
16	Convincing others it is a good idea	3.62	0.87	-0.334	-0.387
17	No one wants to help you	3.58	0.85	-0.061	-0.485
18	Lack of suitable premises	3.39	0.9	0.123	-0.599
19	Difficulty in obtaining finance	3.39	0.96	0.072	-0.923
20	Lack of own savings or assets	3.72	0.96	-0.338	-0.74
21	Lack of support from family or friend	4.17	0.71	-0.306	-0.931
22	Government organizations do not assist individuals starting their own businesses	3.73	0.92	-0.355	-0.522

4.4 Response rate

In order to acquire sufficient data to test the proposed hypothesis, 480 survey questionnaires were distributed to o the students who are enrolled in entrepreneurship education programs and in the last year of their studies. Out of 480 survey questionnaires, 421 questionnaires equivalent to 87.7 percent response rate were retrieved. Among the received 87.7%, survey questionnaires, 59 respondents failed to respond to at least 75% of the items and therefore the researcher decided not to include these in the analysis. Further, in 14 survey questionnaires, it was found that the respondents provided the same response to a particular scale (5) in all items of the survey. The remaining 348 of the survey questionnaires equivalent to 72.5% were found to be useable and effective and these were considered sufficient enough to carry out the analysis and to test the proposed hypothesis of

the study. Table 4.3 shows the summary of the data collection and response rate of the survey.

Table 4.3: Summary on the Rate of Return of Questionnaires

	Number of Questionnaires	Percentage
Total number of surveys distributed	480	100%
Number of Completed questionnaires	421	87.7%
Uncompleted questionnaires	59	1.2%
Same response to all items	14	
Useable questionnaires	348	72.5%

The response rate of this research is considered sufficient and appropriate due to the following reasons. According to Randall and Gibson (1990), the response rate in the range of 21 to 50% in business ethics is recognized as appropriate for data analysis. Further, the response rate of the current study is higher than the prior studies conducted by Souitaris, Zerbinati, & Al-Laham (2007) in entrepreneurship and entrepreneurship education.

4.4.1 Non-response bias

Non response bias may create a serious issue in terms of the validity of the survey (Tse et al., 2003) and therefore is to be considered when dealing with survey methodology (Armstrong and Overton, 1977). Since the data was collected from both bachelor's and master's degree students who were in the last year of their studies, an independent sample t-test was conducted to assess the issue of non-response bias using the Armstrong and Overton (1977) method by comparing the responses of bachelor students and master students on the key responses of the principle constructs of the study. The demographic statistics in Table 4.5 show that 56% of the respondents were reading for their bachelor

degrees and 44% of the questionnaires were obtained from the students of master programs. The results of the independent sample t-test in Table 4.4 showed an insignificant difference of the responses between the two groups on all variables. Thus, the test revealed that the responses of those surveyed are typical of the target population.

Table 4.4: Independent Samples T-test

Constructs		Levene's Test for Equality of Variances		T-Test for Equality of Means	
		F	Sig.	T	Sig. (2tailed)
ATE	Equal Variance Assumed	10.44	0.001	325	0.257
	Equal Variance not Assumed			311.221	0.24
SN	Equal Variance Assumed	0.842	0.36	325	0.153
	Equal Variance not Assumed			282.284	0.193
PCB	Equal Variance Assumed	3.231	0.073	325	0.206
	Equal Variance not Assumed			267.539	0.207
EI	Equal Variance Assumed	0.93	0.336	325	0.865
	Equal Variance not Assumed			286.887	0.864
EB	Equal Variance Assumed	1.752	0.187	325	0.14
	Equal Variance not Assumed			272.091	0.142
EEL	Equal Variance Assumed	3.557	0.06	325	0.23
	Equal Variance not Assumed			310.248	0.232
EEI	Equal Variance Assumed	5.682	0.018	325	0.321
	Equal Variance not Assumed			302.13	0.319
EEIR	Equal Variance Assumed	0.988	0.321	325	0.152
	Equal Variance not Assumed			271.748	0.192
PEM	Equal Variance Assumed	0.095	0.758	325	0.948
	Equal Variance not Assumed			289.639	0.948
PEB	Equal Variance Assumed	2.84	0.093	325	0.274
	Equal Variance not Assumed			308.987	0.259

4.5 Profile of respondents

The majority of the students enrolled in the entrepreneurship education programs are male (73.2%) compared to females (23.9%). Since the graduates holding bachelor's degrees also participated in this study, therefore, these students were young and aged 18 to 22 (44.3%) followed by the graduates aged 23-26 (32.6%). Of the total number, 195 (56.0%) of the students are enrolled in bachelor degrees compared to 160 (44.0%) in master degree programs. Pakistan is a developing country and most of the students belong to middle class families, where they try to cover their education cost and make ends meet working different types of jobs during their studies. That particular phenomenon can be observed from the demographic results of work experience, whereby half (50.6%) of the students are reported to have employment experience. Among the self-employed graduates, 27.3% have 1 to 3 years work experience followed by 9.8% with 4 to 7 years work experience. The majority of those self-employed students were in their master degree programs. Next, when they were asked about their experience of being self-employed, whether positive (encouraging) or negative (discouraging), the replies were mostly in the affirmative (encouraging); 59% of the graduates reported they encountered positive experiences. This implies either a supportive entrepreneurial environment in their country or a manifestation of strong control of the students' behaviour.

Table 4.5: Demographic profile of respondents

Background	Categories	Frequency	(%)
Gender	Male	254	73
	Female	83	23.9
	No Answer	11	3.2
	Total	348	100
Age	18-22 years	154	44.3
	23-26 years	114	32.8
	27-30 years	23	6.6
	31-36 years	20	5.7
	37-42 years	12	3.4
	No Answer	25	7.2
	Total	348	100.0
Program	Bachelor	195	56.0
	Master	132	44.0
	Total	348	100
Work Experience	Yes	176	50.6
	No	142	40.8
	No Answer	30	8.6
	Total	348	100
Years of work experience	1- 3 years	95	27.3
	4-7 years	34	9.8
	8-10 years	14	4
	Above 10 years	3	0.9
	No Answer	202	58
	Total	348	100
Father's education	High school	28	8
	Secondary school	61	17.5
	Technical & vocational	70	20.1
	University or higher	159	45.7
	No Answer	29	8
	Total	348	100
Mother's Education	High school	75	21.6
	Secondary school	75	21.6
	Technical & vocational	60	17.2
	University or higher	106	30.5
	No Answer	30	8.6

	Total	348	100
Father's / Family Profession	Employed	172	49.4
	Self-Employed	116	33.3
	Retired	32	9.2
	No Answer	28	8
	Total	348	100

The demographic result in Table 4.5 further shows that most of the students belong to families holding higher qualifications. The parents of graduates had university and higher education degrees (45.7% and 30.6% respectively). Most of the participating graduates have a non-business family background (49.4%) and 33.3% have a business family background.

4.6 Analysis and results of measurement models (CFA) Stage-1

The data analysis process of this study is based on the two-stages modelling. Firstly, a measurement model was tested and developed to provide stable and valid statistics to measure the structure model, test the overall model fit, estimate the model parameter and construct validity, as recommended by Anderson and Gerbing (1988). In the second stage, the structural model was investigated and developed to further assess the co-efficiency between the constructs of the study. Besides this, the measurement model was developed due to two major reasons: first, because this is the most widely-used approach (Hair et al., 2006) and secondly, the two--stages model has the capability to provide the accurate value of reliability of the items in each construct and evade any possible interaction between measurement and structural model. In addition, the measurement of the model development provides benefits in order to assess the dependency of the observable variable on the unobservable variables or latent variables (Hair et al., 2006). On the other hand, Arbuckle

(2005, p. 89) explains that the measurement model refers to 'the portion of the model that specifies how the observed variables depend on the unobserved, composite or latent variables.

For this purpose, confirmatory factory analysis (CFA) was carried out to develop the measurement model using AMOS 18.0. CFA is a statistical technique used to explain how variables measured are rationally represented constructs in the model (Hair et al., 2006) and whether the number of factors and the loadings of measured variables are significantly loaded on their respective variables (Kline, 2005). Furthermore, CFA is also considered a useful technique to examine the factorial properties of the constructs applied in SEM (Anderson and Gerbing, 1988; Goldberg and Velicer, 2006; Hopwood and Donnellan, 2010; Straub, Boudreau, and Gefen, 2004; Thompson, 2004). Generally, CFA can be carried out in either of the two methods here: (1) testing each construct separately (2) testing all constructs together in one measurement model (Cheng, 2001; Woo et. al., year??). In the current study, CFA is conducted individually on each construct of the study.

4.6.1 Assessment of Uni-dimensionality

Uni-dimensionality is generally applied to confirm the validity of the constructs by conducting CFA (Hair, Tatham, Anderson, & Black, 2006). Therefore, the measurement model which uses multiple items in measuring each underlying factor is tested to identify the redundant items. Any model which carries redundant items needs to be re-specified by removing those redundant items (Arbuckle, 2005; Hair et al., 2006; Kline, 2005) that help

the researchers to achieve the parsimonious uni-dimensional constructs (Anderson & Gerbing, 1988).

The validity of the construct is an important condition in further theory testing and development. Thus, indicators or items used to measure the particular construct needs to achieve the threshold values of high standardized loading (0.5 or greater) on the factors (Hair et al., 2006). Further, the correlation value of the factors should not be greater than 0.85 (Kline, 2005). In addition, the measure model is required to meet the recommended criteria of all fit indices discussed in Section 4.2.3.

In the event the measurement model fails to accomplish the model fit conditions discussed above, then a researcher needs to refer to the standardized residual covariance and modification index in order to improve the model fit. Residual values with ± 2.58 is a manifestation of specification errors while the modification index measures how much chi-square value would decrease if a specific parameter is adjusted as suggested. However, at the same time, the evaluation of measurement model is subjected to the theoretical justification as recommended by the literature (Arbuckle, 2005; Hair et al., 2006; Kline, 2005).

The next sub-section discusses the development of measurement model for each construct of the main study and control group. The results of testing the uni-dimensionality of each construct, attitude towards being an entrepreneur, subjective norms, perceived behaviour control, entrepreneurial intentions, entrepreneurial behaviour, perceived entrepreneurial

motivators and perceived entrepreneurial barriers using AMOS 18.0 are presented in the following section.

4.6.1.1 Attitude towards being an entrepreneur

Attitude towards being an entrepreneur was measured through the following constructs: autonomy, self-realization, challenge and authority. Each of these constructs was measured using two to four items. In total, thirteen items were used to measure four constructs. The overall assessment of the measurement model showed that all four factors which were finalized in the pilot study failed to achieve a significant fit for the scale since the chi-square was significant ($\chi 2$= 11.719 df = 9, p=.000). Further, the GFI was .703, AGFI =.750, NFI=.778, CFI=.790, TLI=.651 and RMSEA =.130.

In order to find the source of misfit and achieve a good model fit, the process of model re-specification was carried out and then the standardized residuals and standardized regression weights re-examined. It was found that all the items were loaded high within the acceptable values of 0.50 except for five items (AA1, SR1, SR2, SR4 and AC1) as depicted in Table 4.6 and as such, these items were removed iteratively. The CFA test was conducted for the rest of the remaining factors and the results of the final CFA model showed a better fit to the data. The model fit indices such as GFI= 0.955, AGFI= .884, NFI .958, CFI= 0.966, TLI= 0.935 and RMR 0.016 manifested a good fit for the measurement model although the value of RMSEA=0.08 which seemed high compared to the recommended value (0.05). However, it is argued that the value of RMSEA is sensitive to the sample size of research (Byrne, 2009; Hair et al., 2006). The measurement model of attitude toward being an entrepreneur is placed in Appendix 2.1.

Table 4.6 also shows the results of attitude towards being an entrepreneur for the control group, as the constructs such as autonomy, self-realization, challenge and authority were used for the control group. The overall assessment of the measurement model showed that the four factors failed to achieve a significant fit for the scale as the chi-square was significant ($\chi 2$= 2.049, df = 59, p=.000). Further, the GFI was .946, AGFI =.917, NFI=.819, CFI=.895, TLI=.861, RMR= 0.027 and RMSEA =.057.

In order to find the source of misfit and achieve a good model fit, the process of model re-specification was carried out and then the standardized residuals and standardized regression weights examined. It is found that all the items were loaded high within the acceptable values of 0.50 except for two items (AA1 and SR3) as shown in Table 4.6 and these items were removed iteratively. The CFA test was conducted for the rest of the remaining factors and the results of the final CFA model showed a better fit to the data. The model fit indices such as GFI= 0.961, AGFI= .632, NFI .870, CFI= 0.932, TLI= 0.901 and RMR 0.021 manifested a good fit for the measurement model although the value of RMSEA= 0.053. The measurement model of attitude towards being entrepreneurs is placed in Appendix 3.1.

Table 4.6: Attitude towards being an entrepreneur: Items and their Descriptions

Original Item	Main Study			Control Group	
	IL	Ld	ID	Ld	ID
To what extent will starting a business provide you independence	AA1	0.44	**AA1**	.36	**AA1**
To what extent will starting a business provide you with decision-making power	AA2	0.61		.64	
To what extent will starting a business provide you with a position of authority	AA3	0.83		.52	
To what extent will starting a business provide you with the opportunity to be your own boss	AA4	0.92		.55	
To what extent will starting a business provide you with an opportunity to know about your abilities	SR1	0.23	**SR1**	.51	
To what extent will starting a business provide you with an opportunity to make use of your creativity	SR2	0.35	**SR2**	.57	
To what extent will starting a business provide you with an opportunity to carry out your dreams	SR3	0.43		.38	**SR3**
To what extent will starting a business provide you with an opportunity to create something new	SR4	0.29	**SR4**	.65	
To what extent will starting a business provide you with an opportunity to have a challenging job	AC1	0.46	**AC1**	.52	
To what extent will starting a business provide you with an opportunity to have an exciting job	AC2	0.53		.54	
To what extent will starting a business provide you with an opportunity to have an interesting job	AC3	0.78		.56	
To what extent will starting a business provide you with an opportunity to have power in making your own decisions	AAU1	0.76		.62	
To what extent will starting a business provide you with an opportunity to have authority in making your own decisions	AAU2	0.58		.61	

Notes: IL=items labelled, Ld= loadings, ID= items deleted

4.6.1.2 Subjective Norms for being an entrepreneur

The scale elements of the one factor model of subjective norms were tested using five items through the confirmatory factor analysis. The overall assessment of the measurement model shows that the model needed to be re-specified given that the model fit indices showed a poor model fit for the 'subject norms' factor. The chi-square was significant ($\chi 2$= 7.838, df = 5, p=.000). Further, the GFI was .954, AGFI =.863, NFI=.915, CFI=.848, TLI=.925 and RMSEA =.131.

The above results of the measurement model fit indices required further examination of the standardized residual covariance of each item and modification indices. The initial assessment of the measurement model shows that one item (SN2) indicated low loadings (see Table 4.7) and therefore it was decided that it should be removed. After removing the low loaded item, the model fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi 2$= 0.08, df = 2, p=.923). Further, the GFI was 1.000, AGFI =.999, NFI=.999, CFI=1.000, TLI=1.02, RMR= 0.005 and RMSEA =.0.000. The measurement model of subjective norms of attitude towards being an entrepreneur is placed in Appendix 2.2.

Table 4.7 also shows the results of subjective norms for the control group, the measurement model of the subjective norms was tested using five items using the confirmatory factor analysis. The initial results of the measurement model shows that the model needed to be re-specified given that the model fit indices showed a poor model fit for the 'subject norms' factor as the chi-square was significant ($\chi 2$= 7.414, df = 5, p=.000). Further, the GFI was .958, AGFI =.874, NFI=.915, CFI=.925, TLI=.849, RMR = 0.054 and RMSEA =.140.

The above results of the measurement model fit indices required a further examination of the standardized residual covariance of each item. The initial assessment of the measurement model shows that one item (SN1) (see Table 4.7) indicated low loadings and hence, it was decided that the item be removed. After removing the low loaded item, the model fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi 2$= 0.08, df = 2, p=.923). Further, the GFI was 1.000, AGFI =.999, NFI=.999, CFI=1.000, TLI=1.02, RMR= 0.005 and RMSEA =.0.000. The measurement model of subjective norms is placed in Appendix 3.2.

Table 4.7: Subjective Norm for being an entrepreneur: Items and their Descriptions

Original Item	Main Study			Control Group	
	IL	Ld	ID	Ld	ID
To what extent is it important to you that your closest family members think that you should start your own business	SN1	0.65		0.41	**SB1**
To what extent is it important to you that your closest friends think that you should start your own business	SN2	0.41	**SB2**	0.54	
To what extent is it important to you that your colleagues and people around you think that you should start your own business	SN3	0.80		0.64	
To what extent is it important to you that your fellow graduates of the entrepreneurship programs think that you should start your own business	SN4	0.72		0.62	
To what extent is it important to you that the local business community leaders think that you should start your own business	SN5	0.70		0.74	

Notes: IL=items labelled, Ld= loadings, ID= items deleted

4.6.1.3 Perceived Behaviour control

One factor of the measurement model for perceived behaviour control (PCB) is measured with five items. Overall, the results of the model fit indices showed a poor model fit to the sample of data. The chi-square was significant ($\chi 2$= 6.459, df = 5, p=.000). Further, the GFI

was .959, AGFI =.878, NFI=.899, CFI=.912, TLI=.824, RMR=0.044 and RMSEA =.101 and thus required to be re-specified.

After assessing the uni-dimensionality of PCB using the CFA, the examination of the standardized residual covariance and modification reveals that one item (PBC4) indicated low loadings (see Table 4.8) and therefore it is required to be deleted and the rest of the four items indicated this model fitted the data adequately, as the chi-square was insignificant (χ2=1.311, df =2, p=.027). Further, the GFI =.996, AGFI=.989, NFI=.987, CFI=.997, TLI=.992, RMR= 0.02 and RMSEA=.0.031. The measurement model of perceived behavior control being an entrepreneur is placed in Appendix 2.3.

Table 4.8 indicates the result of the uni-dimensionality of perceived control behaviour (PCB) for the control group. The initial results of the model fit indices show a poor model fit to the sample data as the chi-square was significant (χ2= 6.419, df = 5, p=.000). Further, the GFI is .959, AGFI=.876, NFI=.879, CFI=.894, TLI=.788, RMR=0.048 and RMSEA =.129 and thus there was requirement to re-specify.

After assessing the uni dimensionality of PCB using CFA, the examination of standardized residual covariance and modification indices reveals that one item (PBC4) (see Table 4.8) indicated low loading and affected the reliability of the estimates. Therefore, the item PBC4 was deleted and the remaining four items indicated this model fitted the data adequately (χ2=1.311, df =2, p=.027, GFI =.996, AGFI=.989, NFI=.987, CFI=.997, TLI=.992, RMR= 0.02 and RMSEA=.0.031). The measurement model of perceived behaviour control is placed in Appendix 3.3.

Table 4.8: Perceived behaviour control for being an entrepreneur: Items and their Descriptions

Original Item	Main Study			Control Group	
	IL	Ld	ID	Ld	ID
To what extent would it be easy for you to become an entrepreneur	PBC1	0.75		0.58	
To what extent would it be easy for you to start your own business	PBC2	0.82		0.76	
To what extent do you believe that the number of events outside your control which could prevent you from being self-employed is numerous.	PBC3	0.72		0.44	**PBC3**
To what extent are you confident that you have the ability to successfully become self-employed	PBC4	0.43	**PBC4**	0.76	
To what extent are you confident that if you start a business, the chances of failure will be very low	PBC5	0.53		0.64	

Notes: IL=items labelled, Ld= loadings, ID= items deleted

4.6.1.4 Entrepreneurial Intentions

An entrepreneurial intention is a single factor model consisting of six items. The initial results of the confirmatory factor analysis of entrepreneurial intentions scale showed most of the items significantly loaded above the threshold value (0.50); however, two items (EI4 and EI6) failed to load high on the factor as depicted (see Table 4.9) and affected the model fit indices. The chi-square was significant ($\chi 2$= 11.719, df = 9, p=.000). Further, the GFI was .903, AGFI =.773, NFI=.778, CFI=.790, TLI=.651, RMR=0.064 and RMSEA =.184. Therefore, it was decided that the low loaded items were to be removed from the model and the model fit indices re-examined.

After removing the low loaded items, the model fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi 2$= 0.633, df = 2, p=.531). Further, the GFI was .998, AGFI =.997, NFI=.998, CFI=1.000,

TLI=1.003, RMR= 0.006 and RMSEA=.0.000. The measurement model of perceived behaviour control being an entrepreneur is placed in Appendix 2.4.

Table 4.9 shows the results of uni-dimensionality of entrepreneurial intention for the control group. The results of the confirmatory factor analysis of entrepreneurial intentions scale showed most of the items significantly loaded above the threshold value (0.50); however, two items (EI2 and EI3) as shown failed to load high on the factor and affected the model fit indices as the chi-square was significant ($\chi 2$= 9.613, df = 9, p=.000). Further, the GFI was .918, AGFI =.810, NFI=.850, CFI=.862, TLI=.770, RMR=0.047 and RMSEA =.162. Therefore, it was decided the low loaded items were to be deleted and the model re-examined.

After removing the low loaded items, model fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi 2$= 0.918, df = 2, p=.399). Further, the GFI was .997, AGFI =.986, NFI=.994, CFI=1.000, TLI=1.002, RMR= 0.008 and RMSEA =.0.000.

Table 4.9: Entrepreneurial Intentions: Items and their Descriptions

Original Item	Main Study			Control Group	
	IL	Ld	ID	Ld	ID
You are ready to do anything to be an entrepreneur	EI1	0.79		0.73	
Your professional goal is to become an entrepreneur	EI2	0.90		0.38	**EI2**
You will make every effort to start your own business	EI3	0.88		0.46	**EI3**
You are determined to create a firm in the future	EI4	0.33	**EI4**	0.76	
You have very seriously thought of starting a firm	EI5	0.63		0.82	
You have firm intentions to start a business	EI6	0.35	**EI6**	0.75	

Notes: IL=items labelled, Ld= loadings, ID= items deleted

4.6.1.5 Entrepreneurial Behaviours

The current research utilized the four items scale proposed by Alsos & Kolvereid (1998); two to six items were used to tap each three factors of entrepreneurial behaviour. A three factor model was tested by conducting CFA and the overall results of the assessment model indicated poor model fit indices fitting the sample of data. The results revealed significant chi-square ($\chi 2$= 12.267, df = 74, p=.000). Further, the GFI was .676, AGFI =.0.545, NFI=.668, CFI=.685, TLI=.613, RMR=0.15 and RMSEA =.145.

Observing the standardized residual covariance and modification indices, the CFA model was re-specified several times for entrepreneurial behaviour to achieve the appropriate results of the measurement model. All along the assessment process, the results manifested showed that the seven items, EBBP1, EBBP2, EBBP4, EBBP6, EBF4, EBBF1 and EBBF4 (see Table 4.10) were not significantly loaded on their particular factors and thus, it was decided that they be removed from the model. However, the removal of these items did not significantly change the content of the entrepreneurial behaviour construct as the RMESA value was still above threshold value (0.05) and the chi square value was still significant. Each of the remaining eight items had high factor loading (above 0.50) and the rest of the model fit indices significantly fitted the sample data ($\chi 2$= 4.535, df = 17, p=0.7). Further, the GFI was .941, AGFI =.876, NFI=.989, CFI=.917, TLI=0864, RMR= 0.046 and RMSEA=.0.106. The measurement model of entrepreneurial behaviour is placed in Appendix 2.5.

Table 4.10: Entrepreneurial Behaviours: Items and their Descriptions

Original Item	Item Label	Loadings	Item Deleted
To what extent are you involved in preparing a business plan	EBBP1	.38	**EBBP1**
To what extent have you organized a start-up team	EBBP2	.35	**EBBP2**
To what extent have you acquired the facilities/equipment	EBBP3	.59	
To what extent have you developed a product/service	EBBP4	.64	
To what extent have you conducted a market research	EBBP5	.81	
To what extent did you devote full time to the business	EBBP6	.23	**EBBP6**
To what extent have you saved money to invest to start your own business	EBF1	.57	
To what extent have you applied for a bank funding	EBF2	.76	
To what extent have you received a bank funding	EBF3	.51	
To what extent have you applied for a license patent, etc.,	EBF4	.06	**EBF4**
To what extent have you hired employees	EBBF1	.13	**EBBF1**
To what extent have you carried out sales promotion activities	EBBF2	.82	
To what extent have you a business registration	EBBF3	.48	
To what extent have you applied for a license patent, etc.	EBBF4	.39	**EBBF4**

4.6.2 Entrepreneurship Education

The current study investigated the role of entrepreneurship education programs in the development of entrepreneurial attitude among the university graduates and therefore adopted an approach developed by Souitaris et al. (2007) in investigating the entrepreneurial benefits which included entrepreneurship learning benefits, entrepreneurship inspiration benefits and entrepreneurship incubation resource benefits of entrepreneurship education programs.

4.6.2.1 Entrepreneurship education learning benefits

This research used a single factor indicator latent variable approach to measure entrepreneurship learning programs benefits construct. The results of the confirmatory factor analysis of entrepreneurship learning programs benefits scale showed most of the items significantly loaded above the threshold value (0.50). However, only one item, EPL2 (see Table 4.11) failed to load high on the factor and affected the model fit indices since the chi-square was significant ($\chi2$= 8.419, df = 5, p=.000). Further, the GFI was .946, AGFI =.839, NFI=.898, CFI=.908, TLI=.815, RMR=0.03 and RMSEA=.113. Therefore, it was decided that the low loaded items were to be deleted and the model re-examined.

After removing the low loaded items, model fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi2$= 0.349, df = 2, p=.705). Further, the GFI was .999, AGFI =.995, NFI=.997, CFI=1.000, TLI=1.017, RMR= 0.006 and RMSEA =.0.000. The measurement model of entrepreneurship education learning benefits is placed in Appendix 2.6.

Table 4.11: Entrepreneurship learning programs: Items and their Descriptions

Original Item	Item Label	Loadings	Item Deleted
Increase your understanding of the attitudes, values and motivation of entrepreneurs	EPL1	.71	
Increase your understanding of the actions someone has to take in order to start a business	EPL2	.41	**EPL2**
Enhance your practical management skills in order to start a business	EPL3	.74	
Enhance your ability to develop networks	EPL4	.52	
Enhance your ability to identify an opportunity	EPL5	.64	

4.6.2.2 Entrepreneurship education Inspiration Benefits

In this research, we adopted a scale developed by Souitaris et al. (2007) whereby six items were used to assess the uni dimensionally of entrepreneurship inspiration programs benefits by the confirmatory factor analysis. The overall results of the initial assessment of model fit indices showed that two items, EPI-1 and EPI-6 (see Table 4.12) did not achieve high factor loading and therefore, it was decided they be removed since the chi-square was significant ($\chi 2$= 9.092, df = 9, p=.000). Further, the GFI was .924, AGFI =.823, NFI=.873, CFI=.884, TLI=.807, RMR=0.027 and RMSEA =.10.

After removing the two low loaded items, the rest of the four items indicated this model fitted the data adequately to the sample of the study whereby the chi-square was insignificant ($\chi 2$=3.754, df =2, p=.027, GFI =.989, AGFI=.944, NFI=.968, CFI=.976, TLI=.929, RMR= 0.013 and RMSEA=0.071. The measurement model of the entrepreneurship education inspiration benefits is placed in Appendix 2.7.

Table 4.12: Entrepreneurship education inspiration benefits: Items and their Descriptions

Original Item	Item Label	Loadings	Item Deleted
The views of a professor	EPI1	.37	**EPI1**
The views of an external speaker	EPI2	.62	
The views of a visiting entrepreneur	EPI3	.57	
The views of classmate(s)	EPI4	.80	
The preparation for a business plan competition	EPI5	.76	
The views of judges of the competition	EPI6	.45	**EPI6**

4.6.2.3 Entrepreneurship education utilization of incubation resources benefits

As indicated in Table 4.13, in this research, eleven items were used to measure one factor model of entrepreneurship incubation resources benefits. The initial results of uni dimensionality revealed that the model needed to be re-specified several times. The examination of standardized residual covariance and modification indices indicated that six items (EUR5, EUR6, EUR7, EUR8, EUR9 and EUR11) loaded low (see Table 4.13) on their particular factor and therefore, it was decided they be removed since the chi-square was significant ($\chi 2$= 15.019, df = 44, p=.000). Further, the GFI was .722, AGFI =.583, NFI=.628, CFI=.641, TLI=.552, RMR=0.167 and RMSEA =.19.

The final CFA model which consisted of only five items were loaded high on the factor 'Entrepreneurship Incubation Resources' and the fit indices showed evidence that the measurement model was satisfactorily valid. The chi square was statistically insignificant ($\chi 2$= 1.460, df = 5, p=.199). Further, the GFI was .991, AGFI =.972, NFI=.984, CFI=.995, TLI=0.990, RMR= 0.045 and RMSEA=.0.038. The measurement model of entrepreneurship education utilization of incubation resources benefits is placed in Appendix 2.8.

Table 4.13: Entrepreneurship education utilization of incubation resources benefits: Items and their Description

Original Item	Item Label	Loadings	Item Deleted
A pool of entrepreneurial-minded classmates for building a team	EUR1	.61	
A pool of university technology	EUR2	.71	
Advice from faculty	EUR3	.63	
Advice from classmates	EUR4	.66	
Advice from tech-transfer officers	EUR5	.31	**EUR5**
Research resources (library /web)	EUR6	.40	**EUR6**
Networking events	EUR7	.29	**EUR7**
Physical space for meetings	EUR8	.43	**EUR8**
Business plan competitions (testing ground for the idea)	EUR9	.19	**EUR9**
Seed funding from university	EUR10	.55	
Referrals to investors	EUR11	.48	**EUR11**

4.6.3 Contextual and Environmental Factors

This research investigated the moderating role of perceived environmental and contextual entrepreneurial motivators and barriers on the relationship between entrepreneurial intentions and entrepreneurial behaviour.

4.6.3.1 Perceived Entrepreneurial Motivators

The three selected perceived entrepreneurial motivator's constructs are intrinsic rewards, extrinsic rewards and perceived entrepreneurial support. Each of these constructs was measured using three to six items. A total of seventeen items were used to measure three constructs. The three factors of the measurement model of perceived entrepreneurial motivator were assessed by the confirmatory factor analysis and the overall results of the initial assessment revealed that several items fail to load significantly on their particular factors and this affected the model fit indices while generating poor values of the model fit

indices. The chi -square was significant ($\chi 2$= 5.421, df =116, p=.000). Further, the GFI was .802, AGFI =.739, NFI=.602, CFI=.645, TLI=.584, RMR= 0.03 and RMSEA =.118.

On examination of the standardized residual covariance, it was observed that ten items (ER3, ES3, ES4, ES5, ES6, IR4, IR5, IR6, IR7 and IR8) obtained low loadings (see Table 4.14) on their particular factor and thus, it was decided they be removed. The final modified model of perceived entrepreneurial motivators consisted of seven items in total and it was evident that it was a better model fit to the sample of the study. The chi square was statistically insignificant ($\chi 2$= 3.221, df = 11, p=.061). Further, the GFI was .97, AGFI =.924, NFI=.862, CFI=.897, TLI=0.803, RMR= 0.012 and RMSEA =.0.084. The measurement model of perceived entrepreneurial motivators is placed in Appendix 2.9.

Table 4.14: Perceived Entrepreneurial motivators: Items and their Descriptions

Original Item	Item Label	Loadings	Item Deleted
To change your self	ER1	.49	**ER1**
To realize your dream	ER2	.61	
To take advantage of your creative talents	ER3	.84	**ER3**
Entrepreneurs have a positive image in your society	ES1	.56	
Consultant and service support for new companies are available	ES2	.58	
The creative atmosphere in your university inspires you to develop ideas for new businesses	ES3	.95	
Entrepreneurial development institutes in Pakistan motivate you to start your own business	ES4	.33	**ES4**
The unnerving markets prompt you to start a business	ES5	.22	**ES5**
University and industry collaboration inspire you to develop ideas for new businesses	ES6	.39	**ES6**
To receive a salary based on merit	IR1	.42	**IR1**
To provide a comfortable retirement	IR2	.44	**IR2**
To work at a location of your choice	IR3	.37	**IR2**
The need for a job	IR4	.12	**IR4**
To invest your personal saving	IR5	.15	**IR5**
To increase your status/prestige	IR6	.27	**IR6**
To follow the example of a person you admire	IR7	.61	
To maintain a family tradition	IR8	.89	

4.6.3.2 Perceived Entrepreneurial Barriers

Perceived entrepreneurial barriers constructs were measured using the following six measures: legal and regulatory environment, hard reality, lack of skills or resources, complaint cost, lack of support and lack of capital. Each of these constructs was measured using three to four items. In total, twenty one items were used to measure six constructs. The six factors measurement of perceived entrepreneurial barriers model was assessed by the confirmatory factor analysis and the overall results of the initial assessment showed that several items failed to load significantly on their particular factors and affected the model fit indices while generating poor values of the model fit indices since the chi-square was significant ($\chi 2$= 2.485, df =174, p=.000). Further, the GFI was .888, AGFI =.851, NFI=.703, CFI=.793, TLI=.751, RMR= 0.032 and RMSEA =.069.

On examination of the standardized residual covariance, it was observed that seven items, EBLR3, EBLR4, EBHR1, EBLS4, EBCC2, and EBCC3 (see Table 4.15) had low loadings and therefore, it was decided they be removed. The final modified model of perceived entrepreneurial barriers consisted of fourteen items in total and it was evident that it was a better model fit to the sample of the study. The chi square was statistically insignificant ($\chi 2$= 1.461, df = 67, p=.008). Further, the GFI was .958, AGFI =.934, NFI=.901, CFI=.966, TLI=0.953, RMR= 0.025 and RMSEA =0.038. The measurement model of perceived entrepreneurial motivators is placed in Appendix 2.10.

Table 4.15: Perceived Entrepreneurial Barriers: Items and their Descriptions

Original Item	Item Label	Loadings	Item Deleted
Government organizations do not assist individuals starting their own businesses	EBLR1	**.71**	
Government supports government contracts for new and small businesses	EBLR2	**.58**	
Local and national government have no special support for individuals starting a new business	EBLR3	**.02**	EBLR3
Government does not sponsor organizations that help new businesses develop	EBLR4	**.28**	EBLR4
Bad economic factors	EBHR1	**.07**	EBHR1
Risk greater than initially expected	EBHR2	**.85**	
The uncertainty of failure	EBHR3	**.68**	
Lack of marketing skills	EBLS1	**.67**	
Lack of managerial or financial expertise	EBLS2	**.74**	
Lack of info about business start-ups	EBLS3	**.59**	
Finding the right partner	EBLS4	**.41**	EBLS4
Compliance with government regulations	EBCC1	**.53**	
High taxes and fees	EBCC2	**.46**	EBCC2
Finding suitable labour	EBCC3	**.42**	EBCC3
Fear of failure	EBLOS1	**.65**	
Convincing others it is a good idea	EBLOS2	**.62**	
No one wants to help you	EBLOS3	**.85**	
Lack of suitable premises	EBLOS4	**.69**	
Difficulty in obtaining finance	EBLC1	**.65**	
Lack of own savings or assets	EBLC2	**.52**	
Lack of support from family or friend	EBLC2	**.50**	

Note: summary of model fit indices of constructs of the study is placed in Appendix 2.10.

4.7 Reliability and Validity of the Constructs

The reliability and validity of the constructs were further analyzed upon ensuring the uni-dimensionality (De Wulf, Odekerken-Schroder, Iacobucci, 2001). Reliability was examined using three widely-used methods such as Cronbach's alpha, construct reliability (CR) and average variance extracted, whereas construct, convergent and discriminant validity were employed to assess the validity of the constructs.

Table 4.16: Measurement Model Evaluation

Construct	Items	Main Study				Control Group			
		SL	CA	AVE	CR	SL	CA	AVE	CR
ATE	AA2	0.61	0.843	0.53	0.88	0.64	0.72	0.54	0.83
	AA3	0.79				0.52			
	AA4	0.92				0.55			
	SR1	-				0.51			
	SR2	-				0.57			
	SR3	-				0.65			
	AC1	-				0.52			
	AC2	0.56				0.54			
	AC3	0.64				0.56			
	AAU1	0.76				0.62			
	AAU2	0.58				0.61			
SN	SN1	0.65	0.74	0.51	0.81	-	0.78	0.51	0.82
	SN2	-				0.77			
	SN3	0.80				0.76			
	SN4	0.72				0.76			
	SN5	0.60				0.64			
PBC	PBC1	0.75	0.731	0.51	0.80	0.58	0.77	0.51	0.80
	PBC2	0.82				0.77			
	PBC3	0.77				-			
	PBC4	-				0.76			
	PBC5	0.49				0.64			
EI	EI1	0.80	0.734	0.66	0.88	0.73	0.72	0.58	0.85
	EI2	0.90				-			
	EI3	0.89				-			
	EI4	-				0.76			
	EI5	-				0.82			
	EI6	0.63				0.75			
EB	EBBP3	0.59	0.71	0.58	0.91				
	EBBP4	0.64							
	EBBP5	0.81							
	EBF1	0.57							
	EBF2	0.77							
	EBF3	0.51							
	EBBF2	0.82							
	EBBF3	0.48							
ELB	EPL1	0.54	0.762	0.67	0.88				
	EPL3	0.92							
	EPL4	0.89							

Table 4.16 continued

	EPL5	0.53			
EIB	EPI2	0.61	0.799	0.51	0.80
	EPI3	0.57			
	EPI4	0.80			
	EPI5	0.76			
EIR	EUR1	0.68	0.81	0.54	0.78
	EUR2	0.92			
	EUR3	0.53			
	EUR4	0.67			
	EUR10	0.59			
PEM	ER2	0.6	0.77	0.54	0.88
	ER3	0.84			
	ES1	0.57			
	ES2	0.56			
	ES3	0.95			
	IR7	0.61			
	IR8	0.89			
PEB	EBLR1	0.71	0.79	0.57	0.94
	EBLR2	0.58			
	EBHR2	0.85			
	EBHR3	0.68			
	EBLS1	0.67			
	EBLS2	0.74			
	EBLS3	0.59			
	EBLOS1	0.65			
	EBLOS2	0.62			
	EBLOS3	0.85			
	EBLOS4	0.69			
	EBLC1	0.65			
	EBLC2	0.52			
	EBLC3	0.5			

The results in Table 4.16, suggested that all the constructs of the study achieved the required threshold value (0.70) for Cronbach's alpha and manifested the validity of the variables (Nunally & Bernstein, 1978). Further, construct validity (CR) and average variance extracted (AVE) were calculated using a formula developed by Fornell and

Larcker (1981) to further confirm the reliability of the constructs. The formula is explained below.

Construct Reliability (CR):

$$\rho_{\eta} = \frac{\left(\sum \lambda_i\right)^2}{\left(\sum \lambda_i\right)^2 + \sum \delta_i}$$

Where λ_i = Standardized loading

δ_i = error variance

Average variance extracted (AVE):

$$\rho vc\eta = \frac{\left(\sum {\lambda_i}^2\right)}{\left(\sum {\lambda_i}^2\right) + \sum \delta_i}$$

Where λ_i = Standardized loading

δ_i = error variance

The constructs of the current study significantly supported and confirmed the reliability by achieving the CR value above 0.60 and AVE of at least 0.50 as recommended by Bagozzi and Yi (1988). (See Table 4-16).

4.8 Discriminant validity (correlation among the construct)

Data was further analyzed by testing the discriminant validity of the constructs. Discriminant validity was analyzed and valued (see Table 4.16) to check the robustness of the model. According to Fornell and Larker (1981), discriminant validity is assessed by comparing the shared variance (squared correlation) between each pair of constructs against the minimum of the AVEs for these two constructs. If within each possible pairs of constructs, the shared variance observed is lower than the minimum of their AVEs, it

confirms discriminant validity (Fornell and Larker, 1981). As shown in Table 4.17, the squared variance for each measure was lower than the average variance extracted by the indicators measuring those variables thus showing adequate discriminate validity. As a whole, the model indicated significantly convergent validity and discriminative validity.

Table 4.17 Discriminant validity of constructs

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
ATE	4.25	0.45	**0.83**									
SN	3.18	0.8	.527**	**0.73**								
PCB	3.53	0.68	.384**	.684**	**0.75**							
EI	2.49	0.65	.370**	.561**	.443**	**0.79**						
EB	1.71	0.45	.209**	0.092	.130*	0.007	**0.83**					
EEL	3.68	0.49	.418**	.505**	.478**	.348**	.143*	**0.81**				
EEI	3.87	0.39	.633**	.637**	.521**	.454**	.348**	.496**	**0.78**			
EEIR	2.48	0.88	.295**	.542**	.532**	.215**	.142*	.288**	.493**	**0.73**		
PEM	3.93	0.29	.261**	.406**	.346**	.349**	0.048	.223**	.368**	.218**	**0.76**	
PEB	3.6	0.34	.126*	.315**	.263**	.206**	0.054	.278**	.272**	.270**	0.069	**0.75**

Note: *Values in the diagonal (bold) represent the square root of the Average Variance Extracted and the off-diagonals represent the correlation*.

Note: ATE: Attitude towards entrepreneurship; SN: Subjective Norms; PBC: Perceived Behavior Control; EI: Entrepreneurial Intentions; EB: entrepreneurial behavior; EEL: Entrepreneur Education Learning; EEI: Entrepreneur Education Inspiration; EEIR: Entrepreneur Education Incubation Resources; PEM: Perceived Entrepreneurial Motivators; PEB: Perceived Entrepreneurial Barriers

Table 4.16 also depicts the statistics for reliability of the control group where the squared variance for each measure is lower than the average variance extracted by the indicators measuring those variables thus showing adequate discriminate validity. As a whole, the model indicated significantly convergent validity and discriminant validity.

Table 4.18: Discriminant validity (correlation among the construct)

	1	2	3	4
Attit_towards_entre	**0.73**			
Subjec_Norms	.393**	**0.76**		
Per_Beh_cont	.351**	.707**	**0.75**	
Ent_Intentions	.361**	.711**	.602**	**0.74**

Note: *Values in the diagonal (bold) represent the square root of the Average Variance Extracted and the off-diagonals represent the correlation*

Table 4.18 also provides the means, standard deviations and correlations between the measures. The statistics showed that correlation between the constructs was significant and in the line of predicted directions. The significant correlations among the scales were determined at two levels which were p=0.05 and p=0.01. The attitude towards entrepreneurship was found to be significantly and positively correlated (P<.05) with subjective norms, perceived behaviour control and entrepreneurial intentions in the theory of planned behaviour.

As shown in Table 4.18, the squared variance for each measure was lower than the average variance extracted by the indicators measuring those variables witnessing the adequate discriminate validity. As a whole, the model indicated significantly convergent validity and discriminant validity.

4.9 Common Method Bias

Next, we conducted the Harman one factor test to investigate common method bias, since the data in this study was self-reported in nature and thus, there was a possible common method variance. Common method bias causes a serious problem when a single factor explains a major variance (Podsakoff and Organ, 1986). The un-rotated factor analysis in

(Table 5.19) showed that six factors in total explained 84.4 percent of the variance. The first factor only accounted for 38.23 percent variance.

Given that a single factor solution did not emerge and a single factor did note an account for major variance, a common method variance did not expose a serious problem (Podsakoff and Organ, 1986).

Table 4.19: Summary of Factor Analysis for Common Method Bias Test

Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	38.128	38.128	3.813	38.128	38.128	
2	1.231	12.310	50.438	1.231	12.310	50.438
3	1.013	10.134	60.572	1.013	10.134	60.572
4	.879	8.790	69.362			
5	.807	8.067	77.429			
6	.698	6.982	84.411			

4.10 Analysis and Results of Structural Model: Stage-2

Before structural equation modelling (SEM) was applied to the estimate pathways among exogenous variables and endogenous variables (Bollen, 1989), initially, the study explored the entrepreneurial difference among the two groups of university graduates, i.e. entrepreneurial graduates (students who are enrolled in the entrepreneurship education programs) and non-entrepreneurial graduates (students who study entrepreneurship as a subject in the business programs).

4.10.1 Comparison of Entrepreneurial Intentions between Actual and Control Group

To test the entrepreneurial difference between the two groups of university graduates i.e. entrepreneurial graduates and non-entrepreneurial graduates, an independent-sample t-test was conducted and the results in Table 4.20 revealed a significance difference among the entrepreneurial intentions *(t= -30.394; p= 0.00)*. Further, the antecedence of the entrepreneurial intentions such as subjective norms, attitudes towards entrepreneurship and perceived behaviour control were compared among the two groups. The statistics indicated a significant difference with respect to subjective norms, perceived entrepreneurial control and entrepreneurial intentions between entrepreneurial and non-entrepreneurial graduates *(t=-2.27; p=0.024), (t=-3.2; p=0.001) and (t=-30.394; p=0.000)*. However, the result of the t-test indicated an insignificant difference related to attitudes *(t=0.647; p=0.518)* among the two groups.

Table 4.20: Independent Sample t-Test; Entrepreneurial intentions comparison among the two groups

Variables	T-Value	Sig	Hypothesis H2
Attitude towards entrepreneurship	0.647	0.518	Supported
Subject Norms	-2.27	0.024	
Perceived Behavioural Control	-3.2	0.001	
Entrepreneurial Intentions	-30.394	0	

The entrepreneurial difference between the two groups was further investigated although linear regression and the results in Table 4.21 depicted beta value, significant relation and R square for both entrepreneurial and non-entrepreneurial graduates. The value for

entrepreneurial graduates confirmed the importance of those programs to the entrepreneurial graduates.

Table 4.21: Regression Models of Attitude upon Intentions of Actual Groups and Control Groups

	Intentions (Model actual group) Standardized Coefficients	**Intentions (Model actual group) Standardized Coefficients**	**Hypothesis H2**
Attitude towards entrepreneurship	.113*	.081*	
Subject Norms	0.006	.546**	
Perceived Behavioural Control	.321**	.187**	
R Square	.139**	.530**	Supported

The results in Table 4.21 shows a significant and positive relationship between attitude towards entrepreneurship ($\beta = 0.113$, $p<0.001$) and perceived behaviour control ($\beta = 0.0.321$, $p<0.001$) with entrepreneurial intentions and an insignificant relationship between subjective norms ($\beta = 0.006$, $p<0.933$) with entrepreneurial intentions as reported by entrepreneurial graduates. On the other hand, all the antecedences such as attitude towards entrepreneurship, subjective norms and perceived behaviour control indicated significant and positive relationship ($\beta = 0.081$, $p<0.001$), ($\beta = 0.546$, $p<0.001$) and ($\beta = 0.187$, $p<0.001$) with entrepreneurial intentions for non-entrepreneurial graduates. Thus, the low R square value for the model of entrepreneurial graduates further explained and confirmed the importance of entrepreneurship education programs in developing entrepreneurial attitude and intentions.

The empirical results in Table 4.21, reports that students graduating from entrepreneurship education programs had lower entrepreneurial intentions than students graduating from general management programs. This result was unexpected, and appears to contradict the results of empirical studies that show that entrepreneurial education is a successful approach in developing entrepreneurial intention (Kolvereid, 1996b; Kautonen, Van Gelderen, & Tornikoski, 2013; Tkachev & Kolvereid, 1999). The result indicates that business graduates who do not receive this specialized education rely primarily on the opinions of others. In the currently unstable political and business environment of Pakistan, this leads graduating entrepreneurship education students to be more wary, indeed more realistic, than graduating business students about starting a new business.

From the above results, whereby it is observed that the entrepreneurship education programs is considered important, we further analyzed the role and benefits of entrepreneurship education programs on the antecedence of entrepreneurial intentions using SEM- AMOS 18.0.

4.11 Analysis and Results of Structural Model

In this section, the structural equation modelling (SEM) was employed as it facilitated an estimation of pathways among exogenous variables and endogenous variables (Bollen, 1989). SEM is a technique that provides the most appropriate and efficient estimation method in estimating a series of separate multiple regression equation estimated simultaneously (Hair et al, 2006).

Generally, in a structural model, exogenous variables have no single-headed arrow pointing toward them although all the exogenous constructs need to be correlated in the model while the correlations are not hypothesized (Kline, 2005). On the other hand, endogenous variables have several arrows (based on the hypothesis in the study) leading to them that show a causal relationship or path between exogenous variables and endogenous variables. The error term (random error) is represented by 'r' which is caused by the measurement of constructs whereas the residual errors in the structural model are represented by 'z' resulting from random errors. The values of the path connections have a single-headed arrow representing the standardized regression beta weights. In addition, one can see the values (see Figure 4.3) on the top of the boxes which showed the variance estimated and the correlation values which can be seen next to the double arrows connecting exogenous variables with each other.

In the structural measurement model, the overall model fit indicated validated consistency of the theoretical model with the estimated model which was based on the observed values (Diamantopoulos and Siguaw, 2000; Hair et al., 2006). Several methods were suggested to test the overall model fit. However, a single method alone is unable to provide an absolute assurance of model fit. Kline (1998, p.130) recommended at least four tests such as chi-square, GFI, NFI, or CFI, NNFI and SRMR. However, the model fit indices: chi-square ($\chi 2$), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI) and Root Mean Square Error Approximation (RMSEA) are the most frequently used in the literature to assure the overall model fit.

This research established sixteen hypotheses in order to answer the research questions addressed in Chapter One. The hypotheses were grouped into three major categories, guided by research questions and theoretical model (see Table 4.22) and illustrated in Figure 4.2 in order to test: 1) Antecedents of Entrepreneurial Intentions; 2) Exogenous factor (Entrepreneurship education) and 3) the moderating role of perceived environmental and contextual motivator and barriers.

Table 4.22 List of study hypothesis

Hypothesis		Hypothesis related to Research Questions
Antecedents of Entrepreneurial Intentions		
H1a	The stronger the entrepreneurial attitude with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	**Q1**
H1b	The stronger the subjective norms with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	**Q1**
H1c	The stronger the perceived behavioural control with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	**Q1**
H1d	Subjective norms has a positive impact on the attitude towards entrepreneurship	**Q1**
H1e	Subjective norms has a positive impact on the perceived behaviour control in student's entrepreneurial behaviour to start his/her own business than entrepreneurial intentions alone.	**Q1**
H1g	The stronger the intention to become an entrepreneur, the more likely the individual will start his or her own business	**Q1**
Exogenous Factors		
Entrepreneurship Education Programs		
H2	Participation in entrepreneurship education programs will positively affect the entrepreneurial intentions of the student	**Q2**
H2a	The higher the learning from the entrepreneurship education program, the higher will be the entrepreneurial attitude to become an entrepreneur	**Q2**
H2b	The higher the learning from entrepreneurship education program, the higher will be the subjective norms to become an entrepreneur	**Q2**
H2c	The higher the learning from entrepreneurship education program, the higher will be the perceived behavioural control to become an entrepreneur	**Q2**
H2d	The higher the inspiration from entrepreneurship education program, the higher will be the entrepreneurial attitude to become an	**Q2**

entrepreneur

H2e	The higher the inspiration from entrepreneurship education program, the higher will be the subjective norms to become an entrepreneur	**Q2**
H2f	The higher the inspiration from entrepreneurship education program, the higher will be the perceived behavioural control to become an entrepreneur	**Q2**
H2g	The higher the utilization of incubation resources, the higher will be the entrepreneurial attitude to become an entrepreneur	**Q2**
H2h	The higher the utilization of incubation resources, the higher will be the perceived behavioural control to become an entrepreneur	**Q2**
H2i	The higher the utilization of incubation resources, the higher will be the perceived behavioural control to become an entrepreneur	**Q2**
Contextual Factors		
The moderating effect of perceived entrepreneurial motivators and barriers		
H3a	The stronger the individuals' perceptions that the barriers to starting a new venture are insurmountable, the less likely they are to act on their intentions to become entrepreneurs.	**Q3**
H3b	The more favourable the individuals perceive contextual factors to be to founding a new venture, the more likely they are to act on becoming an entrepreneur	**Q3**

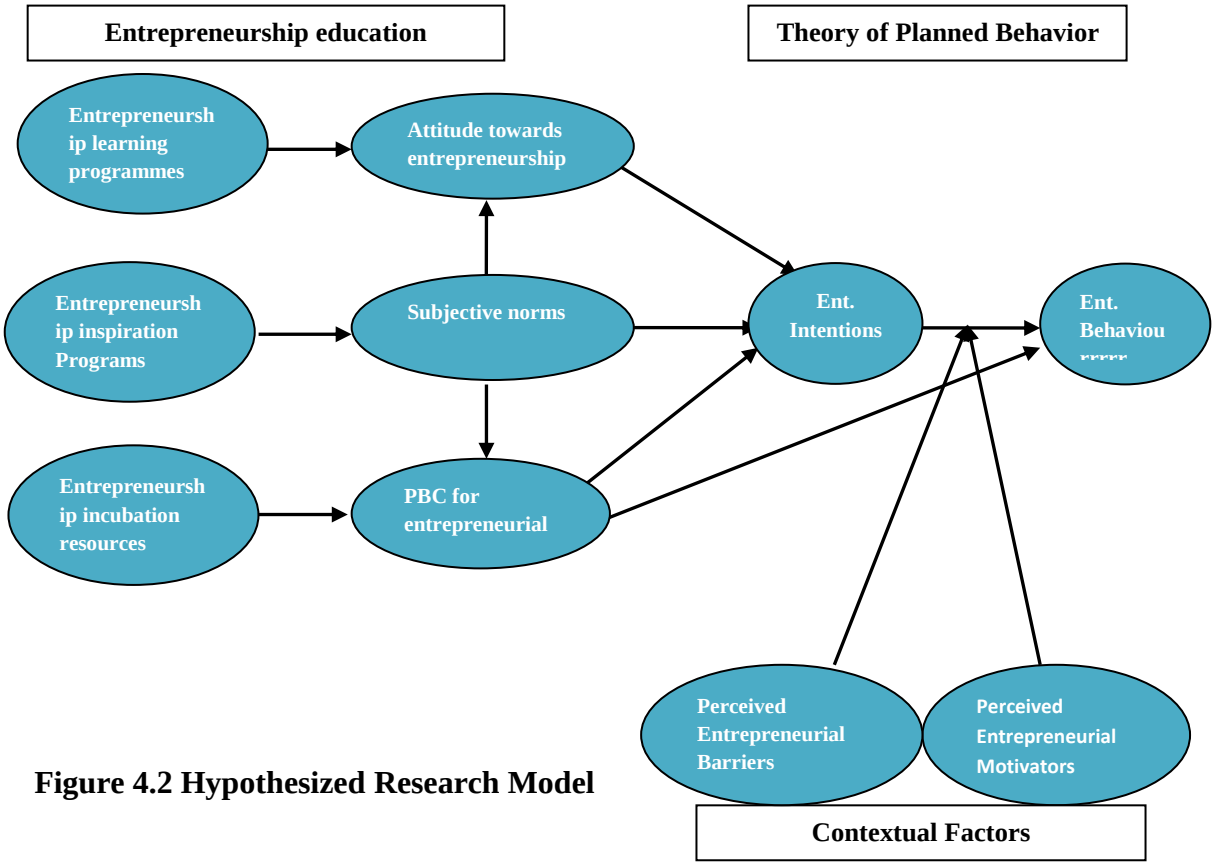


Figure 4.2 Hypothesized Research Model

To confirm that the structural model fitted the data, the structural model was evaluated in terms of goodness of fit. Achieving a good fit to the sample of study indeed provides significant support to the hypothesized model (Cunningham, 2008a). Further, the proposed hypothesis was examined using study parameter estimates combined with coefficient values since the parameter estimates provided support in generating the estimated population covariance matrix for the model (Tabachnick and Fidell, 2001). The coefficient values can be achieved by dividing the variance estimates with its standard error (S.E). Further, using the estimates and t-value when the critical value (C.R) or z value is equal to or greater than 1.64 and 2.35 for a coefficient value, the parameter was statistically significant at .05 and 0.01 respectively.

4.11.1 Structural Model One- The Hypothesized Model

The analysis of the structural model was carried out to test the model fit indices for the hypothesized model as displayed in Figure 4.2. There are sixteen hypothesized paths of antecedence of entrepreneurial intentions and entrepreneurship education.

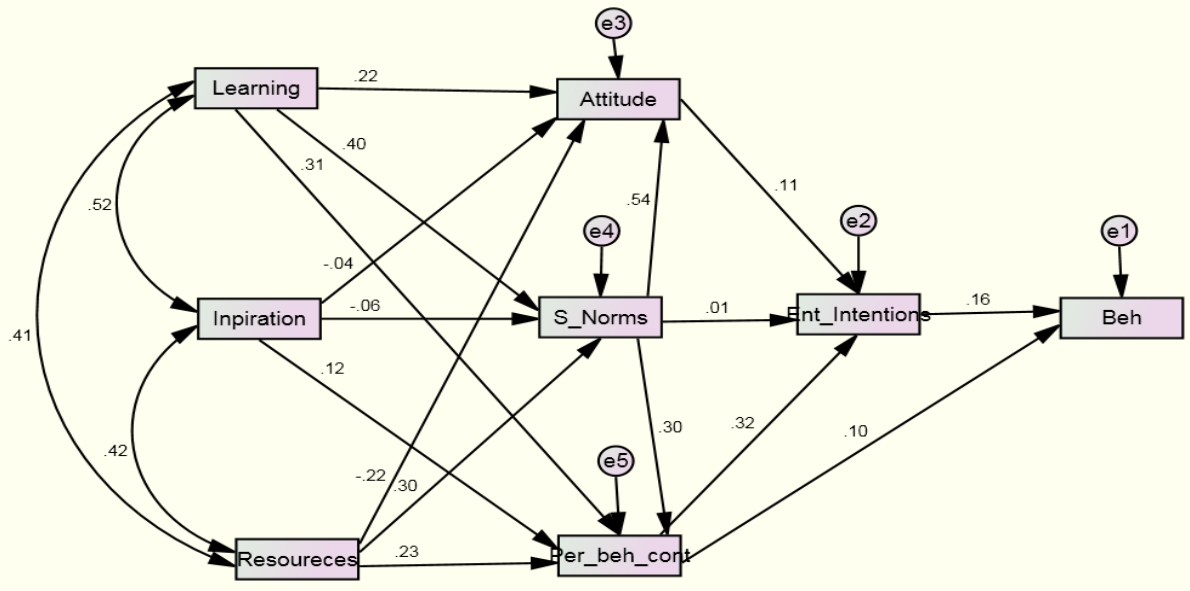


Figure 4.3: Structural Model 1- The Hypothesized Model

An assessment of the goodness of the fit indicated a poor model fit to the data (Table 4.23) as a poor model fitted to the data is expected when the sample size of the study is large (Bagozzi, Yi, and Phillips, 1991) and bearing insignificant paths. The estimates of the Structural Model 1 showed the chi square value was significant ($\chi 2$= 10.106, df= 9, p=.000). The rest of the model fit indices were such that the GFI = .943, AGFI=.837, NFI=.900, CFI=.907, TLI=.709, RMR= 0.04 and RMSEA = .090 and ECVI = .559.

Table 4.23: Structural Model 1

Model Fit Indicators*	***χ2***	***df***	***sig***	***GFI***	***AGFI***	***NFI***	***TLI***	***CFI***	***RMSEA***	***RMR***
	10.106	9	0	0.943	0.837	0.9	0.709	0.907	0.112	0.04

In order to test the significant level of hypothesis developed in Chapter Two, the coefficient parameters were then examined. The results in Table 4.24 illustrates that H2d, H2e, and H1b were found insignificant. However, the remaining thirteen proposed hypothesis were statistically significant at the levels of *0.001, 0.01 and 0.05.*

Table 4.24: Summary of the structural model

Hypothesis Paths			**Standardized Estimates**	**Z-Value**	**P Value**	**Supported**
S_Norms	<---	Learning	0.401	7.432	0.00***	Yes
S_Norms	<---	Resources	0.300	5.924	0.00***	Yes
S_Norms	<---	Inspiration	-0.059	-1.096	0.273	No
Attitude	<---	Learning	0.221	3.91	0.00***	Yes
Per_beh_cont	<---	Learning	0.311	6.593	0.00***	Yes
Per_beh_cont	<---	Inspiration	0.116	2.626	0.00 ***	Yes
Per_beh_cont	<---	Resources	0.229	5.313	0.00***	Yes
Attitude	<---	S_Norms	0.537	10.257	0.00***	Yes
Per_beh_cont	<---	S_Norms	0.302	6.905	0.00***	Yes
Attitude	<---	Inspiration	-0.038	-0.719	0.472	No

Attitude	<---	Resources	0.216	4.177	0.00***	Yes
Ent_Intentions	<---	Attitude	0.112	1.900	0.057**	Yes
Ent_Intentions	<---	Per_beh_cont	0.321	5.213	0.00***	Yes
Ent_Intentions	<---	S_Norms	0.006	0.086	0.931	No
Beh	<---	Ent_Intentions	0.156	2.776	0.005***	Yes
Beh	<---	Per_beh_cont	0.101	1.794	0.073**	Yes

Note: *p<0.05, **p<0.01, ***p<0.001, * N=348.

The assessment of Structural Model 1 manifested poor model fit indices and therefore was required to look for approaches and techniques in order to achieve the most appropriate results. Among the approaches, Byrne (2001) recommended removing the insignificant paths from the structural model. Therefore, the removing procedure was carried out and the insignificant paths were deleted in succession as this procedure was recommended with the understanding that deleting the insignificant paths would possibly change the modification indices, structural coefficients and significant levels.

4.11.2 Structural Model Two

The initial results of the structural model revealed that three paths were insignificant and required to be deleted. Therefore, the deletion process was carried out and the first insignificant path (H1b) between the subjective norms and entrepreneurial intention was deleted as this path displayed the lowest β coefficient (β= .006, p=.931). However, on deletion of the first insignificant path, an examination of the model fit indices and coefficient parameter estimates indicated no major changes in the results. The chi square value was $\chi 2$= 285.743, df= 128, p=.000, Bollen-Stine bootstrap=.002. In addition, the GFI = .953, AGFI=.938, NFI=.972, CFI=.984, TLI=.981, RMSEA = .043 and ECVI = .557. As

a result, the data process was continued by deleting the remaining two insignificant paths .i.e. H2d and H2e.

The deleting processes continued with the removing of the remaining two insignificant paths, H2d, between the inspiration benefits and attitude (β= -0.038, p=.472) and H2e between the inspiration benefits and subjective norms (β= -0.059, p=.273). Upon removing these two insignificant paths, the results of the model fit indices revealed that the model fitted the data adequately (χ 2= 6.246, df= 18, p=.000,). The GFI=.929, AGFI=.866, NFI=.906, CFI=.905, TLI=.892, REM= 0.02 and RMSEA =.061 (Table-4.25). Thus, the results of Structural Model Two affirmed a better model fit to the sample of the study.

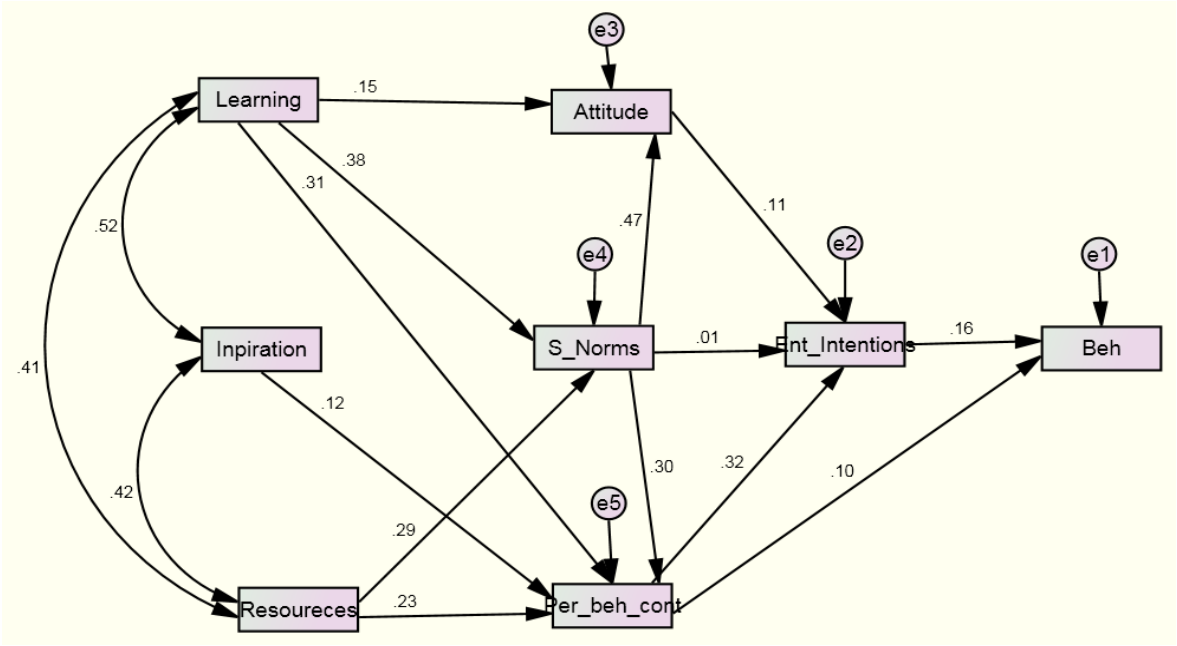


Figure 4.4: Structural Model 2

Table 4.25: Hypotheses - Structural Model 2

*Model Fit Indicators**	*χ2*	*df*	*sig*	*GFI*	*AGFI*	*NFI*	*TLI*	*CFI*	*RMSEA*	*RMR*
	6.246	18	0	0.929	0.866	0.906	0.892	0.905	0.08	0.02

4.11.3 Hypothesis Testing

The hypothesized paths developed in Chapter Three were examined in the earlier model (Figure 4.2), where three hypothesized relationships, subjective norms and entrepreneurial intentions, inspiration benefits and attitude towards entrepreneurship and inspiration benefits and attitude towards entrepreneurship were found insignificant and therefore, it was decided that they be removed in order to achieve a good model fit indices for the data.

The final structural model (Figure 4.3) contains thirteen hypotheses and was tested from the standardized estimates and t-value (critical ratio). The results in Table 4.32 indicated that the estimated values for H1a, H1c, H1d, H1e, H2a, H2b, H2c, H2f, H2g, H2h, H2i, H3a and H3b were significant at level $p< 0.001$, 0.01 and 0.05.

4.12 Moderation Effect of Environmental and Contextual Factors: Perceived entrepreneurial motivators and barriers

The moderating effect of the factors is examined when there is the probability of causing some variations in the relationship between predictor and outcomes (Holmbeck, 1997). In addition, the moderating effect is witnessed when there is a third variable impact on the level of relationship between the determinant and outcomes variables. The impact may cause the relationship to reverse in the direction and to increase or reduce the magnitude of the relationship (Baron and Kenny, 1986; Cohen, 1988; James and Brett, 1984).

The current study carries two continuous moderating variables: perceived entrepreneurial motivator and perceived entrepreneurial barriers, which are hypothesized to affect the relationship between entrepreneurial intentions and behaviour. In order to investigate the continuous impact of moderation variables in the study, the literature suggested two

different methodologies. The first method is the subsample analysis (Hair et al., 2006), generally used in identifying categorical moderating variables. The second method is the computing cross product indicator analysis (Stone-Romero and Anderson, 1994) which is considered more appropriate for continuous moderation variables. However, at the same time, the second method (computing cross product) is criticized with the justification that it produces multi-co linearity. As in this method, all the items for each predictor variable are multiplied in order to produce all permutations of cross-products (Chin, 1998). Therefore, the current study applied the subsample analysis method to investigate the moderation effect of the perceived entrepreneurial motivator and barriers.

The subsample method involved splitting the sample of moderating variables into two subsamples, generating high and low values using several different techniques. The groups of high and low values for continuous variables can be generated, either calculating the mean value of the data or taking the mode or median (Hair et al., 2006). In the current study, the mean score technique was utilized to generate the high and low values for the moderating variables (perceived entrepreneurial motivator or perceived entrepreneurial barriers). The data above the mean was defined as high perceived entrepreneurial motivators and the data below the mean was defined as low perceived entrepreneurial motivators and it was the same definition for the second moderator i.e. perceived entrepreneurial barriers. Table 4.26 illustrates that respondents whose mean score on the scale of perceived entrepreneurial motivators was higher than the average means were considered as graduates who seek high motivating environmental and contextual factors (n=159), while the respondents whose mean score was less than the average mean were considered as graduates who seek less motivating environmental and contextual factors

(n=189). As for perceived entrepreneurial barriers, respondents whose mean score on the scale of perceived entrepreneurial barriers was higher than the average mean were considered as graduates who perceive more hindering environmental and contextual factors (n=186), while the respondents whose mean score was less than the average mean were considered as graduates who **perceive** less hindering environmental and contextual factors (n=162).

Table 4.26: Categories of Continuous Moderating Variables

Moderating Variables	**Perceived entrepreneurial motivators**		**Perceived entrepreneurial barriers.**	
Subsample	**Low**	**High**	**Low**	**High**
N	189	159	162	186

Once the required data was prepared to run a moderation analysis, it was necessary to observe the chi square difference between the two models and that would determine whether the perceived entrepreneurial motivators or barriers had a moderating impact on the relationship between entrepreneurial intentions and entrepreneurial behaviour. The next section would provide the analysis and the results for the moderating variables of the study.

4.12.1 Moderating Effect of Perceived Entrepreneurial Motivators

In order to test the moderating effect of the perceived environmental and contextual entrepreneurial motivators and the barriers on the relationship between entrepreneurial intentions and entrepreneurial behaviour, a more recent approach "unconstrained approach" introduced by Marsh, Wen, and Hau (2004) using the AMOS was applied. The unconstrained method is considered the easiest to apply and support in order to estimate the nonlinear effects without bias (Marsh, Wen, and Hau, 2004). In addition, Bagozzi,

Baumgartner and Yi (1992) argued that in the case of continuous variables, the appropriate method was to model the moderated variable effects as multiplicative interactions compared to the multi-group analysis which benefited the retention of the whole information of the continuous variables.

Following the unconstrained approach, the model was run to investigate the moderating effect of perceived entrepreneurial motivators on the relationship between entrepreneurial intentions and entrepreneurial behaviour. The results in Table 4.27 illustrated an insignificant moderating effect of perceived entrepreneurial motivators on the relationship between entrepreneurial intentions and entrepreneurial behaviour. Since the value of chi square difference ($\Delta^{\chi 2}$) revealed an insignificant difference between the entrepreneurial graduates with a high impact of perceived entrepreneurial motivators and the low impact of perceived entrepreneurial motivators, therefore, H3a was not supported.

Table 4.27: $\Delta\chi 2$ of Perceived Entrepreneurial Motivators

	Chi-Square	**Probability**	**χ^2/df**	**$\Delta\chi 2$**
Model B	146.44	0	34	9
Model A	157.84	0	41	

4.12.2 Moderating Effect of Perceived Entrepreneurial Barriers

In order to test the moderating effect of perceived entrepreneurial barriers, the same procedure was repeated and conducted on the first moderator factor (perceived entrepreneurial motivator) and the results in Table 4.28 revealed that there was a significant moderating effect of perceived entrepreneurial barriers on the relationship between

entrepreneurial intentions and entrepreneurial behaviour. Also, the chi square value ($\Delta^{\chi 2}$) showed a significant effect between the entrepreneurial graduates with a high impact of perceived entrepreneurial barriers and a low impact of perceived entrepreneurial barriers. Therefore, H3b was supported.

Table 4.28: $\Delta\chi 2$ of Perceived Entrepreneurial Barriers

	Chi-Square	Probability	χ^2/df	$\Delta\chi 2$
Model B	157.96	0	26	12
Model A	211.622	0	34	

The findings in Table 4.29 further showed the regression path for high perceived entrepreneurial barriers ($\beta = 0.241$, $p < 0.05$) and low perceived entrepreneurial barriers ($\beta = 0.210$ $p < 0.001$) were all significant. These findings supported the findings that perceived environmental and contextual entrepreneurial barriers had a moderating effect on the relationship between entrepreneurial intentions and entrepreneurial behaviour as the regression weight (β) was significant.

Table 4.29: Hypotheses Testing on Moderating Effects of Perceived Entrepreneurial Barriers

	Hypothesis	β	S.E	C.R	P	$\Delta\chi 2$	
Intentions → Behaviour							
High perceived entrepreneurial barriers	H3a	0.241	0.05	4.84	***	12	Supported
Low perceived entrepreneurial barriers		0.21	0.043	2.981	***		

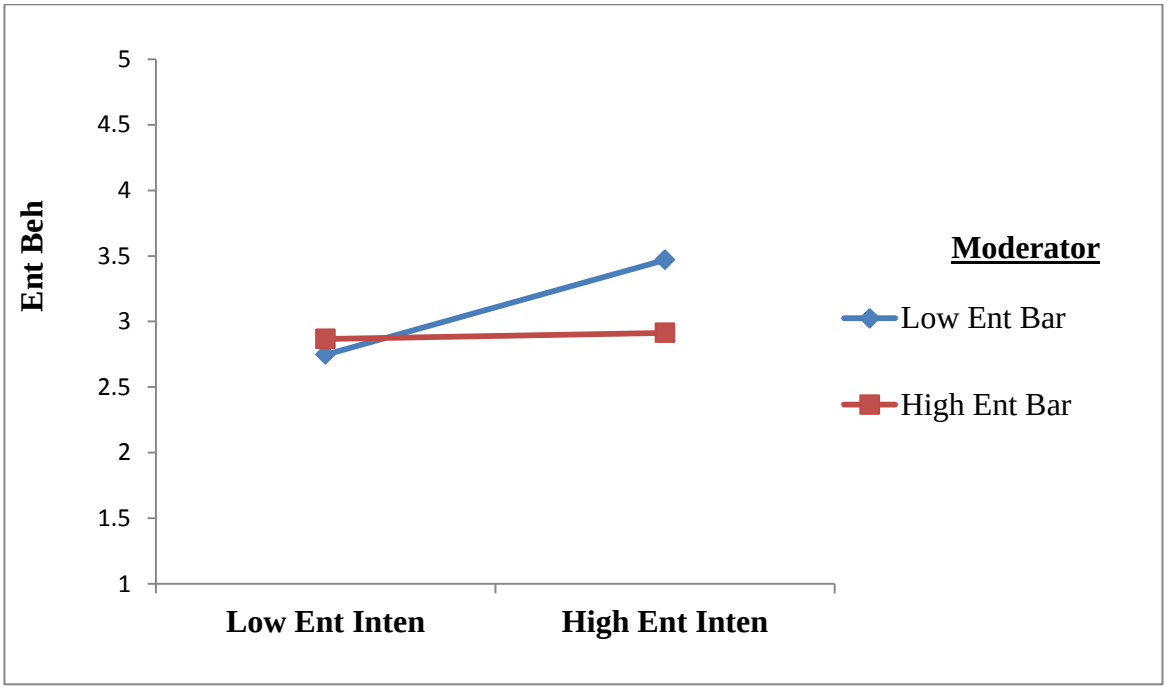
Most importantly, the regression analysis results of the SEM revealed statistically the significant relationship between entrepreneurial intentions and entrepreneurial behaviour, with a variance explained (R^2) by entrepreneurial intention that increased from 19.5% to 22.2%. When the perceived environmental and contextual entrepreneurial barriers were added to propose and test the entrepreneurial model as a moderator, the variance explained

from entrepreneurial behaviour increased by 3.3%. These findings revealed that contextual and environmental barriers are considered important factors in the process of venture evaluation. In addition, the significant moderating effect of perceived entrepreneurial barriers suggested that any individuals or students with strong entrepreneurial intentions and decisions may be discouraged and may withdraw from any business creation decision, if he/she perceives a high and strong environment with contextual hindering factors. All the efforts made during these programs will end with no results.

4.12.3 Post Hoc Analysis on the impact of continued moderation variables

The significant moderation effect of perceived entrepreneurial barriers between entrepreneurial intentions and entrepreneurial behaviour is further investigated using MODROBE application (Figure 4.4) in order to mitigate and verify the effects of these continuous variables. Generally, MODROBE is used in inquiring the moderating effect through graphical illustrations in SPSS.

The moderating effects of perceived entrepreneurial barriers were graphically tested. The MODPROBE generates the conditional effects or simple slopes for entrepreneurial intentions at values of perceived entrepreneurial motivators equal to the sample mean, which represents a moderate impact of perceived entrepreneurial barriers. Based on the graphical representation in Figure 4.4, there was a positive relationship between entrepreneurial intentions and entrepreneurial behaviour. However, the rate of perceived entrepreneurial barriers was greater for high perceived entrepreneurial barriers compared to low perceived entrepreneurial barriers, thus perceived entrepreneurial barriers was found to constrain or moderate the relationship between entrepreneurial intentions and behaviours.



Ent Bar dampens the positive relationship between Ent Inten and Ent Beh

Figure 4.4: *Moderating effect of perceived entrepreneurial barriers on the relationship between entrepreneurial intentions and entrepreneurial behaviour*

4.12.4 Robustness of Moderating Effect of Environmental and Contextual Factors

In a further effort to extend the body of knowledge and test the robustness of the moderation effect of environmental and contextual factors (perceived entrepreneurial motivators and barriers), hierarchical regression techniques were employed (Cohen and Cohen, 1983). For the purpose of investigating the moderating effect using hierarchical regression, all the predictors were required to be standardized to mitigate the issue of multi-collinerearity (Aiken and West, 1991).

To establish and confirm the moderating effect of the factors mentioned in the above paragraph, a three-step of hierarchical regression was conducted. In the first step, the effect

of entrepreneurial intentions (independent variable) was regressed. In the second step, the effect of perceived entrepreneurial barriers (moderator variable) was used to measure whether the moderator had a significant effect statistically on the entrepreneurial behaviour (dependent variable). Finally, in the third step, interaction terms (entrepreneurial intentions and perceived entrepreneurial barriers) were used to show the additional variance explained.

Based on the hierarchical regression method, the moderator effect was observed when the final step (step three) revealed a significant R^2 increase with the significant F-change value. The beta (β) was based to investigate the effect of each predictor variable.

The results in Table 4.30 indicate a moderating effect of perceived entrepreneurial motivators on the relationship between entrepreneurial intentions and entrepreneurial behaviours. The statistics showed statistically insignificant *(β = 0.08, t-value= -3.849, p<.001)* moderating effect of perceived entrepreneurial motivators on the relationship between entrepreneurial intentions and entrepreneurial behaviours.

Table 4.30: Moderating effect of Perceived Entrepreneurial Motivators on the relationship B/W Intentions and Behaviours

Steps	**Variables**	**Standardized Coefficients β**			**Hypothesis 3a**
		Model 1	**Model 2**	**Model 3**	
1	Entrepreneurial Intentions (EI)	0.192**	0.166**	.157**	Not Supported
2	Perceived Entrepreneurial Motivators (PEM)		.122**	.111**	
3	EN * PEM			0.08	
R^2		0.192	0.226	0.239	
∆R2		0.026	0.009	0.011	

Here, on the other hand, the results in Table 4.31 showed a statistically significant moderating effect of perceived entrepreneurial barriers on the relationship between entrepreneurial intentions and entrepreneurial behaviours *(β = -0.690, t-value= 2.059, p<.001).* Thus, hypothesis 3b is supported. Both statistical techniques revealed the same results while investigating the moderating effect of environmental and contextual factors on the relationship between entrepreneurial intentions and entrepreneurial behaviour.

Table 4.31: Moderating effect of Perceived Entrepreneurial Barriers on the relationship B/W Intentions and Behaviour

Step	**Variables**	**Standardized Coefficients β**			**Hypothesis 3b**
		Model 1	**Model 2**	**Model 3**	
1	Entrepreneurial Intentions (EI)	0.192**	0.194**	0.735**	Supported
2	Perceived Entrepreneurial Barriers (PEM)		-.109**	0.295	
3	EN * PEB			-.690**	
R^2		0.192	0.221	0.247	
∆R2		0.037	0.012	0.012	

4.13 Chapter Summary

In this research, data analysis was carried out in two phases. The first phase was concerned with a preliminary analysis of the data. This process is important in order to ensure that the data meets the basic assumptions in using SEM. In general, the characteristics of the data met the univariate and multivariate distributional assumptions underlying the SEM testing of the research hypotheses.

In the second phase, the two stages of SEM were applied. The first stage involved the establishment of the measurement models for each of the latent variables. Having confirmed to the uni-dimensionality, reliability and validity, the next action was to perform the second stage of SEM (structural model) to test the hypotheses developed in Chapter Three.

In the second stage, the initial hypothesized model was tested and the insignificant paths removed in an attempt to achieve the best fit model. After achieving the best parsimonious model, hypotheses tests were carried out. The hypotheses tests were separated into three parts. The first part was to test the antecedents and outcomes of entrepreneurial intentions and actions. The second part was to test the effect of exogenous factors (entrepreneurship education) on the antecedents of entrepreneurial intentions and actions. All hypothesized relationships in both parts were analyzed using AMOS.

In the next part of the current chapter, the moderating effect of perceived entrepreneurial motivators and barriers was tested on the relationship between entrepreneurial intentions and actions moral disengagement. Here, the first approach was to utilize an approach suggested by Marsh and his colleague (2004) using AMOS. In addition, this research provided an alternative approach using the hierarchical regression as this approach claimed to be the most appropriate approach to test the moderating effect (Baron and Kenny, 1986).

Finally, an independent sample t-test and linear regression were carried out to test and evaluate the entrepreneurial intentions in comparison between the entrepreneurial graduates and non-entrepreneurial graduates.

CHAPTER 5

DISCUSSIONS, IMPLICATIONS AND CONCLUSIONS

5.1 Introduction

This chapter summarizes the findings of the empirical investigations discussed in Chapter Four as well as presents the implications and conclusions of the study. The chapter is organized in the following sections. Section 5.2 provides an overview of the research conducted. Section three interprets and discusses the findings. The fourth section consists of theoretical, policy and managerial implications. Next, Section five highlights the limitations of this study and finally, Section six presents' guidelines for future research. A brief conclusion in Section seven ends Chapter Five.

5.2 An Overview of the Study

The major theme which is concerned with venture creation in the entrepreneurship literature is seemingly complex and involves a variety of interrelated and interconnect factors (Nabi, Holden, & Walmsley, 2006). Primarily, the focus is on several psychological factors including the personality traits of individuals, demographical characteristics and later extending to educational, economic and institution factors. As a result, this multi-thematic phenomenon urges numerous researchers and scholars from different academic streams to explore the prominent factors important for venture creation and suggest different and conflicting conclusions.

Previously, the evaluation and development of entrepreneurial intentions and actions were linked to several factors including psychological and demographical factors such as

personal characteristics, personal history and social contexts in determining the individuals' choices and preferences with respect to their entrepreneurial status (Dyer, 1994; Robinson, Stimpson, Huefner, & Hunt, 1991). A great number of researches came up with different assumptions and explored a variety of factors that played an important role in the entrepreneurship development. Primarily, early researchers explored personal background factors and related them to the emergence of business. However, research based on personality theory posed a variety of problems such as an inappropriate application of the theory to entrepreneurship context, poor instrument validity and a failure to incorporate the environmental influence in the theory (Robinson et al., 1991). Thus, unsatisfactory results from the personality theory directed the research society to demographic factors in investigating the relations between an individual and business creation.

Next, the demographic models hypothesized that people with similar backgrounds contained similar underlying characteristics. The demographic variables investigated under this approach included family background and experiences such as age, gender, birth order, role models, marital status, education level, previous work experience and work habits (Cohen, 1980; Collins & Moore, 1964; Gasse, 1982; Hisrich, 1986; Jacobowitz & Vidler, 1982; Sexton & Auken, 1982). Although research designed to understand how personality and demographic characteristics are associated with entrepreneurship has significantly contributed to understanding the emergence of business ventures, the findings are still considered vague and questionable; personality theory and demographic approaches cannot adequately account for entrepreneurship (Gartner, 1989; Shane & Venkataraman, 2000). Therefore, in this study, a more recent research on the entrepreneurial intentions was

reviewed which focused on the contribution of entrepreneurial intentions (EI) to new venture creation.

According to theories that focused on entrepreneurial intention, intention is the best element in understanding the firm creation process (Bird, 1988) Kirby & Ibrahim, 2011). In this sense, the formation of an entrepreneurial intention is a central element in the establishment and sometimes long process of venture creation (Lee & Wong, 2004; Fayolle, Gailly, & Lassas-Clerc, 2006; Lars Kolvereid, 1996). Thus, the factor which plays a critical role in identifying and describing the association of an individual with a business creation is the entrepreneurial intention of an individual (Bird, 1988; Krueger & Carsrud, 1993).

Two models are at the core of the entrepreneurial literature in predicting intentions. Both models propose that the formation of intentions leads to actual behaviour and action. However, there are some fundamental differences in explaining the evolution of intentions and the mechanisms by which intentions are translated into behaviours. E.g. the entrepreneurial event model proposed by Shapero & Sokol (1982) is specific to entrepreneurship and explains EI by means of perceived desirability, perceived feasibility and propensity to act. The second model Theory of Planned Behaviour (TPB) is a generic model of human behaviour proposed by (Ajzen, 1988, 1991). The three antecedents which explain intentions in this model are attitudes, subjective norms and perceived behavioural control (PBC).

To date, scholars have recognized several determinants of individuals' entrepreneurial intentions (EI), including their traits and personalities, e.g., the big five (Ciavarella et al., 2004), risk-taking propensity (Zhao et al., 2005), self-efficacy (Zhao et al., 2005), exposure to entrepreneurial activity (Krueger, 1993; Matthews and Moser, 1996), and gender (Eccles, 1994; Wilson et al., 2007; Marlow and McAdam, 2011). Amongst the determinants of EI, entrepreneurship education appears to be an important antecedent as well, as evidence in previous studies shows that there is a clear linkage between entrepreneurship education and entrepreneurial activities (Galloway and Brown, 2002; Gorman et al., 1997; Henderson and Robertson, 2000). Thus, higher education institutions are asked to play a fundamental role in developing an entrepreneurial approach among the graduates. Apart from their traditional academic activities and teaching, the higher educational institutions are challenged to equip their students with proper and appropriate motivation, knowledge, skills and capabilities for self-employment and this task is considered to be the third mission of universities (Gibb, 1996; Etzkowitz et al., 2000; Johannisson et al., 1998). Hence, entrepreneurship education is introduced in the universities all around the world.

The three major objectives of the current study was: 1) To examine the effects of entrepreneurship education programmes on the entrepreneurial attitude and intentions of university graduates, 2) To explore the effects of each program benefits that raise the attitude and intentions of university graduates, 3) To investigate the moderating effect of perceived contextual and environmental motivators and barriers on the relationship between entrepreneurial intentions and behaviours.

In view of these objectives, a theoretical model was developed based on an empirically validated theory, "Theory of planned behaviour". Entrepreneurship education was proposed and hypothesized as an exogenous factor of entrepreneurial intentions and actions whereas environmental and contextual perceived entrepreneurial motivators and barriers posited to moderate the relationship between entrepreneurial intentions and actions.

The theoretical model then guided the research to test seventeen hypotheses in an attempt to answer the following research questions:

1. To examine the effects of entrepreneurship education programmes on the entrepreneurial attitude and intentions of university graduates.

2. To assess the effects of each programme benefits that raises the entrepreneurial attitude and intentions of university graduates.

3. To investigate the moderating effect of perceived contextual and environmental motivators and barriers on the relationship between entrepreneurial intentions and behaviours.

5.3 Discussion of the Findings

Policy makers and practitioners in Pakistan seek to promote the entrepreneurial attitude among the university graduates with the hope of accelerating business start- ups, innovation and increasing the supply of entrepreneurs in local economies. Empirical research supports a positive link of entrepreneurship activity and economic development (Van Praag and Versloot, 2007). Therefore, numerous researches focused on exploring the prominent and constructive factors and components of entrepreneurship development. In the process, one most widely-studied question is: What makes an entrepreneur? Specifically, what are the

basic factors that lead an individual to desire to become an entrepreneur, i.e., that determines an individual's entrepreneurial intention (EI) (See Bird, 1988 and Boyd & Vozikis, 1994). In search of the answer to the particular question, different sources and drivers of entrepreneurship development are examined (discussed in Chapter 2 and in the first section of this chapter), where motivation is pursued in higher education institutions and therefore, universities were asked to play a new role in the society i.e. in pursuing the goal of entrepreneurial development approach among the graduates (Nabi & Holden, 2008). As a result, a wide range of entrepreneurship education efforts have been initiated (Fayolle, 2000; Li´ Nán, 2004; Kuratko, 2005) and entrepreneurship has become a part of the school and university curriculum in many countries around the world.

Although entrepreneurship education is recognized as important (Donckels, 1991; Crant, 1996; Robinson and Sexton, 1994; Gorman et al., 1997; Zhao et al., 2005), and various studies were attempted to investigate the impact and role of these programmes, there have been relatively few empirical studies of its impact (Krueger and Brazeal, 1994; Peterman and Kennedy, 2003) and as a result, a need to investigate the impact of these programmes to provide guidelines to the practitioners and university administrators that may help them in developing an effective strategy to promote entrepreneurship in the society and allocate the required resources accordingly.

The importance of entrepreneurship education in entrepreneurship development and the role of environmental and institutional factors are the major motivations of this study. This motivation encourages the scholar to investigate the effects of entrepreneurship education programmes and perceived entrepreneurial motivators and barriers in a developing country

like Pakistan. The results derived in Chapter Four provide interesting and empirically encouraging evidence to entrepreneurship education programmes in developing the entrepreneurial attitude of the university graduates (discussed in detail in the next section of this chapter). In addition, this study points out one important aspect in the process of entrepreneurial intention development i.e. the moderating effect of environmental and contextual factors which may escalate the positive effects of entrepreneurship education programmes (in the presence of high entrepreneurial and contextual motivators and low barriers) or wiped out (in the presence of high entrepreneurial and contextual barriers and low motivators). The following section provides a discussion of the results of antecedents and the outcomes of entrepreneurial intentions and actions, exogenous factors (entrepreneurship education programmes benefits) and the moderating role of environmental and contextual motivators and barriers.

5.4 Entrepreneurial difference between Entrepreneurial Graduates and Non Entrepreneurial Graduates

Most of the universities in Pakistan offer business administration courses both at undergraduate and postgraduate level. Generally, these degrees are traditional in nature, i.e. the students are taught entrepreneurship and the universities' objective is to produce good managers to serve others; however, there is a growing disappointment with the traditional occupations in large companies. Consequently, there is an increasing desire of the business students to be self-employed (Kolvereid, 1996). Thus, business students were invited to participate in the study.

The primary reason in involving the business students was to compare their entrepreneurial intentions among the entrepreneurial graduates and non-entrepreneurial graduates and

investigate the importance of entrepreneurship education in developing entrepreneurial attitude and intentions of entrepreneurial graduates.

Table 5.1: Independent Sample t-test; comparison of entrepreneurial intentions among the two groups

Variables	Entrepren-eurship Students		Non-Entrepren-eurship Students				
	M	**SD**	**M**	**SD**	**D**	***t***	***p***
Attitude towards Entrepreneurship	4.25	0.45	4.23	0.36	0.02	0.64	0.3
Subjective Norm	3.17	0.8	3.32	0.86	-0.2	-2.3	0
Perceived Behavioural Control	3.53	0.68	3.69	0.63	-0.2	-3.2	0
Entrepreneurial Intention	2.49	0.65	3.96	0.61	-1.5	-30	0

In order to empirically investigate the differences in entrepreneurial intentions between the graduates who take up entrepreneurship programmes and those who study entrepreneurship as a single subject in their particular programmes, one hypothesis is developed and the results retrieved in Chapter Four are depicted in Table 5.1.

The results of an independent sample t-test revealed a significant difference between two groups on the subjective norms (t=1.231; p=0.221), perceived behaviour control (t=1.231; p=0.221) and entrepreneurial intentions (t=1.231; p=0.221), thus H2 is supported. The results of linear regression indicated low coefficient values for those students who participated in the entrepreneurship education programmes compared to those who did not attend these programmes. This finding, while preliminary, suggests that entrepreneurship education programmes are important in motivating and finding the entrepreneurship intentions of the university graduates.

We found that students graduating from entrepreneurship education programs had lower entrepreneurial intentions than students graduating from general management programs. This result was unexpected, and appears to contradict the results of empirical studies that show that entrepreneurial education is a successful approach to developing entrepreneurial intention (Kolvereid, 1996b; Kautonen, Van Gelderen, & Tornikoski, 2013; Krueger Jr, Reilly, & Carsrud, 2000; Tkachev & Kolvereid, 1999). On the other hand, the prior studies were not comparative, so did not permit comparison with a control group as in this study.

By employing a control group, we have been able to reach a deeper and more satisfying conclusion. The two main differences between entrepreneurship and general business graduates are the relative effects of social pressure and perceived control of entrepreneurial actions. The general business graduates are strongly influenced by social pressure as they form their entrepreneurial intentions, while the entrepreneurship graduates, who feel only a little less social pressure, are able to reach their own decisions, based primarily on their understanding of their perceived control in an uncertain environment. Entrepreneurship education provides graduates with the knowledge, skills and experiences that enable them to evaluate their ability to take advantage of entrepreneurial opportunities. Business graduates who do receive this specialized education rely primarily, on the other hand, on the opinions of others. In the currently unstable political and business environment of Pakistan, this leads graduating entrepreneurship education students to be more wary, indeed more realistic, than graduating business students about starting a new business.

5.5 Antecedents and outcomes of entrepreneurial intentions and actions

The theory of planned behaviour is a common approach considered useful in the entrepreneurial research (Bae, Qian, Miao, & Fiet, 2014; Kautonen, Gelderen, & Fink, 2013; Kautonen, Van Gelderen, & Tornikoski, 2013; Liñán, 2008) and is postulated to explain human intentions and behaviour. Accordingly, this theory is applied in order to investigate the entrepreneurial intentions and actions of the university graduates in Pakistan. In reviewing the literature, the researcher takes into account the different terminology used to describe entrepreneurial intentions and consequent behaviours in the different fields of study over many years. Thus, the current study includes models and studies of the antecedents of "self-employment" whereby it is clear that the self-employment described requires the development of a new venture (Kolvereid, 1996a; Krueger et al., 2000; Luthje and Franke, 2003). Similarly, this study includes models and studies of the antecedents of "business start-up" where the entrepreneur (distinct from macro-level institutional factors) is the focal point of the model. Nonetheless, as much as possible, this study preserves the language of the original work. When summarizing or synthesizing, we adopt more generic terms, specifically "starting a business" and "new venture creation".

Table 5.2: Hypotheses and Summary of Results for the Antecedents and Outcomes

Hypothesis		Path Coefficient	Supported
Antecedents of Entrepreneurial Intentions			
H1a	The stronger the entrepreneurial attitude with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	0.112	Yes
H1b	The stronger the subjective norms with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	0.860	No
H1c	The stronger the perceived behavioural control with regards to become an entrepreneur, the stronger is the student's intention to start his/her own business	0.321	Yes
H1d	Subjective norms have a positive impact on the	0.537	Yes

	attitude towards entrepreneurship		
H1e	Subjective norms have a positive impact on the perceived behaviour control	0.302	Yes
H1f	Entrepreneurial previewed behaviour control, along with entrepreneurial intention, explains a higher proportion of the variance in student's entrepreneurial behaviour to start his/her own business than entrepreneurial intentions alone.	0.101	Yes
H1g	The stronger the intention to become an entrepreneur, the more likely the individual will start his or her own business	0.156	Yes

Seven hypotheses were developed in order to investigate the effects of antecedence of entrepreneurial intentions and actions of the graduates who went through these programmes. The results retrieved from the data analysis in Chapter Four were depicted in Table 5.2. The findings of the current study explore different aspects of the theory of planned behaviour in the context of investigating and developing entrepreneurial approach and intentions among the university graduates in the developing economies of the world.

Firstly, the results provide empirical support to the theory of planned behaviour, while indicating statistically significant association between attitudes towards entrepreneurship, perceived behaviour control with entrepreneurial intentions and also significant relationship of perceived behaviour control (PCB) and entrepreneurial intentions with entrepreneurial actions.

The paths of coefficients of attitude towards entrepreneurship *(β= .110, $p < 0.05$)* and *PBC (β= .320, $p < 0.01$)* exerted a significant impact on entrepreneurial intention. Hence, the results supported the hypothesized effects of the two antecedents on intentions, i.e. H1a and H1c. These findings were found to be consistent with prior researches which employed student samples from Norway (Kolvereid, 1996), Russia (Tkachev & Kolvereid, 1999),

USA (Krueger Jr, Reilly, & Carsrud, 2000) and some recent studies (Kautonen, Van Gelderen, et al., 2013). Another important finding and the most striking result that emerged from the data was that subjective norms were found positively and statistically associated with attitude towards entrepreneurship *(β= .0.47, $p < 0.01$)* and perceived behavior control *(β= .0.30, $p < 0.01$)*, hence, H1d and H1e were supported. These results were consistent with previous studies (Liñán, 2008; Liñán, Urbano, & Guerrero, 2011). However, on the other side, subjective norms were found insignificant with entrepreneurial intentions. Consequently, H1b was rejected. Similar results were reported in the earlier studies where they hypothesized the subjective norms with entrepreneurial and self-employment intentions (Autio, H. Keeley, Klofsten, GC Parker, & Hay, 2001; Krueger Jr et al., 2000; Liñán & Chen, 2009). However, this result was in contrary with the results of (Liñán & Chen, 2009) who found subjective norms were significant predictors of self-employment intentions using the SEM technique.

Finally, it was hypothesized that an individual holding strong entrepreneurial intentions would likely take actual actions and would result in venture creation. Hypothesis H1g was developed with the notation that the ability of intentions to predict subsequent behaviour was supported through empirical results and it was found that entrepreneurial intentions and perceived entrepreneurial behaviour control were significant predictors *(β= .0.16, $p < 0.05$)* and *(β= 0.10 $p < 0.05$)* of entrepreneurial actions.

The above explanation of the results of antecedence of entrepreneurial intentions and actions provides interesting and encouraging evidence. Despite the low coefficient values

between entrepreneurial intention and actions, however, it is empirically assured that any individual with firm entrepreneurial intentions has intention to start his/her own business.

In the light of the above results, the author provides several possible explanations. Firstly, it is interesting to note that all three entrepreneurial education programmes benefits found positive and significant impact of PBC which possibly encouraged the graduates to have a better control on their behavioural actions and provide them a firm determination to start their own business. It is convenient to understand the above results, as the same responses were taken into much consideration during the interviews conducted on some graduates (see Chapter Three, Section 3.9). The majority of the students explained that entrepreneurship education learning and inspiration benefits provided immense motivation to them which provides the researchers a favourable impression of entrepreneurship and hence, a rising positive attitude towards entrepreneurship. In fact, it brings out several personality traits such as decisive power, independence, reward for efforts, personal growth, a desire for more wealth and to be their own boss.

Further, knowledge on entrepreneurship was imparted to the students and some very inspirational activities such as field visits, seminars and lectures by external speakers were carried out as well as case studies entrusted them on their capabilities and skills. Indeed, the inspirational benefits of programmes strengthen certain aspects of personality characteristics or cognitive characteristics (self-efficacy, pro-activeness, risk-taking). Interestingly, the above explanation has been stated in the earlier literature that entrepreneurship can be taught (Henry, Hill, & Leitch, 2005a, 2005b; Klein & Bullock, 2006) and the personality characteristics that have implications on motivation and actions can be taught and transmitted (Sánchez, 2011).

Secondly, the positive effect of entrepreneurship education learning benefits in enhancing perceived behaviour control can be noticed in the next level of analysis, where perceived behaviour control is the most effective element flourishing entrepreneurial intentions. Certainly, entrepreneurship education programmes provide a trickledown effect while significantly affecting entrepreneurial intention through perceived behaviour control and attitude towards entrepreneurship.

Moreover, another possible explanation in the light of previous literature where it is believed that perceived behaviour control is more strongly related to entrepreneurial intentions in countries where entrepreneurs are faced with less favourable national environments (Kolvereid & Isaksen, 2006). The general and particular entrepreneurial environment in Pakistan is not appreciated by earlier scholars who pointed out several disappointing factors that may adversely affect the process of entrepreneurship development. These factors include the state of the country's law and order & political instability and the major these problems is inflation (Shabib-ul-Hasan, Izhar, & Raza, 2012). In addition, nascent entrepreneurs and in particular, university graduates face several problems such as financial constraints, corruption, social and technological problems, training, management and infrastructure obstacles while establishing and starting their own business (Sherazi, Iqbal, & Asif, 2013).

On the contrary, subjective norms did not contribute to the explanation and variation of entrepreneurial intentions, that is, subjective norms of entrepreneurship did not imply a more positive "social pressure" to start a firm. These findings were somewhat surprising in the case of Pakistan, where majority of the population still strongly believes on a combined

family system. The encouraging factors when considering living in a joint family system is that the younger family members can acquire guidelines from the elders of the family in any sort of decision-making, particularly when it concerns the major events of an individual's life. On the other side, the majority of graduates interviewed, strongly disagreed with the effects of social norms on their intentions, where they believed more on their capabilities, skills and knowledge. Apparently, there was a strong locus of control entrusted to them in decision making with regards to starting their own business, consequently rejecting the influence of society.

Moreover, subjective norms indicate considerably positive effect on attitude towards entrepreneurship and perceived behaviour control. It is indeed not surprising that subjective norms are closely linked to these two factors. It should be noted however, that subjective norms are measured through a list of very specific items in starting some own business. In contrast, the effects of subjective norms are perceived as an aggregate sense of motivation to start up a business. Therefore, the positive perceptions of the entrepreneurship of families, friends and social networks possibly strengthen the attitude towards entrepreneurship and motivate the individuals in starting a firm.

5.6 Exogenous factors (Entrepreneurship Education programmes benefits)

In the current study, entrepreneurship education activities are treated and accounted as exogenous factors. In most universities in Pakistan, entrepreneurship education programmes compose of four major components such as, taught component, business planning component, interaction with practice component and university support component. In the perspective of measuring the effects of these modules, three type of

benefits (e.g. entrepreneurship education learning, entrepreneurship education inspiration and entrepreneurship education incubation resources) proposed by (Souitaris, Zerbinati, & Al-Laham, 2007) are expected to be gained at the end of the programme. The following section provides the empirical results and discussion of the above-mentioned entrepreneurial benefits.

Table 5.3: Hypotheses and Summary of Results for the exogenous factors

Hypothesis		Path Coefficient	Supported
Antecedents of Entrepreneurial Intentions			
H2a	The higher the learning from the entrepreneurship education programme, the higher will be the entrepreneurial attitude to become an entrepreneur	0.221	Yes
H2b	The higher the learning from the entrepreneurship education programme, the higher will be the subjective norms to become an entrepreneur	0.401	Yes
H2c	The higher the learning from the entrepreneurship education programme, the higher will be the perceived behavioural control to become an entrepreneur	0.311	Yes
H2d	The higher the inspiration from the entrepreneurship education programme, the higher will be the entrepreneurial attitude to become an entrepreneur	-0.038	*No*
H2e	The higher the inspiration from the entrepreneurship education programme, the higher will be the subjective norms to become an entrepreneur	-0.059	*No*
H2f	The higher the inspiration from the entrepreneurship education programme, the higher will be the perceived behavioural control to become an entrepreneur	0.116	Yes
H2g	The higher the utilization of incubation resources, the higher will be the entrepreneurial attitude to become an entrepreneur	0.216	Yes
H2h	The higher the utilization of incubation resources, the higher will be the perceived behavioural control to become an entrepreneur	0.300	Yes
H2i	The higher the utilization of incubation resources, the higher will be the perceived behavioural control to become an entrepreneur	0.226	Yes

Nine hypotheses were developed in order to investigate the effects of entrepreneurship education programmes benefits (exogenous factors) on the antecedence of entrepreneurial intentions and actions. The results retrieved from the data analysis in Chapter Four are

depicted in Table 5.3. The empirical evidences support the overall positive impact and the importance of the entrepreneurship education programmes in producing entrepreneurs in the society. Similarly, we found that the influence of each component determining the intention is different depending on the kind of activities carried out.

The current study investigates the learning benefits from the entrepreneurship education programmes. The results derived allow for a clear distinction from the conventional entrepreneurship and management training, which is more focused in enhancing the technical knowledge and skills for business administrations. Further, splitting the different activities and benefits of the entrepreneurship education programmes helps to understand the most beneficial elements in raising the entrepreneurial attitude and intentions of the university graduates. Depending on the specific objectives, the current study involves the intention model (Ajzen, 1991) which seems to be a solid starting point for the analysis of entrepreneurship education programmes and their effects on the entrepreneurial intentions of the university graduates.

In the first part of the empirical analysis, the entrepreneurship education learning benefits appeared to be the most important factor in enhancing the entrepreneurial attitude of the university graduates. Where entrepreneurship education learning benefits indicated a strong influence on all three antecedence of entrepreneurial intentions, including the attitude towards entrepreneurship *(β= .0.15, $p < 0.05$),* subjective norms *(β= .0.38, $p < 0.001$)* and perceived behaviour control *(β= .0.31, $p < 0.001$),* hence, H2a, H2b and H2c were supported. The findings observed in this study mirrored those of the previous studies (Krueger and Brazeal, 1994; Peterman and Kennedy, 2003) and provided empirical support

to the idea that formal entrepreneurship education programmes can have a positive impact on students' intentions to start their own business. However, these results contradicted the findings of (Souitaris et al., 2007) whereby according to them, learning did not have a significant effect on the antecedence of entrepreneurial intentions.

One possible explanation of the findings would be because the "entrepreneurship education learning element" embraces the major themes of entrepreneurship including theoretical knowledge, values, motivation, abilities, social skills, networks, experience and intuitions. Most importantly, the above-mentioned major themes of entrepreneurship are transferred to several subjects and activities such as a term project at the end of each semester and for each subject. Further, entrepreneurship education courses also usually offer the opportunity to observe successful entrepreneurs and role models and this provides an opportunity for exciting learning to take place. The opportunities appeared in various aspects during these programmes including the case studies of prominent entrepreneurs, or work with an entrepreneur on a course project. Entrepreneurship learning module also includes social persuasion to enhance students' perceived behaviour control while monitoring students' course projects. The entrepreneurship learning component indeed provides both the theoretical concept of entrepreneurship and practical experiences while interacting with different relevant people during the project.

Secondly, entrepreneurship education inspiration benefits only show statistically significant effects $(\beta = .0.12,\ p < 0.05)$ on perceived behaviour control. However, inspiration has insignificant standardized coefficients with attitude and subjective norms, hence H2d is supported but H2e and H2f are rejected. In contrast, (Souitaris et al., 2007) in his study

found inspiration was the only predictor variable with significant coefficients in the hierarchical regression models for subjective norms among the antecedence of entrepreneurial intentions and behaviour.

The positive relationship of inspiration with perceived behaviour control is understandable. Several motivational activities are carried in that particular element of the programme, including inviting external speakers, visits and lectures delivered by local entrepreneurs, professors and the preparation of a business idea competition and the views of judges of the competition; these activities possibly give them more confidence and help to see a better control on their perceived behaviour. The most important element which was highlighted in interviews was an opportunity provided to them to consult renowned local entrepreneurs and lecturers on the business idea a graduate hold. Interaction with entrepreneurs at the early stage of the prelaunch of entrepreneurial venture is an important mechanism; that certainly strengthens students' confidence to become entrepreneur. These pedagogical techniques and inspiration activities would have provided a mastery of experience and affect self-efficacy, social anticipation and physiological state of an individual. In summary, the study illustrated that inspiration entrepreneurship programmes are a source of trigger-events, which inspire students (arouse emotions and change mindsets). Inspiration is the program-derived benefit that raises entrepreneurial attitudes and intentions (Zhao, Seibert, & Hills, 2005).

Lastly, the results of current study indicated, entrepreneurship education incubation resources benefits shows statically significant effect on all three antecedence of entrepreneurial intentions i.e. subjective norms $(\beta = .0.29,\ p < 0.001)$, attitudes towards

entrepreneurship ($\beta = .0.21,\ p < 0.001$) and perceived behavioural control ($\beta = .0.30,\ p < 0.001$), Thus, Hypothesis H2d, H2e and H2f were supported. In contrast, (Souitaris et al., 2007) found no significant effect of utilization of incubation resources with any antecedence of entrepreneurial intentions and behaviour.

The above result is interesting and the link between utilization of resources and antecedence of entrepreneurial intentions needs to be further explored since utilization of resources element is attributed more to practical activities related to entrepreneurship and tends to raise cognition of entrepreneurship including perceptions, beliefs, and intentions (Chen et al., 1998). One possible explanation may be provided on the results anticipated above. The universities practice an activity called; "field visits", where it was pointed out during the interviewees that it was the most important part of the programme. Field visits can be considered a part of the university support module of the programme, which certainly comes under the utilization of incubation resource benefits. The field visits may benefit the students in serving with particular attention to their correspondence and probably influence the attitude and perceived behaviour control. Further, field visits involve interaction with different personnel, and these personnel may provide different views and suggestions relevant to the business ideas of the graduates. Indeed, the views of external people are part of subject norms (Ajzen, 1991) and therefore, the utilization of incubation resource benefits would influence subjective norms.

Overall, the descriptive analysis of the entrepreneurship education programme benefits provide support to the view that entrepreneurship education programmes encourage university and college students to develop an entrepreneurial attitude and therefore are the

key facilitators for entrepreneurship development in the economies all around the world. The entrepreneurship education programmes certainly help students to develop several constructive competencies which perhaps are more important in business start-ups and development. Since the demographical traits are no longer considered vital for business start-ups, additional attributes of individual differences, including knowledge, abilities and skills will therefore play a role in the whole process of entrepreneurship establishment and development. Thus, entrepreneurship education programmes and training are therefore beneficial for the students to attain the above-mentioned competencies. These competencies include knowledge competence which facilitates the student in accessing useful information and experience (Marsili, 2002). Further, the skill competency may involve technical skills (e.g. organization management, business idea development and industry skills) and human skills. The competencies developed in these programmes will further enhance the competency ability which provides the confidence and capability to cope with and overcome adversity and the cognitive ability to discover opportunities.

Although entrepreneurship education programmes are the key to develop a variety of entrepreneurial competencies of the graduates, it is however, also provide the opportunity for the students to gain entrepreneurship knowledge and a real business context leading to a strengthen student's confidence to start his/her own business. The entrepreneurial approach is developed through different elements and mechanisms known to entrepreneurial attitude, perceived behaviour control, self-efficacy beliefs, mastery experiences, role modelling, social persuasion, and physiological states. The following major arguments can be supported on the basis of the structure of entrepreneurship programmes investigated in the current study; where the combination of the components would possibly provide the

opportunity to the graduates to work in close cooperation with inventors and external mentors who have board positions which indeed will result in venture creation.

5.7 Moderating role of environmental and contextual factors

In the past few years, entrepreneurship research attempted to explore the prominent factors of venture creation (discussed in Chapter 2); however, the moderating influence of the external environment and contextual motivators and barriers are yet to be investigated in the process of venture creation. Thus, the current study investigates the moderating role of contextual and environmental entrepreneurial motivators and barriers on the relationship between entrepreneurial intentions and actions.

Table 5.4: Hypotheses and Summary of Results of the moderating effect of environmental and contextual factors

Hypothesis		Path Coefficient	Supported
The moderating effect of perceived entrepreneurial motivators and barriers			
H3a	The more favourable the individuals perceive contextual factors to be to founding a new venture, the more likely they are to act on becoming an entrepreneur	0.08	NO
H3b	The stronger the individuals' perceptions that the barriers to starting a new venture are insurmountable, the less likely they are to act on their intentions to become entrepreneurs	-0.690	Yes

Two hypotheses were developed, in order to empirically investigate the moderating impact of environmental and contextual (perceived entrepreneurial motivators and barriers). The results retrieved from the data analysis in Chapter Four are depicted in Table 5.4.

Whether or not a trigger is required, contextual and environmental factors appear to act between intention and behaviour, either supporting the realization of intentions (i.e., the

transformation of intentions into actions) or providing a barrier. Therefore, it is important to highlight the moderating role of contextual and environmental factors in the relationship between intention and behaviour.

The results derived from the current study supported hypothesis H3b while indicating statistically significant moderating effect both for highly perceived entrepreneurial barriers *($\beta = 0.241$, $p < 0.05$)* and lowly perceived entrepreneurial barriers *($\beta = 0.210$ $p < 0.001$)*. However, the results an insignificant moderating effect of perceived entrepreneurial motivators on the relationship between entrepreneurial intentions and entrepreneurial behaviour. Since the value of chi square difference *($\Delta^{\chi^2}9$)* revealed insignificant difference, therefore, H3a was not supported.

The above-mentioned result suggested some interesting facts and confirmed the major claim made in Chapter Two (Section 2.6) where it was argued that although entrepreneurship education programmes empirically supported a positive impact on the entrepreneurial attitude and intentions of the graduates, however, at the same time, these graduates posited a fear of failure in the presence of perceived entrepreneurial barriers in the environment. Critically, this explanation needs to take into account that the entrepreneurial barriers of any kind, included either in this study or others of the same nature, indeed of high importance in the whole process of entrepreneurship development. In fact, the results suggested that if the inclination to start a business is primarily formed by the founding related conditions, the attributes and features of that condition which either support or hinder should have an effect on the entrepreneurial intentions. In this case, either the government or university management should hold intentions to expand their activities

in order for the education infrastructure and legal condition and establish appropriate and constructive entrepreneurial policies.

Although entrepreneurship education programmes support university graduates in building their intentions through several ways such as transferring entrepreneurial knowledge, enhance entrepreneurial capabilities and build entrepreneurial skills, the primary objectives of these programmes are not only to enhance the intentions of the graduates but also to introduce and promote the entrepreneurship education programmes with the aim and objective of promoting the entrepreneurial attitude and producing more entrepreneurs in the society. Thus, when structuring the entrepreneurship education programmes in any country, contextual and environmental motivators and barriers should take an account and develop the programmes accordingly.

5.8 Significant Implications of the Research

The present study makes several noteworthy contributions and extends our knowledge on multiple aspects. The empirical results explore the importance of entrepreneurship education programmes and the role of environmental and contextual factors in founding entrepreneurial intentions and promoting entrepreneurial approach among university graduates. Based on the findings and results of the current study, we suggest several theoretical, policy and managerial implications to the public policy makers and university administrators.

5.8.1 Theoretical Implications

This research provides several important implications for the theory. Firstly, literature concerned with the phenomenon of entrepreneurship development is expanded in the

current research. The study contributes to the theory of planned behaviour by providing empirical support in confirming the attitude and intention link and by testing the effect of an 'exogenous influence' (entrepreneurship education programme's benefits) on attitudes and intentions towards the behaviour. Although the studies on the impact of entrepreneurship education have emerged in the literature, however, it should not be assumed that the results derived from the European western data could be generalized to other regions of the world, particularly the developing economies of Asia. Most importantly, this research proposed and empirically tested a model which tapped both exogenous factors and contextual factor in one single process. A review of literature failed to detect a study that has utilizes a theory or model which investigated the effects of entrepreneurship education and perceived environmental and contextual entrepreneurial motivators and barriers. Thus, a comparison of the results is not possible; perhaps perceived entrepreneurial motivators and barriers in westerns countries may differ due to the different context of environment and market since, in the highly saturated markets, the individuals who tend to start their own business need to explore an opportunity. Indeed, opportunity in these markets refers to innovation and therefore, the entrepreneurship education programmes are more oriented towards enhancing the innovative capabilities of the graduates. Moreover, the results provide various and new perspectives to the researchers interested in entrepreneurship development phenomenon and evidence-based guidelines to the practitioners involved in formulating and developing policies and programmes for entrepreneurship development.

Moreover, the ongoing debate about whether and how contextual and environmental conditions affect students' career decision starting their own venture is explored in the

current research. Investigating the moderating effect of environmental and contextual factors in the process of promoting entrepreneurial attitude and intentions provides a point of rethinking and reformulating both the educational and institutional policies of entrepreneurship development in the societies. The results show that although entrepreneurship education is effective in providing all necessary entrepreneurship information, knowledge and skills that resulted in founding strong entrepreneurial intentions, however, the results indicate that intentionality for entrepreneurship is surrounded by cultural expectations and barriers to business start-up and business environment and therefore, entrepreneurial intentions themselves are influenced by perceived and real barriers to action. Thus, this study confirms and provides a clear interconnected link between the different domains but related to the same phenomenon i.e. entrepreneurship development.

The study also contributes to the literature of entrepreneurship education while investigating programme specific benefits where it is revealed that entrepreneurship learning benefits significantly affect attitude and intention of graduates. At a broader theoretical level, this study introduces a non-psychological angle to the entrepreneurship literature i.e. learning about entrepreneurship. Learning from entrepreneurship education most probably focuses on enhancing several aspects relevant to entrepreneurship including entrepreneurship knowledge, abilities, skills, social skills, networks and finally, experience and intuition. Based on our results, it can be proposed that often, there is something more than personality, demographical background, cognition, or information which indeed influences an individual's perception and decides his or her entrepreneurial career.

5.8.2 Policy Implications

The present study provides evidence that entrepreneurship education programmes play a significant role in developing entrepreneurial attitude and intentions. The results also manifest significantly a positive relationship between entrepreneurial intentions and entrepreneurial actions, suggesting that entry into self-employment is an intentional behaviour. Therefore, the positive perception of entrepreneurship education may be encouraged and promoted by suitable initiatives using multiple effective platforms. The policy makers and administrators of higher education institutions would be apprised to increase their efforts when implementing educational research, university and industry tie-ups and allocate sufficient resources on entrepreneurship. Furthermore, the prime objectives of motivating students for entrepreneurship as a career alternative should be imparted efficiently, effectively and practically in the educational activities of these programmes. This particular objective can be established through executing several activities including disclosing a positive role of local and international role models in teaching, establishing entrepreneurial support networks with industries and arranging business plan competitions.

It could be suggested that countries with different entrepreneurial environmental and contextual factors tend to adopt more suitable approaches that are better aligned with these factors in executing entrepreneurship education programmes to achieve the maximum output. Although the literature provides a general perception that entrepreneurship programmes inspire and empower an individual with entrepreneurial knowledge and skills and positively impact entrepreneurial intentions, however, the consistency of its impact is different across different economies (Giacomin et al., 2011). Even in economies with a consistent growth and supportive environment, a national policy with a supportive

entrepreneurial structure and development is encouraged (Lee & Peterson, 2001). Entrepreneurship education may be more critical in the developing countries compared to developed countries (Lee, Chang, & Lim, 2005). Indeed, in developed nations such as the Scandinavian countries, innovative activities and innovations are the core objective of entrepreneurship education policies (Ministry of Science and Education, Denmark, 2010). Thus, in order for educational programmes to be efficient, they must be adjusted, for example, to the perceived barriers and entrepreneurial attitudes unique to each nation (Pittaway & Cope, 2007).

Thus, it is worth noting that institutional policies which are designed for one purpose (e.g. entrepreneurship development) can have an impact on entrepreneurship education indirectly, either positively or negatively. Therefore, policy makers (both in the education and government sector) are asked to be well connected with each other while formulating entrepreneurship development policies to better in line with the educational modules and environmental and contextual factors in their particular context and environment. The entrepreneurship education programmes may focus on eliminating the fear of business failure and provide better means to handle with unavoidable barriers in the environment. Entrepreneurship educational programmes can also play a role in attenuating the risk-averse attitude of students by providing them with training to take calculated business risks and by emphasizing the use of local role models (e.g. successful entrepreneurs) and local case studies to raise the students' awareness of the offside opportunities of starting their own businesses. Further, the policy implication here is that the government needs to counter-balance these factors by bringing more awareness of entrepreneurial role models who are successful, removing bureaucratic impediments to start-ups, and attenuating the social

stigma of failure. Further, support can be provided to promote the image of entrepreneurship as a career alternative and the university environment should be intensified.

In addition, on a broader perspective, the developing economies, where entrepreneurship education is not exploited when practicing entrepreneurship development, may be motivated by the results and thus, these programmes are introduced in the existing educational curriculum of their countries.

5.8.3 Managerial Implications

The entrepreneurship education has been introduced and promoted in many countries while integrating the concept of entrepreneurship in the existing curriculum of colleges and universities. However, the distinct nature and objective of producing entrepreneurs in the society required the university administrators to make broader changes and extra arrangements in the current educational structure. Thus, the anatomy of entrepreneurship education programmes embraced activities with very particular outputs and therefore, these programmes were required to be examined with regards to specific benefits that students can derived from the programmes. This study investigated the entrepreneurship programmes in the context of program benefits on the attitude and intentions of the students which probably will give a better insight to university educators and administrators and particularly for the evaluation of entrepreneurship education in understating the exact nature and impact of each activity.

Further, the results manifested encouraging and supporting evidence in founding the entrepreneurial attitude of the graduates. This particular fact provides a two-fold policy implication to the universities; firstly, it supports and suggests the introduction and promotion of entrepreneurship education to non-business students. Thus, those who are in charge of education and economic policy intended to encourage technical students to choose self-employment as their career and form high tech companies. Secondly, at present, only a few universities in Pakistan have introduced entrepreneurship education programmes in their business faculties and departments. Therefore, Pakistan's higher education commission may convince other universities to introduce and promote entrepreneurship education programmes in their curriculum.

5.9 Limitations of the Research

The current research is featured with several limitations. Firstly, subsequent to self-employment resulting from strong entrepreneurial intentions was an investigation of the samples of university graduates. Secondly, although the sample size of the current study was considered satisfactory, however, a big sample size is more appreciated while generalizing the implications of the research. Thirdly, the measurement of the variable has a significant influence on the outcomes of any SEM model. Thus, the problem always remains as to whether the most appropriate scale has been applied to measure the construct. In the current research, entrepreneurial intention was tapped using the activities performed in the entrepreneurial programmes. It is however believed that some other more appropriate measures can be discoursed by interviewing the nascent entrepreneurs.

Finally, although this research tries to investigate the maximum perceived benefits of entrepreneurship education programmes, however, some other unexplored benefits can be

explored in future studies. Therefore, public policies and universities would be well advised to intensify their activities in developing entrepreneurship.

5.10 Signposts for Future Research

In the current study, the link between entrepreneurial intentions and actions was empirically investigated on the samples of university graduates. Future research may attempt to conduct a longitudinal study on graduates who have completed their entrepreneurial studies. As it is argued by Herron and Robinson (1993) that" "the set of behavioural events that leads an individual to become entrepreneurs presumably takes place over a long proportion of their lifetime." Thus, a longitudinal study would facilitate to disclose and tapped the real picture of the environmental and contextual factors. As Nascent entrepreneurs may have different frames of mind particularly on the perception of entrepreneurial motivators and barriers, this, despite the fact, that they may have more real information and experience on the entrepreneurial barriers and motivators.

Secondly, more unexplored benefits can be explored and investigated by either interviewing these entrepreneurial graduates who have started their own business after completing their studies or reading on the structures and activities under the umbrella of these programmes in the top universities around the world.

Thirdly, the economic environment is not limited to the factors which are included in the current study; therefore, a study can be conducted to disclose other micro and micro environmental and contextual factors. In addition, although some studies (Amorós, 2009; Mazzarol, Volery, Doss, & Thein, 1999) investigated the direct effects of several

environmental and contextual factors including social, economy, political infrastructural developments, voice and accountability, political stability and absence of violence etc., however the moderating effect of these factors have yet to be examined.

Finally, realizing this could be the first empirical research to analyze the proposed relationships in Pakistan, a replication of this research in future using samples from other countries or cultures could be a fruitful attempt to confirm a robust conclusion of the findings. Most importantly are the moderating effects of environmental and contextual factors on the relationship between entrepreneurial intentions and actions while using the samples of graduates who attended entrepreneurship education programmes and are professionals in their career.

5.11 Conclusion

To facilitate and support economic growth using the entrepreneurship development approach, universities were asked to play a new role of promoting entrepreneurship in general and commercializing the knowledge in particular by providing education to candidates and seeding the foundation for new ventures. Thus, many countries have introduced and promoted entrepreneurship education programmes in the colleges and universities. Various natures of entrepreneurial activities are executed and established on the understanding and perceptions of the university. However, the entrepreneurship education plans to carry out the very particular nature of objectives, i.e. promoting an entrepreneurial attitude among the graduates and motivating them to a privileged entrepreneurship as a career.

This study presents a detailed investigation on the effects of entrepreneurship education programmes on the antecedence of entrepreneurial intentions and actions in Pakistan. Although the effects of entrepreneurship education have been investigated by several authors however, the benefits and desired objectives derived from entrepreneurship education are still poorly understood. Several previous studies have found a positive impact of entrepreneurship education courses or programmes at universities on perceived attractiveness and feasibility of new venture initiation or even on actual start-up activities (Tkachev and Kolvereid, 1999; Peterman and Kennedy, 2003; Fayolle et al., 2006; Souitaris et al., 2007). Other studies found evidence that the effects were negative (Oosterbeek et al., 2010). There may be methodological reasons why the literature has not generated consistent assessments as yet. While the studies provide intriguing results, many of them tend to have methodological limitations.

The main conclusion drawn from this study is related to a better understanding of the anatomy of the entrepreneurship education programmes when investigating entrepreneurship programmes in the perspective of perceived benefits and their influence on the antecedence of entrepreneurial intentions and actions. The approach enables us to identify the consequence of each activity, module or component of entrepreneurship programmes on the antecedence of entrepreneurial intentions independently.

Overall, the entrepreneurship education programmes are found to have positive influence on the entrepreneurial attitude of graduates and these students attain strong entrepreneurial intentions. These students were found determinant to start their own business and during their studies, some of them were found partially involved in business activities. Further

entrepreneurship learning was found to be the most influenced module in founding the entrepreneurial attitude of the students leading to establishing entrepreneurial intentions. In addition, inspiration and utilization of incubation resources were also found to affect subjective norms and perceived behaviour control positively thus exhibiting their influence in establishing the entrepreneurial intention of the graduates.

Moreover, the moderating effects of perceived entrepreneurial motivators and barriers were investigated on the relationship between entrepreneurial intention and actions. The moderation analysis provides positive support to the importance of this factor in the process of entrepreneurial intentions development and subsequent entry to self-employment. The students were found to be afraid and influenced by perceived entrepreneurial barriers residing in the environment. Further, when comparing the entrepreneurial intentions among entrepreneurial students and non-entrepreneurial students, further support indicated low beta values of the entrepreneurial students in the absence of entrepreneurship education programmes.

To conclude, the current study indicates the positive impact of entrepreneurship education programmes in promoting the entrepreneurial attitude of the university graduates and thus could be considered a vital source of entrepreneurship development in particular and economic development in general. Further programmes would be of greater influence when designed in the context of a particular entrepreneurial environment and context.

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APPENDICES

Appendix 1: Survey Instrument

Part-1
Measures of Core Entrepreneurial Intention Model Elements
To what extent the following factors contributes in starting you own business

Attitude towards entrepreneurship		To a great extent	To fairly great extent	To moderate extent	To small extent	Not at all
1.1	To what extent will starting a business provide you with Independence					
1.2	To what extent will starting a business provide you with decision-making power					
1.3	To what extent will starting a business provide you with position of authority					
1.4	To what extent will starting a business provide you with opportunity be your own boss					
1.5	To what extent will starting a business provide you with opportunity to know about your abilities					
1.6	To what extent will starting a business provide you with opportunity to make use of your creativity					
1.7	To what extent will starting a business provide you with opportunity to carry out your dreams					
1.8	To what extent will starting a business provide you with opportunity to create something new					
1.9	To what extent will starting a business provide you with opportunity to take the advantage of economic opportunity					
1.10	To what extent will starting a business provide you with opportunity to have a large share of your salary to be based on results					
1.11	To what extent will starting a business provide you with opportunity to be paid based on yout achievements					
1.12	To what extent will starting a business provide you with opportunity to have a challenging job					
1.13	To what extent will starting a business provide you with opportunity to have exciting job					
1.14	To what extent will starting a business provide you with opportunity to have an interesting job					
1.15	To what extent will starting a business provide you with opportunity to have motivating job					
1.16	To what extent will starting a business					

	provide you with opportunity to have power in making your decisions					
1.17	To what extent will starting a business provide you with opportunity to have authority in making your decisions					
1.18	To what extent will starting a business provide you with opportunity to participate in the whole process of business					
1.19	To what extent will starting a business provide you with opportunity to follow the work –tasks from A to Z					
Subjective Norm		***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
1.20	To what extent it is important to you that my closest family members think that I should start my own business.					
1.21	To what extent it is important to you that my closest friends think that I should start my own business.					
1.22	To what extent it is important to you that my colleagues and people around me think that I should start my own business.					
1.23	To what extent it is important to you that my fellow graduates of the entrepreneurship programs think that I should start my own business					
1.24	To what extent it is important to you that that the local business community leaders think that I should start my own business.					
Perceived Behavioural Control		***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
1.25	To what extent It would be easy for me to become an entrepreneur					
1.26	To what extent It would be easy for me to start your own business					
1.27	To what extent i believe that the number of events outside my control which could prevent me from being self-employed is numerous.					
1.28	To what extent you are confident that you have the ability to successfully become self-employed					
1.29	To what extent you are confident that if you start a business the failure chances will be very low.					
Entrepreneurial Intention		***Strongly agree***	***Agree***	***Neutral***	***Disagree***	***Strongly disagree***
1.30	I am ready to do anything to be an entrepreneur					
1.31	My professional goal is to become an					

	entrepreneur					
1.32	I will make every effort to start my own business					
1.33	I am determined to create a firm in the future					
1.34	I have very seriously thought of starting a firm					
1.35	I have the firm intention to start a business					
Entrepreneurial behaviour						
Business Planning		***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
1.36	To what extent you are involved in preparing business plan					
1.37	To what extent you have organized start-up team					
1.38	To what extent you have acquired facilities/equipment					
1.39	To what extent you have developed product/service					
1.40	To what extent you have conducted market research					
1.41	To what extent you devoted full time to the business					
Financing the new firm		***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
1.42	To what extent you have saved money to invest for staring your own business					
1.43	To what extent you have applied for bank funding					
1.44	To what extent you have received bank funding					
1.45	To what extent you have Applied for government funding					
Interaction with external environment		***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
1.46	To What extent you have applied for license patent, etc.,					
1.47	To What extent you have hired employees					
1.48	To What extent you have Sales promotion activities					
1.47	To What extent you have Business registration					

Part -2

Measures of Entrepreneurship Education program's effectiveness and benefits

Indicate your level of agreement with the following sentences.

Learning	**To what extent did the entrepreneurship program?**	***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
2.1	increase your understanding of the attitudes, values and motivation of entrepreneurs					
2.2	increase your understanding of the actions someone has to take in order to start a business					
2.3	enhance your practical management skills in order to start a business					
2.4	enhance your ability to develop networks					
2.5	enhance your ability to identify an opportunity					

Do you remember any particular event or input during the entrepreneurship program that changed drastically your 'heart and mind' and made you to consider becoming an entrepreneur? (Yes/no).if yes also show to what extent.

		NO	***YES***	**If yes indicate to what extent**	***To a great extent***	***To fairly great extent***	***To moderate extent***	***To small extent***	***Not at all***
Inspiration									
2.6	the views of a professor								
2.7	the views of an external speaker								
2.8	the views of a visiting entrepreneur								
2.9	The views of classmate(s),								
2.10	the preparation for a business plan competition								
	the views of judges of the competition								

Indicate your level of usage of the resources during your study program with the following list of resources

Incubation resources		***more than ten times***	***more than five times***	***more than twice***	***once or twice***	***Not at all***
2.11	A pool of entrepreneurial-minded classmates for building a team					
2.12	A pool of university technology					
2.13	Advice from faculty					
2.14	Advice from classmates					

2.15	Advice from tech-transfer officers					
2.16	Research resources (library /web)					
2.17	Networking events					
2.18	Physical space for meetings					
2.19	Business plan competitions (testing ground for the idea)					
2.20	Seed funding from university					
2.21	Referrals to investors					

Part-3
Institutional and contextual factors
Perceived entrepreneur motivators/opportunities and Barriers
3.1 Perceived entrepreneur motivators / opportunities

Indicate your level of agreement with the following motivators / opportunities in starting your own business

		Strongly agree	***Agree***	***Neutral***	***Disagree***	***Strongly disagree***
3.1	To change my self					
3.2	To realize my dream					
3.3	To take advantage of my creative talents					
3.4	Entrepreneurs have a positive image in our society					
3.5	consultant and service support for new companies is available					
3.6	The creative atmosphere in my university inspires to develop ideas for new businesses					
3.7	Entrepreneurial development institute in Pakistan motivates to start some one's own business					
3.8	The unnerved markets urge to start a business					
3.9	University and industry collaboration inspires to develop ideas for new businesses					
3.10	To receive a salary based on merit					
3.11	To provide a comfortable retirement					
3.12	To work at a location of my choice					
3.13	The need for a job					
3.14	To invest my personal saving					
3.15	To increase my status/prestige					
3.16	To follow the example of a person i admire					
3.17	To maintain a family tradition					

3.2 Perceived institutional and environmental barriers

Legal and regulatory environment		***Strongly agree***	***Agree***	***Neutral***	***Disagree***	***Strongly disagree***
3.18	Government organizations does not assist individuals starting their own businesses					
3.19	Government supports government contracts for new and small businesses					
3.20	Local and national government have no special support for individuals starting a new business					
3.21	Government does not sponsors organizations that help new businesses develop					
3.22	even after failing, government does not assists entrepreneurs starting again					
Hard reality		***Strongly agree***	***Agree S***	***Neutral***	***Disagree***	***Strongly disagree***
3.23	Bad economic factors					
3.24	Risk greater than initially expected					
3.25	The uncertainty of failure					
Lack of skills or resources		***Strongly agree***	***Agree S***	***Neutral***	***Disagree***	***Strongly disagreed***
3.25	Lack of marketing skills					
3.26	Lack of managerial or financial expertise					
3.27	Lack of info about business start-ups					
3.28	Finding the right partner					
Complaint cost		***Strongly agree***	***Agree S***	***Neutral***	***Disagree***	***Strongly disagreed***
3.29	Compliance with Govt regulations					
3.30	High taxes and fees					
3.31	Finding suitable labour					
Lack of support		***Strongly agree***	***Agree S***	***Neutral***	***Disagree***	***Strongly disagreed***
3.32	Fear of failure					
3.33	Convincing others it is a good idea					
3.34	No one want to help me					
3.35	Lack of suitable premises					
Lack of capital		***Strongly agree***	***Agree S***	***Neutral***	***Disagree***	***Strongly disagreed***
3.36	Difficulty in obtaining finance					

3.37	Lack of own savings or assets					
3.38	Lack of support from family or friend					

Part-4
Demographics

Gender: …….. .....**Age:** …….....

Cast ……**Programme enrolled:**……..

Semester: ……**University:** ……

Level of your entrepreneurship education program

1. Undergraduate ☐
2. Graduate (Masters) ☐

Work experience

Yes ( ), No ( ), if yes how many years …….

Have you ever started a small business? Yes ☐ **No** ☐

If (yes) was this a positive or negative experience for you? Positive ☐ **Negative** ☐

Father's highest education level?

Below high school ☐ Secondary school ☐ Technical &vocedu. ☐ University or higher edu. ☐

Mother's highest education level?

Below high school ☐ Secondary school ☐ Technical &vocedu. University or higher edu. ☐

Father's Profession …….

Are you belonging to an Entrepreneurial family? Yes ☐ **No** ☐

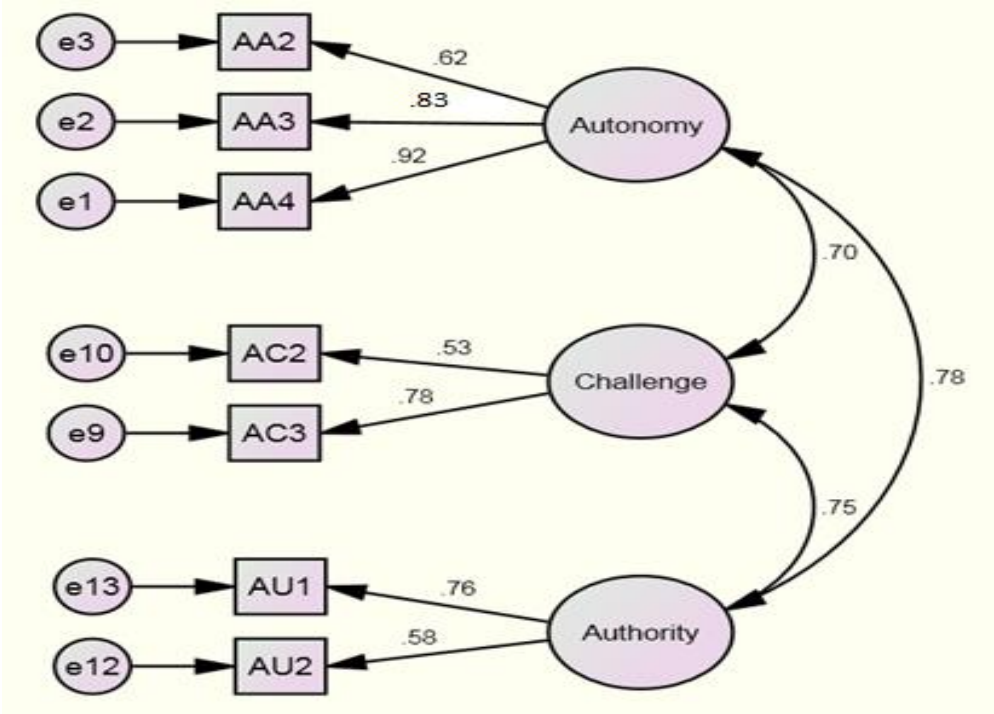
What are the Modules or components used in current entrepreneurship education program, please tick

1. **Taught component:** (which includes provision of entrepreneurial theoretical knowledge**)** ☐
2. **Business plan component:** (This can include business plan competitions and advice on Developing a specific business idea). ☐
3. **Interaction with Practice 'component:** which can include talks from practitioners and networking events ☐
4. U**niversity support component:** which can include market-research resources, space for meetings, a pool of technology with commercial potential and even seed funding to student-teams. ☐

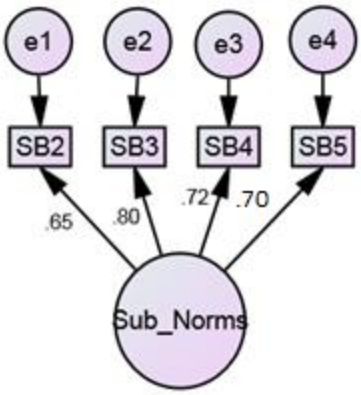
Telephone number:.....**Email address:**.....

Appendix 2: Assessment of Uni-Dimensionality

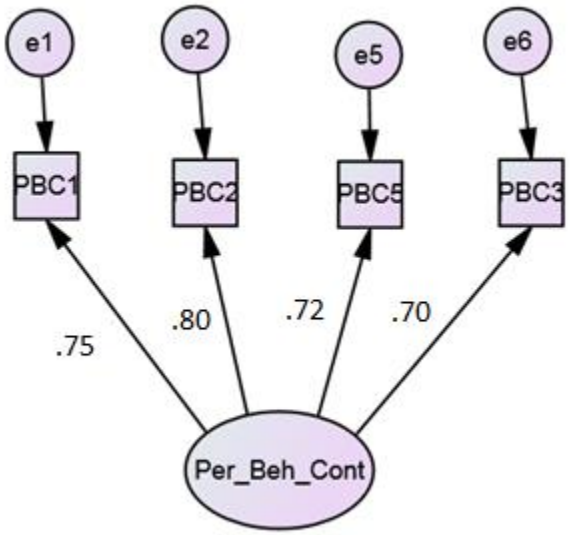
Appendix 2.1 Measurement Model of Attitude towards entrepreneurship



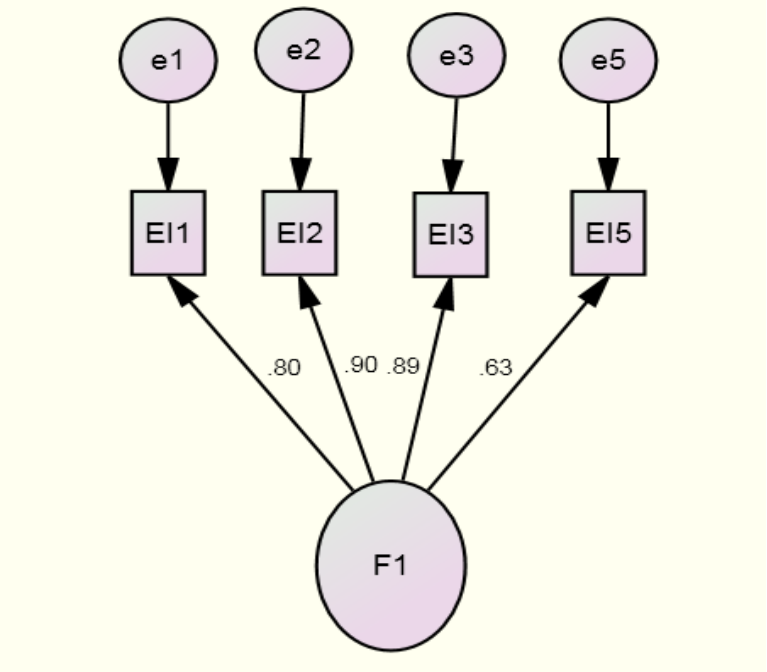
Appendix 2.2 Measurement model of Subjective Norm for being an entrepreneur



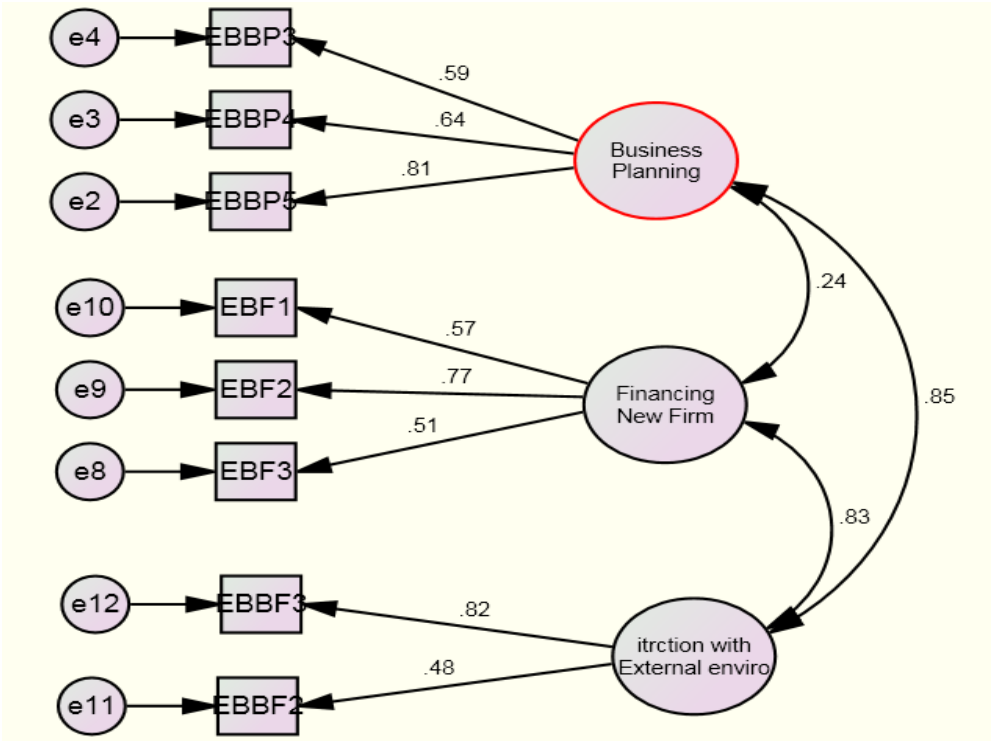
Appendix 2.3 Measurement model of Perceived behavior control



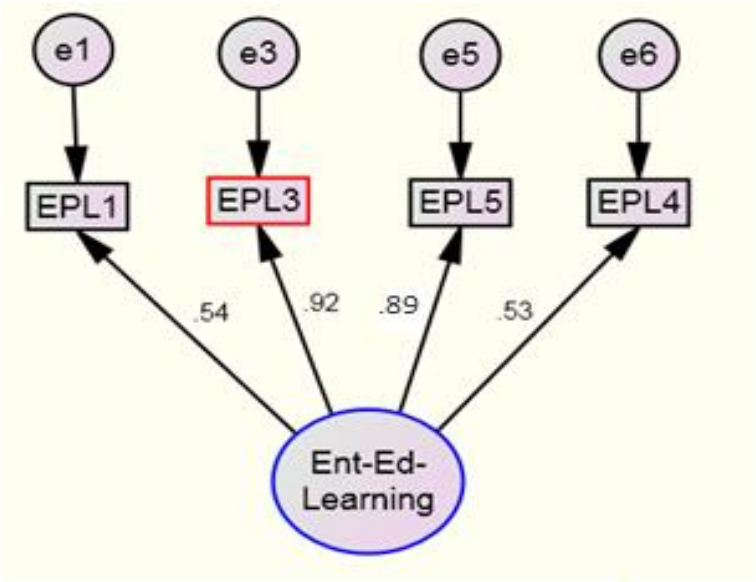
Appendix 2.4 Measurement model of Entrepreneurial Intentions for being an entrepreneur



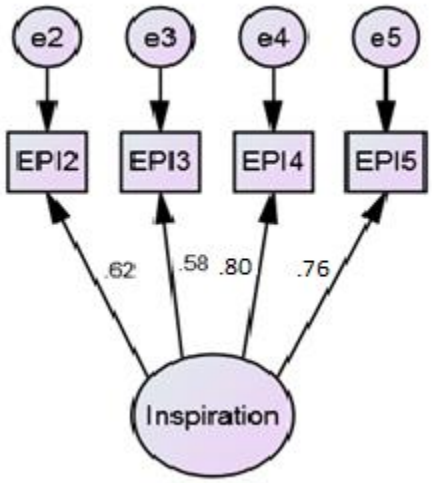
Appendix 2.5 Measurement model of Entrepreneurial Behaviour for being an entrepreneur



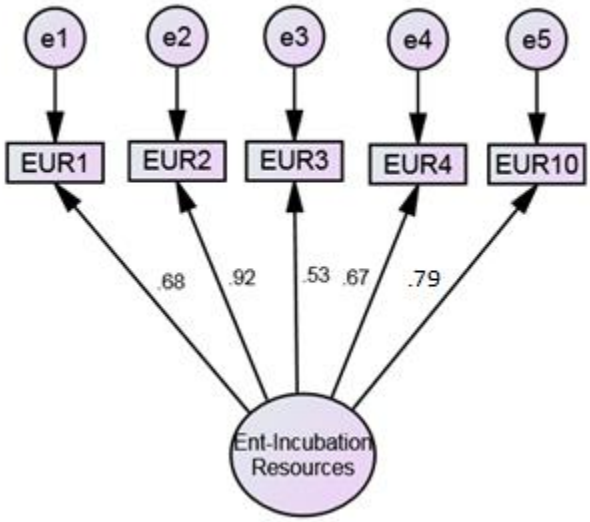
Appendix 2.6 Measurement model of entrepreneurship education learning Benefits



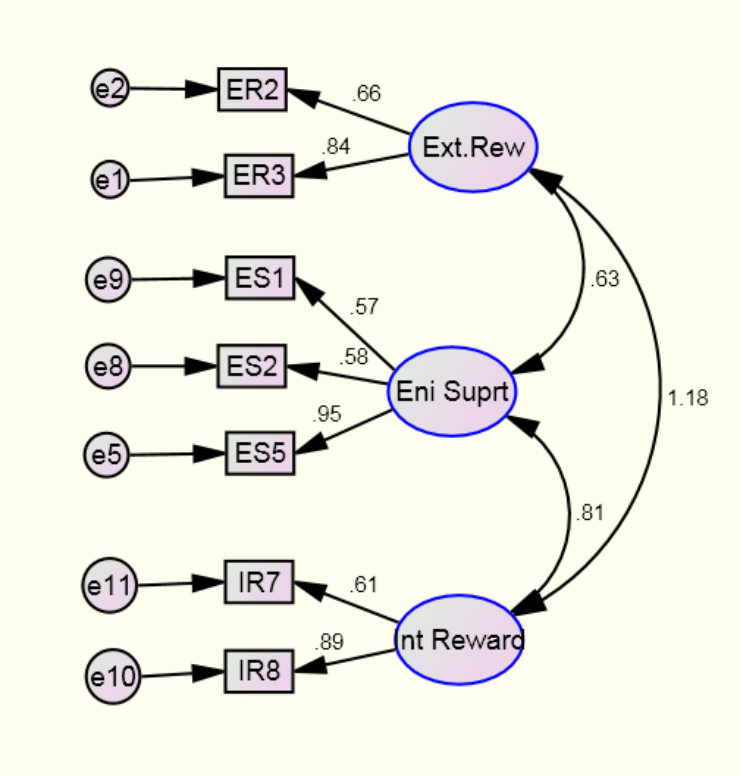
Appendix 2.7 Measurement model of Entrepreneurship education Inspiration Benefits



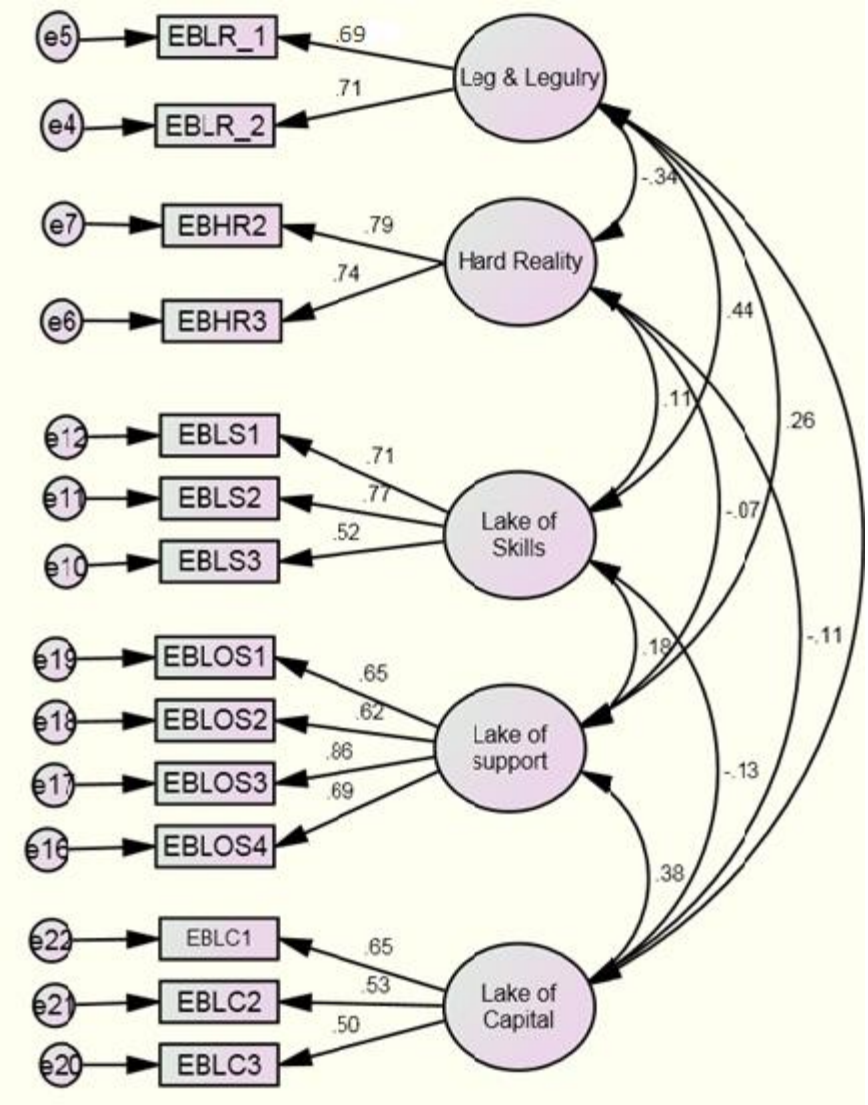
Appendix 2.8 Measurement model of entrepreneurship education utilization of incubation resources Benefits



Appendix 2.9 Measurement model of perceived entrepreneurial motivators



Appendix 2.9 Measurement model of perceived entrepreneurial barriers

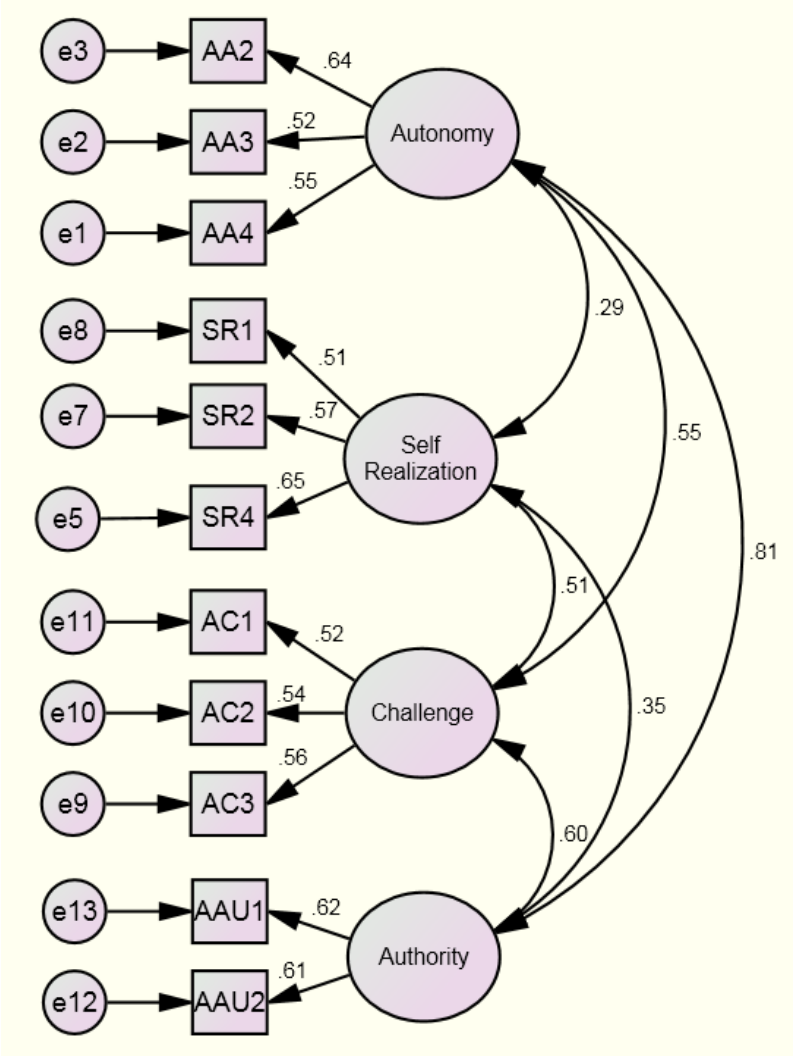


Appendix 2.10 Summary of Model fit indices of constructs

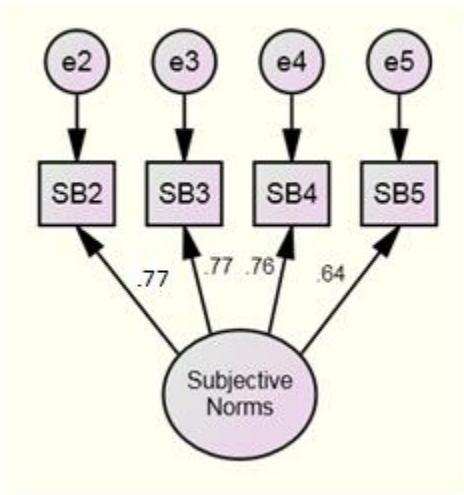
Constructs	χ^2	*df*	*sig*	*GFI*	*AGFI*	*NFI*	*TLI*	*CFI*	*RMSEA*	*RMR*
Attitude toward entrepreneurship	5.12	11	0.00	0.95	0.88	958	0.93	0.966	0.080	0.016
Subjective Norm	0.08	2	0.92	1.00	0.99	0.99	1.02	1.00	0.00	0.00
Perceived behaviour control	1.31	2	0.27	0.99	0.98	0.98	0.99	0.99	0.03	0.02
Entrepreneurial Intentions	0.63	2	0.53	0.99	0.99	0.99	1.00	1.00	0.00	0.00
Entrepreneurial Behaviour	4.53	17	0.00	0.94	0.87	0.89	0.86	0.91	0.10	0.04
Entrepreneurship learning Programs	0.34	2	0.70	0.99	0.99	0.99	1.01	1.00	0.00	0.00
Entrepreneurship Inspiration Programs:	3.75	2	0.023	0.98	0.94	0.96	0.92	0.97	0.07	0.01
Entrepreneurship Incubation Resources	1.46	5	0.199	0.99	0.97	0.98	0.99	0.99	0.03	0.04
Perceived Entrepreneurial Motivators	4.92	11	0.00	0.96	0.90	0.97	0.94	0.97	0.09	0.03
Perceived Entrepreneurial Barriers	1.46	67	0.008	0.95	0.93	0.90	0.95	0.96	0.03	0.02

Appendix 3: Assessment of Uni-Dimensionality of control group

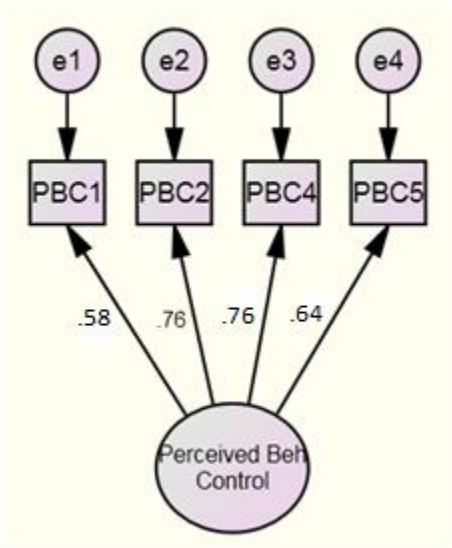
Appendix 3.1 Measurement Model of Attitude towards entrepreneurship



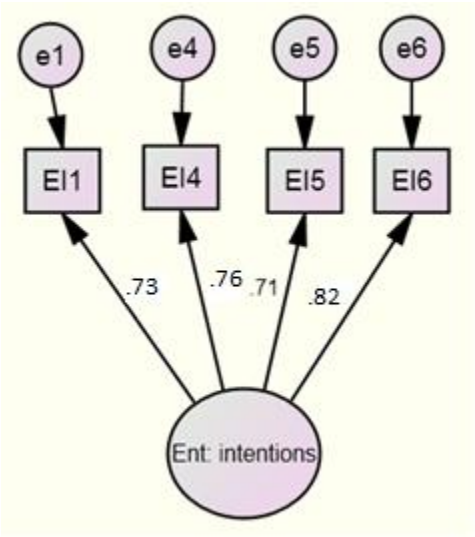
Appendix 3.2 Measurement Model of subjective norms



Appendix 3.3 Measurement Model of perceived behavior control



Appendix 3.4 Measurement Model of entrepreneurial intentions



Appendix 3.5 Summary of Model Fit Indicators of Control Group Constructs

Constructs	*χ2*	*df*	*sig*	*GFI*	*AGFI*	*NFI*	*TLI*	*CFI*	*RMSEA*	*RMR*
Attitude toward being an entrepreneur	1.909	38	0.001	0.961	0.932	0.87	0.901	0.932	0.053	0.021
Subjective Norm for being an entrepreneur:	0.965	2	0.381	0.997	0.985	0.995	1.001	1.000	0.000	0.015
Perceived behaviour control	3.587	2	0.028	0.989	0.945	0.968	0.929	0.976	0.089	0.022
Entrepreneurial Intentions	0.364	2	0.695	0.999	0.994	0.997	1.015	1.000	0.000	0.007