



**Promoting Entrepreneurs and Economic Growth Through
Entrepreneurship Programmes: A New Role of Saudi Universities**

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ABSTRACT

The Kingdom of Saudi Arabia (KSA) is a wealthy country but faces multiple economic and social challenges. Economically, the country depends almost entirely on a single natural resource i.e. oil, which will be eventually exhausted. About sixty seven percent of Saudi's native population is under 30 years of age and about 30 percent of 15-29 years old Saudis are unemployed. The country thus needs to diversify its economy and create job opportunities for its young unemployed population. A way forward in this regard could be supporting and promoting young people to engage in economic and entrepreneur activities, which could be facilitated by entrepreneurship education.

Entrepreneurship has long been considered as a driver of innovation, a generator of employment opportunities and a potential wealth creator for both individuals and organisations. Academic literature supports the belief that with appropriate entrepreneurship education the number of would-be entrepreneurs can be increased.

This study investigated the impact of entrepreneurship education programmes (EEPs) on entrepreneurial attitudes and intentions amongst university students in the KSA. The conceptual model tested in this research was based on the Theory of Planned Behaviour.

Based on a quantitative approach, a self-administered questionnaire was distributed to two groups: participants studying entrepreneurship courses as part of their degrees (to be known as EEPs Group) and participants not undertaking any entrepreneurship studies as part of their courses (Control Group). The data collection took place at the beginning of the semester (Pre-test/t1) in April 2010 and at the end of the semester (Post-test/t2) in July 2010. After screening, a final matched sample of 491 completed questionnaires for the EEPs Group and 184 for the Control Group was used for data analysis.

The results of this empirical study revealed that the intention to become self-employed was positively and significantly correlated to attitudes regarding self-employment, to subjective norms and to perceived behavioural control. However, for entrepreneurial education, the intention to become self-employed was neither positively nor significantly correlated with new business start-up activities.

For policy-makers in KSA, the study provides useful insights into the situation of entrepreneurship education, will aid planners in universities and the KSA government to address unemployment of young by creating greater entrepreneurial awareness, and thus, hopefully, jobs through entrepreneurship activities. This study has confirmed that EEPs has a significant contribution in developing entrepreneurial attitudes among university students. Thus, entrepreneurial skills could be inculcated in the younger Saudi generation early on in their lives by institutionalising enterprising and entrepreneurship knowledge, skills and culture through education and learning starting from the high school level to the university level. In addition, there is a need for changing behaviour and intentions towards, and creating awareness about, entrepreneurship and self-employment among Saudis using different channels of communications such as the electronic media including the social media.

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I also thank to the University of Jazan in KSA for supporting and awarding me a scholarship for doctoral studies in the United Kingdom (UK).

Finally and foremost, I must acknowledge and thank my family for their patience, kindness, unconditional love and support throughout my PhD studies.

DECLARATION

I, the undersigned, hereby declare that this PhD thesis has not been submitted in support of an application for another degree, or qualification, to any other university, or institute of learning. I also declare that, I alone am responsible for the work submitted in this thesis. During the preparation of this thesis, some papers were prepared as listed below. The remaining parts of the thesis have not yet been published.

Conference/Symposium Papers Presented:

- Paper presented at Doctoral Symposia, 2013, Brunel University, UK (Received the 'Best paper Award').
- Almahdi, H., and Dickson K., (2012), "The Role of Higher Education in Promoting Entrepreneurship Education in Saudi Arabia". The 35th ISBE (International Small Business and Entrepreneurship)-2012 Conference, November 2012, Dublin, Ireland.
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- Paper presented at Doctoral Symposia, 2012, Brunel University, UK.
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- Paper presented at Doctoral Symposia, 2010, Brunel University, UK.
- Paper presented at Doctoral Symposia, 2009, Brunel University, UK.

International / Regional Conferences Attended:

- Knowledge Economy and Patents Forums Workshop, June 2012, The Bordesley Centre, Birmingham, UK.
- Global Technology Entrepreneurship-INTEL Workshop, June 2010, King Saud University, Riyadh.
- Second International Conference on Entrepreneurship in the Shade of Global Trade (ESAMION), November 2009, King Abdulaziz University, Jeddah.
- First International Conference on Entrepreneurship in Saudi Arabia, October 2009 at King Saud University, Riyadh.
- Third Saudi International Conference 2009, June 2009, Surrey University, UK.

Signature: -----

Date: -----

DEDICATION

I would like to dedicate this PhD work to my parents and family, who believed in my ability to accomplish this goal even though my family and I were living away from each other and in three different locations in the World. During my studies, I have been living with my two youngest daughters in London, while my wife resides with my youngest son in Jeddah, KSA and my eldest son and eldest daughter are both studying at a college of medicine in the south of KSA.

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ABBREVIATIONS

Abbreviation	Explanation
AKBK	Al-Sayedah Khadijah Bint Khuwailid Businesswomen Centre
ALJCSP	Abdul Latif Jameel Community Services Programs
ARAMCO	Arabian American Oil Company
AUTO	Autonomy
AVRE	Avoid responsibility
BBA	Bachelor Business Administration
BRJ	Bab Rizq Jameel
BTS	Barlett Test of Sphericity
CARE	Career
CBA	College of Business Administration
CDSI	Central Department of Statistics and Information
CHAL	Challenge
D2	Mahalanobis distance
Df	Degree of Freedom
ECOP	Economic opportunity
EEPs	Entrepreneurship Education Programmes
EFA	Exploratory factor analysis
EI	Entrepreneurship Intention
EMBA	Executive Master of Business Administration
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Countries
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
HEIs	Higher Education Institutions
HRDF	Human Resources Development Fund
IBA	Institute of Business Administration
ICT	Information Communication Technology
ILO	International Labour Organisation
IMF	International Monetary Fund
INSP	Inspiration
KACST	King Abdulaziz City for Science and Technology
KAEC	King Abdullah Economic City
KAU	King Abdulaziz University
KAUST	King Abdullah University of Science and Technology
KBE	Knowledge-Based Economy
KBS	knowledge-Based Society
KDI	Korean Development Institute
KFUPM	King Fahd University of Petroleum and Minerals
KMO	Kaiser–Meyer–Olkin

KSA	Kingdom of Saudi Arabia
KSU	King Saud University
LEMO	Learning from the module
MBA	Master of Business Administration
MENA	Middle East and North African Countries
MOHE	Ministry of Higher Education
OSCI	Occupational status choice intention
PAPR	Participate in the whole process
PBUH	Peace Be Upon Him
PEBC	Perceived Behavioural Control
PhD	Doctor of Philosophy
PMU	Prince Mohammad Bin Fahd University
RCCI	Riyadh Chamber of Commerce & Industry
RTIC	Riyadh Technology Incubation Centre
SAGIA	Saudi General Investment Authority
SAMA	Saudi Arabian Monetary Agency
SECU	Security
SERE	Self-realisation
SFG	Saudi Fast Growth
SIDF	Saudi Industrial Development Fund
Sig.	Significant
SMEs	Small and Medium-sized Enterprises
SOEN	Social Environment
SPSS	Statistical Package for Social Sciences
SUNO	Subjective Norms
TEA	Total Entrepreneurial Activity
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UAE	United Arab Emirates
UBT	University of Business and Technology
UK	United Kingdom
UNDP	United Nations Development Programme
UPRI	University Incubation Resources
USA	United States of America
WB	World Bank
WEF	World Economic Forum
WHO	World Health Organisation
WOLO	Workload
WTO	World Trade Organization
α	Cronbach's alpha

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Chapter 1: Introduction

1.1 Introduction

This chapter introduces the background, aim and objectives of the research study presented in this PhD thesis. It also highlights key components of the initial research model, as well as the context and methodology used for this study. The significance of the research is also outlined.

This study examines the impact of entrepreneurship education programmes (henceforth abbreviated as EEPs) on individuals' attitudes and intentions towards entrepreneurship. It also examines the effects of three proposed programme-derived benefits for students learning from modules, learning from inspiration and university incubation resources. Most of the prior empirical studies in entrepreneurial domain have focused on the intentions of individuals but have neglected the study of actual behaviour of an individual. To the researcher's knowledge, a few empirical studies have focused on entrepreneurial behaviour in their design (for example Kolvereid and Isaksen, 2006; Souitaris *et al.*, 2007). Apart from these, the majority of research studies have neither used a pre-test and post-test design to investigate the effectiveness of EEPs, nor included a control group. Therefore, this study has attempted to overcome these limitations and has examined the relationship between EEPs and students' intentions and subsequent entrepreneurial behaviour.

It is widely argued that entrepreneurial behaviour is intentional and so intentions may be predicted by attitudes and that intentions predict behaviour. Ajzen (1991, p. 181) defined intentions as being "assumed to capture the motivational factors that influence a behaviour; they are indication of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the

behaviour". Thus, the researcher developed a conceptual framework (Fig. 1.2) that linked students' attitudes, intentions and behaviour through the evidence of EEPs. The researcher used a quasi-experimental design that consisted of two groups of participants i.e. the EEPs Group and the Control Group. Both groups of participants were university students; however, the EEPs Group consisted of students who studied entrepreneurship courses during their degree studies while the Control Group consisted of students who did not take any entrepreneurship courses during their degree studies. Both groups participated in a pre-test at the time of starting their courses and a post-test when finishing their courses. This research was conducted in higher educational institutions (henceforth abbreviated as HEIs) offering EEPs as an integral part of the enterprise education system in Saudi Arabia.

Entrepreneurship generally, and new venture creation specifically, plays a vital role in creating employment opportunities. Of great importance is the assertion that entrepreneurship is a key activity in searching for business opportunities, creating new ventures and wealth creation, all of which will contribute to wider economic development and better resource utilisation. The significance and focus of research in this field is on the role of globalisation, social development, global competition, corporate downsizing and the emergence of knowledge-based economies in both developing and developed economies have all rapidly increased in recent years. In that context, entrepreneurial activities are being widely supported to achieve economic and social development in many countries such as Sweden and the United States of America (USA).

With this belief in mind, this research study set out to investigate, within a particular developing economy, namely that of Saudi Arabia, the consequences of EEP on students' entrepreneurial awareness and intentions.

1.2 Research Background

In recent decades, the importance of entrepreneurship has been recognised because of its proven effects on the society, the economy and individual citizens not only in the developing countries but also in the developed countries. Many researchers have focused on this domain because of its importance as a source of innovation, development of new small and medium businesses, creation of employment opportunities and wealth creation for individuals and societies (Dana, 2001). Due to the positive influence of entrepreneurship on the general growth of economies, it is considered as the engine that drives the economies of the majority of nations (Gorman *et al.*, 1997; Navarro, Torres and Iglesias, 2009).

There has been a positive impact of entrepreneurship on the economies of both developed and developing countries despite differing political and economic choices and systems (Aidis, 2005). For example, specific impacts have occurred through regional or sector initiatives via particular government agencies set up specifically for those purposes (Foelster, 2000; Shah *et al.*, 2002; Audretsch and Keilbach, 2004); whereas in other economies, broader entrepreneurial support have been directed towards, and hopefully have positive impact on, specific population groups such as women, unemployed, disabled (Wong *et al.*, 2005; Morris *et al.*, 2006; Koellinger and Thurik, 2012; Block, Sandner *et al.*, 2013; Powell and Eddleston, 2013) or more likely in developing economies - the impact of entrepreneurship development can be seen in wider infrastructural development by creating a wider base of small new firms that help create a more diverse economy and a more competitive market-based economic system (Giarmatino, 1991; Koster and Rai, 2008; Gelb *et al.*, 2008; Sautet, 2012; Brixiova, 2013). In fact, the very essence of entrepreneurship lies in the creation of new commercial opportunities that may generate more employment opportunities (Rae, 2007), which will contribute to economic growth and development.

From the economic development perspective, entrepreneurship is a critical input because it encourages innovative thinking, generates job opportunities and plays

the role of ‘stabiliser’ for countries, cultures and societies (Formica 2002; Postigo and Tamborini, 2002). Thus, entrepreneurship needs a planned effort for the systematic development. Researchers have thus suggested that specific and concerted actions needed to solve problems can be learnt by, and taught to, potential entrepreneur individuals through education and training programmes (Gorman *et al.*, 1997; Young, 1997; Henderson and Robertson, 2000).

However, in this context, the key factor is young people, who are recognised as potential entrepreneurs, are mostly engaged in education and training, and whose ratio in the population is increasing. In Saudi Arabia, young people aged 15 years to 29 years comprise about 28% of the total population and 30% of the native Saudi population (see Table 2.1).

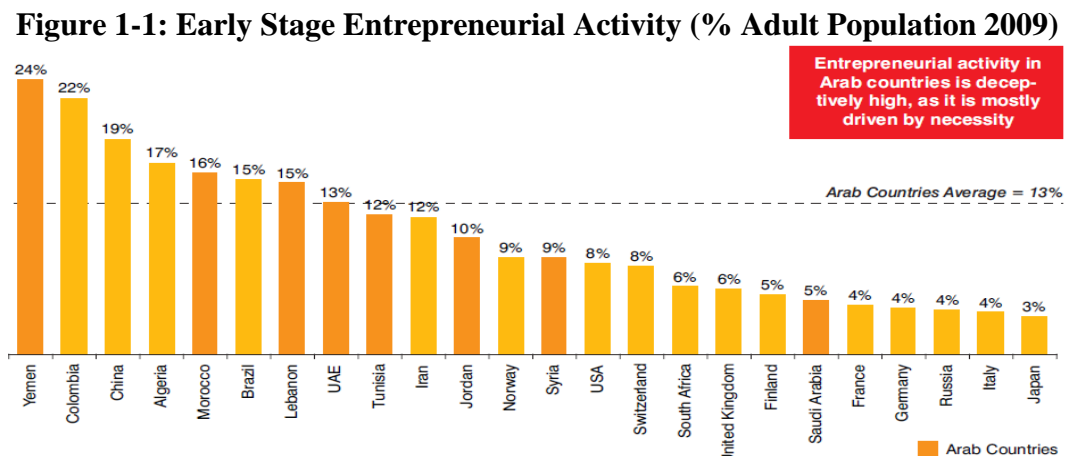
According to the International Labour Organisation (ILO, 2014, p.2) the global unemployment level was over 200 million in 2013, an increase of 5 million in the previous year and is projected to increase by another 13 million by 2018. More pertinent to the context of this study, global youth unemployment has also significantly increased, and disproportionately compared to the general population, in the last few years, so much so that, “the global youth unemployment rate has reached 13.1 per cent, which is almost three times as high as the adult unemployment rate. Indeed, the youth-to-adult unemployment ratio has reached a historical peak” (ILO, 2014, p.2).

In Saudi Arabia, unemployment of young people aged 15-29 years has reached to about 0.5 million, which equals to about 76% of total unemployed labour forces aged 15 years and above (Table 2.2). The challenge therefore is to reduce this youth unemployment rate urgently and EEPs may well be a significant way of doing so.

The lack of unemployment is so crucial for developed and developing economies. ILO reports reveal that unemployment rates remain far above the historical levels in the developed economies and European Union region (8.6 per cent in 2012 versus an average of 6.9 per cent between 1998 and 2007), while in nearly every

developing region, unemployment rates in 2012 were actually below average in comparison with the decade preceding the crisis (p-32). The slowdown of economic growth is expected due to stable oil prices and the slowing down of global trade. This slowdown in growth is set to raise unemployment in the Middle East. According to the ILO report, the youth unemployment rate was 28.1 per cent in 2012, and was expected to increase further as the regional economic growth is slowing down (Global Employment Trends 2013, p.81).

Moreover, in the Middle East and North African (MENA) countries, the drive for entrepreneurship and the strategy to tackle unemployment seem to revolve around the Arab youth. As reported by the World Economic Forum (WEF) (2011, p.4), “Large-scale transformations in some countries, combined with social dynamism particularly among the youth, have clearly put the employment challenge on the top of the regional agenda, with entrepreneurship being a key imperative”. In the MENA region, averagely 13% of the working population is involved in entrepreneurial activity, which is higher than in some developed countries such as the USA, Germany or Japan (Figure 1.1).



Several researchers have stressed on the importance of developing and fostering the state of mind and skills of an individual to embrace entrepreneurship (Formica, 2002; Hannon, 2005; Li, 2006). According to Reynolds *et al.* (1999, p. 26), appropriate education and training programmes in entrepreneurship can be

expected to increase the number of people becoming entrepreneurs, owing to the belief that a better educated population will achieve a higher level of entrepreneurial activity.

The literature reveals various factors of relevance, consisting of the combination of personal attributes, traits, background factors, experience and disposition, all of which influence individuals in the decision to start a new business (McClelland, 1961; Brockhaus, 1982; Shane et al., 2003; Baron, 2004; Arenius and Minniti, 2005; Dordevic et al., 2010). Researchers have also developed and tested many models relating to individual behaviour, intentions and situational factors (Gartner, 1985; Bird, 1988; Boyd and Vozikis, 1994). They have also considered entrepreneurship-oriented intentions and attitudes as precursors to entrepreneurial actions (Krueger and Brazel, 1994; Kolvereid, 1996). Developing entrepreneurial attitudes and intentions is achievable through developing targeted education, systematic development and planned efforts, which is a view that has been expressed in various researchers (e.g. Vesper, 1994; Gorman *et al.*, 1997; Wilson *et al.*, 2007). Education transfers knowledge and facilitates the acquisition and development of relevant skills, which can enhance the self-efficacy and effectiveness of the potential entrepreneur (Bandura, 1986).

There has been a rapid development in enterprise / entrepreneurship education in HEIs, with a noticeable increase in the number of courses, concentrations, majors, endowed chairs and programmes in universities and colleges worldwide (Gibb, 1987; Johanson, 1988; Gibb, 2002; Kuratko, 2005; Rice, 2007; Manolova *et al.* 2008; Albornoz, 2009; Neck and Greene, 2011; Matlay, 2009; Rae *et al.*, 2012). According to Matlay and Carey (2007), this significant growth in the number of courses offered and their contents reflect the extensive governmental belief in the positive influence of entrepreneurship on a nation's socio-economic and political infrastructures. Furthermore, the increased interest in the development of EEPs and the recognition of the need for such programmes highlight the abundance of research that needs to be done into what makes entrepreneurs and how entrepreneurial characteristics can be acquired (Gorman *et al.*, 1997).

Nabi and Holden (2008) take the view that it is human capital investment which causes students to become ready to start new businesses; this is done by allowing students to gain experience and to acquire the skills and knowledge required to create and develop new ventures. With this noted, the role of universities and other educational institutions can be seen in terms of supporting and taking charge of the entrepreneurship learning process. Entrepreneurship education plays a major role in influencing students' preferences to become entrepreneurs through improving their attitudes, perceived behavioural control and intentions towards entrepreneurship (Wilson *et al.*, 2007).

There is a recognised need to develop a framework and investigate, evaluate and accordingly compare programmes in terms of objectives, target audiences, formats and pedagogical approaches for designing potential EEPs. Aside from this, there is also a need to test frameworks, models and programmes empirically in different cultures in order to establish their generalisation. In line with the literature and recent increased interest of researchers regarding the link between entrepreneurship and education, this study focused on investigating the impact of EEPs on the development of intentions towards self-employment, with the idea that individual's intentions are effective in predicting the planned behaviour. With the support of the TPB, behavioural intentions are predicted through consideration of attitudes towards certain behaviours, subjective norms and perceived behavioural control. In this vein, the researcher has argued that attitudes and beliefs predict intentions, and that intentions predict behaviours. The researcher has attempted to establish a link between the development of these attributes and entrepreneurship education. It is timely to confirm whether entrepreneurship education increases students' intentions to become self-employed.

1.3 Research Aim and Objectives

The aim of this study was to investigate the impact of EEPs on Saudi university students' intentions and attitudes towards becoming self-employed. The TPB was applied empirically, with the study conducted in HEIs in the Kingdom of Saudi

Arabia (KSA). Based on the literature, the researcher conceptualised this research study and compared the attitudes and intentions of students who have taken entrepreneurship courses and those who have not studied the courses as a part of their university degrees.

More specifically, this research has attempted to examine the relationship between EEPs and students' intentions and attitudes towards entrepreneurship in the context of Saudi Arabia. The major objectives of this study were as follows:

- Objective 1:** To explore the effects of attitudes, subjective norms and perceived behavioural control factors on the students' intentions towards becoming self-employed.
- Objective 2:** To investigate the intention to become self-employed through necessary start up activities after taking EEP courses.
- Objective 3:** To test the intention to become self-employed through TPB factors after taking EEP courses.
- Objective 4:** To evaluate the difference between TPB factors and the intention to become self-employed in the control group during the pre and the post experience periods.
- Objective 5:** To examine the effect of learning from EEP modules on attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control in the EEP group.
- Objective 6:** To examine the effect of learning from inspiration on attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control.
- Objective 7:** To examine the effect of using university incubation resources on attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control.

1.4 Research Questions

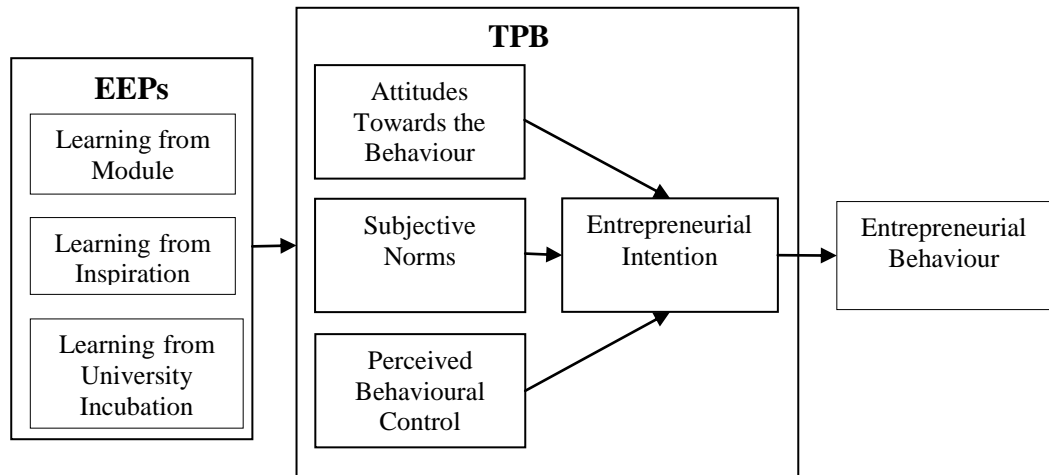
Based on the aforementioned research objectives, the central research question for this study was: Do the EEPs offered by universities in Saudi Arabia positively influence Saudi students' intentions to become self-employed? In addition, this question has been broken down into the following sub-questions:

1. Do attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control positively affect university students' intentions to become self-employed?
2. Do students develop the intention to become self-employed through the necessary start up activities after taking EEP courses?
3. What is the effect of TPB factors on developing the entrepreneurial intention after taking EEP courses?
4. What is the difference between TPB factors and the intention to become self-employed in the control group in the pre and post experience periods?
5. Does learning from the EEP modules affect attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control?
6. Does learning from inspiration affect attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control?
7. Do using university incubation resources affect attitudes and subjective norms with respect to becoming self-employed and perceived behavioural control?

1.5 Research Model

The research model used in this study is shown in Figure 1.2. The researcher developed this model on the basis of the TPB and focused on assessing the impact of EEPs in developing students' attitudes and intentions regarding entrepreneurial behaviour. In the model, the independent variables show whether the EEPs involve learning from course modules, learning from the inspiration or university incubation resources. The dependent variables relate to the antecedents of entrepreneurship behaviours, including attitudes towards behaviours, subjective norms, perceived behaviour control and entrepreneurial intentions.

Figure 1-2: Research Model



1.6 Context and Respondent Base of the Study

This study was aimed to explore the value of EEPs in Saudi Arabia, specifically in the higher education sector. This was studied through investigating the extent to which HEIs, through all their capabilities, can influence the intentions of students to become self-employed. The study was carried out in public and private sector HEIs where entrepreneurship courses were being offered at the undergraduate and postgraduate levels. The researcher considered a regional balance in the selection of the institutions in order to cover almost all regions of the country.

From the selected institutions, all students who were engaged in taking entrepreneurship courses at degree level and those students who did not take these courses were included in this study. The participating students were divided in to two groups as follows. The first group included those participants who were engaged in taking entrepreneurship courses at degree level and this group was named as the entrepreneurship education programmes group (EEPs Group). The second group consisted of those students who did not take any entrepreneurship

courses during their degree studies and the group was named as the Control Group. Data were collected for both groups at two different times: Pre-test , when students were starting their courses, and Post-test , when students had completed their studies. The participating students belonged to different study areas such as the business administration, home economics, engineering and industrial management.

It is anticipated that this research study can provide useful insights into the state of entrepreneurship education for policy makers and planners about the young generation in universities and government departments with a proof of the effectiveness of entrepreneurship education in terms of contributing to the process of creating entrepreneurs. This study analysed the role of entrepreneurship education from different points of view with the support of the results of a survey. This study has also sought to achieve the following goals: (a) review the pertinent literature on different aspects of entrepreneurship and entrepreneurship education; (b) establish the empirical relationship between the requirements of entrepreneurs and the courses offered by universities in Saudi Arabia; and (c) determine EEP variables and build a conceptual model of best practices for HEIs in promoting entrepreneurship education to prepare university students for choosing entrepreneurship as a viable future career. The study also involved defining implications and initiatives and suggesting recommendations as part of contribution in the development of the knowledge base.

1.7 Methodology and Methods Used for the Study

This study employed the quantitative methodology to explore and investigate the relationship between EEP factors and university students' intentions towards self-employment in the context of Saudi Arabia. In this study, a conceptual framework was developed through the review of extant existing literature, which included development of rational hypotheses accordingly. Examining these hypotheses required a methodological approach, in which a philosophical stance is essential in order to gain understanding of the justification for the selected approach. The

purpose of the research methodology is to explain and justify the methods and research design to be applied, empirically confirming the proposed conceptual framework. This approach requires a rationale, which justifies the choice of particular methods and procedures for conducting the study.

Research is a systematic technique of thinking whereby special tools such as survey instruments and procedures can be employed in order to examine a problem or find answers to a research question. Research begins with identification of a problem, which requires data or facts that are to be collected and then analysed critically. The conclusion(s) reached are based on the actual evidence. The data could be quantitative or qualitative and should seek to establish not only 'what' but also 'how' and 'why'. However, one important thing to consider is the need to conduct research through appropriate methods with the support of reliable and validated facts.

There are two important research paradigms i.e. the positivist and the phenomenological. Many researchers have suggested that a positivist approach is preferable in the domain of entrepreneurship (Kolvereid, 1996; Alsos and Kolvereid, 1999; Souitaris *et al.*, 2007; Brush *et al.*, 2009; Nabi *et al.*, 2010). The researcher therefore adopted the positivist approach as an appropriate paradigm for this research study.

From the methodological perspective, the researcher employed the quantitative approach with a survey instrument for data collection supported by the literature.

The survey instrument (questionnaire) was adapted from a large pool of items that were widely applied, validated and accepted in the previous EEP literature (e.g. Johannisson, 1991; Zahra, 1993; Kolverid, 1996; Souitaris *et al.*, 2007). Different scaling techniques were used in the survey instrument to provide a variety of options to measure the participants' attitudes and intentions. By applying a variety of Likert scales, researcher illustrated the intensity of respondents' feelings on a subject through the reliability and validity of survey instrument. The survey instrument comprised nine sections: demographic background, employment status

choice attitude (reasons to be an organisational employee and reasons to be self-employed), subjective norms, perceived behaviour control, occupational status choice intention, learning from modules, learning from inspiration, using university incubation resources and start-up activities. Detailed description of the survey instrument is presented in Chapter 4.

1.8 Significance of the Study

Many countries have recognised the importance of entrepreneurship in regard to the national economic growth because of a significant link between the entrepreneurship and increase in innovative thinking and generation of job opportunities. An individual can learn entrepreneurship through education and training programmes. However, there is a lack of research linking education with growth in entrepreneurship in regard to the creation of entrepreneurship amongst university students (Peterman and Kennedy 2003). Although links between entrepreneurial education and successful entrepreneurial activity are not definitive, there is research suggesting such a link. However, Dickson *et al.* (2008) argue that the authors of two meta-analyses of past research (van der Sluis *et al.*, 2004, 2005) appear to contradict the prevailing assumptions, and challenge several studies reporting positive relationships between education and entrepreneurship. Nevertheless, education is viewed as an important determinant of the selection of entrepreneurship by an individual, as well as for entrepreneurial success for firms and the rate of the establishment of new firms in an economy. The present study has attempted to extend the research work reported in previous studies by Krueger and Carsrud (1993), Kolvereid (1996b), Luthje and Franke (2003), Fayolle and Gailly 2005, Fayolle *et al.* (2006) and Souitaris *et al.* (2007) by undertaking an in-depth examination of the effect of entrepreneurship education on university students' desires to choose entrepreneurship ventures as career alternatives.

One of the significances of this study is that it has empirically investigated the link between individuals' attitudes and their intentions to become self-employed.

Following the TPB, the researcher linked the relationships between attitudinal behaviour factors in order to empirically examine the intentions of students who took entrepreneurial courses at the university level. The importance of this work represents a significant departure from previous work, such as prior research from the economics perspective that has been focused on why people become self-employed, which has typically relied on theoretical arguments. In addition, the past research into when people become self-employed has investigated, at the macro-economic level, the environmental and demographic factors that influence individuals' intentions towards or away from self-employment.

In spite of the need for more entrepreneurial education, little is known about the attitudes and intentions of potential entrepreneurs towards entrepreneurship. Keeping in view of covering all geographical locations of the KSA, this research was carried out across a selected sample of HEIs in the country. In addition, the size of the sample was large (n=349) that can be considered as the representative of the whole research population; therefore, the findings of this research can be generalised to all HEIs in the country. However, the results of this study could be cautiously applied to HEIs in other countries, especially the Middle Eastern, Arabic and Gulf countries.

Originality of this research can be claimed on the basis that it involved development of a comprehensive theoretical framework that examined the factors influencing students' attitudes and intentions and the benefits of entrepreneurship courses. It can be claimed that this is the first time this conceptual framework has been tested both theoretically and empirically. A further novel contribution of this study is the testing of the TPB towards the development of entrepreneurial intentions for the choice of self-employment as a career. The second significant contribution of this research can be seen in the results of an empirical attempt to complement the existing, mainly conceptual, literature on the role of entrepreneurship education in the development of the intentions of students towards self-employment.

This study has shown that it is possible to design a test based on attitudinal and behavioural approaches and to measure entrepreneurial intentions in university students, which could take into account a number of other factors that could influence university students' intentions towards entrepreneurship. This study was carried out in Saudi HEIs, where (as identified in the literature) less research has been done, and so it provides a contribution to the body of knowledge.

The most important significance of this study is its contribution in providing useful insights into the situation of entrepreneurship education for policy makers and planners in universities and government departments in Saudi Arabia in order to overcome the graduate unemployment problem. The outcomes of this research are expected to have significant policy implications for the future development of entrepreneurship programmes for young people, especially students at universities, in order to increase students' participation in business activities and to increase the number of entrepreneurs among the younger generation. This study is the first of its kind to investigate the impact of entrepreneurship education in Saudi Arabia. Therefore, this study significantly contributes to the literature on entrepreneurship education by examining the impact of such education in the context of a developing country i.e. Saudi Arabia, which also reflects the importance of this study.

1.9 Terminology and Definitions

In research, it is important to clarify the terms and variables used in a study as they have to be operationalised and measured (Veal, 2005). To ensure a clear understanding of the terms and concepts used in research studies, a number of operational definitions have been given by different researchers (Hagen, 2004). Therefore, various relevant terms and concepts used in this research study are defined as follows.

Entrepreneur: An individual who identifies and acts on an opportunity that others do not and is then involved in entrepreneurial activities, such as establishing a

new firm or entering into self-employment (Rae *et al.*, 2012).

Entrepreneurship: Edward and Muir (2006) have defined this term as the process of creating and running a new business or a new venture activity. It can be categorised as new business organisation, the expansion of any existing business of any size (micro, small, medium or large) or as self-employment (Matlay, 2005b). According to Rae *et al.* (2012), it is an application of enterprise skills and attributes in a specific context.

Enterprise: This term has been described as follows: “Students learning to use the skills, knowledge and personal attributes required to apply creative ideas and innovations to practical situations. These include, for example, initiative, independence, creativity, problem solving, identifying and working on opportunities, leadership, and acting resourcefully to affect change. Enterprise is also used as a noun to describe a small or new business or community venture.” (Rae *et al.* 2012, p. 382).

Employability: The UK Higher Education Authority defines the term employability as: “a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (Pegg *et al.*, 2012, p. 4).

Entrepreneurship education: This term is defined as the process of developing “a range of skills and attributes that is not innate through educational programmes” (Kanyi, 1999, p. 40). It forms knowledge that fosters the state of mind and skills of an individual to embrace entrepreneurship.

Entrepreneurship education programmes: It is defined as a foundation of individual development to foster appropriate mindsets and to increase relevant skills.

Attitude towards self-employment: This term is defined as the degree to which a person has a favourable or unfavourable evaluation of self-employment (Ajzen,

1991).

Attitude towards working as an employee for an organisation: It means the degree to which a person has a favourable or unfavourable evaluation towards working as an employee for an organisation (Ajzen, 1991).

Subjective norms: This term is defined as a social pressure to perform a behaviour or not, or the subject's perception of other people's opinions of the proposed behaviour (Ajzen, 1991).

Perceived behavioural control: It is defined as the perceived ability to perform behaviour through the perception of opportunity, that is, the perceived ease or difficulty of performing the entrepreneurial activity (Ajzen, 1991).

Learning from modules: It is a part of university courses. It is defined as the learning to recognise and act on opportunities, and interacting socially to initiate, organise and manage ventures (Souitaris, 2007).

Learning from inspiration: This term is defined as the process of placing inspiration for some idea or purpose into the mind of a person, leading to the awakening or creation of some feeling or impulse (Souitaris, 2007).

Utilisation of university resources: This means the support facilities that students can use during the taught courses at universities. These can be from related groups in the form of funds, networks, entrepreneurship centres, business incubators, a broad supply of EEPs, institutes and specialised libraries (Souitaris, 2007).

1.10 Statement of Problem and Scope

Entrepreneurship is a pivotal term used for employment generation, economic regeneration and economic development. In the modern times, domain researchers and field experts have recognised the entrepreneurship field as a growing arena centred on fostering an entrepreneurial culture and encouraging entrepreneurial

mind sets, entrepreneurial skills and awareness of career opportunities (Seikkula-Leino *et al.*, 2010; Rae *et al.*, 2012). The importance of entrepreneurship and its education is related to the development of graduate careers and employability, as education is already in crisis in relation to graduate employment (Tapscott, 1998; Nabi *et al.*, 2006; Pittaway and Cope, 2007; Millman *et al.*, 2008; Matlay, 2009; Rae *et al.*, 2007, 2012;). It is very difficult for graduates to seek jobs, owing to continuous social and economic change, new management requirements and new skill requirements. As such, graduates need to adopt innovative approaches in their searches to locate suitable jobs and graduate career paths.

The intentions of individuals are extremely important in starting up a business; however, the entrepreneurship literature shows that intentions are best predicted by attitudes, which are based on attitudes towards self-employment, subjective norms and perceived behavioural control. In this context, the TPB aims to predict individual attitudes. Importantly, attitudes predict intentions and intentions predict behaviours. In order to assess the extent to which attitudes and beliefs predict intentions and the prediction of behaviours by intentions, the researcher has attempted to establish a link between the development of these attributes and entrepreneurship education.

In this study, the researcher has focused on confirming whether entrepreneurship education increases students' intentions to become self-employed, particularly in the context of a developing economy i.e. Saudi Arabian economy. From this theoretical perspective, the essence of this study is centred on assessing the effect of EEPs on students' behaviours and intentions. In order to investigate the impact of entrepreneurial education on individuals' career choices, the researcher adopted the TPB, which suggests that human social behaviours are reasoned, controlled or planned in the sense that they take into account the likely consequences of the considered behaviour (Ajzen and Fishbone, 2000).

The population of Saudi nationals is expected to reach 25.81 million by 2024. The population growth rate in the country is recognised as being approximately 3.2 per year, with the median age estimated at 17.3 years. Unemployment among Saudi

nationals is unlike unemployment in most other countries where it usually results from poor economic conditions. This cannot be said of Saudi Arabia. Based on the work of Al-Gaith and Al-Ma'ashoug (1997) and Al-Sheikh (2001), Al-Shammari (2009) provided a list of reasons behind Saudi nationals' unemployment. For example, the presence of roughly 4 million non-Saudi workers in the Saudi labour market have reduced employment opportunities for native Saudis; the reduction in the country's annual economic growth rate; the country's high birth rate; the Government sector's declining role as the major employer of indigenous Saudis; the culturally specific negative attitude towards certain occupations in the labour market; the mismatch between training and education outcomes and labour market skills and demand; the lack of accurate, up-to date information and statistics on the labour market; the inconsistency of government bodies regulating and supervising the labour market and the low wages paid to Saudis entering the private sector.

Generally, it is claimed that Saudi graduates lack the skills and knowledge that are the requirement of the labour market (Yamani, 1997). This is an important factor, as are gender discrepancies (lack of women in the labour force) and the large amount of immigrant labour in the country. It has been argued that the Saudi education and training system has failed to meet the needs of the economy with half of the Kingdom's universities focusing on religious studies and only 12 percent of Saudi students graduating in engineering and science, while 42.2 percent graduate in social and religious studies (Diwan and Girgis, 2002). In addition, Ramady (2005) suggested reasons related to Saudi attitudes, which make them less favoured in the private sector compared to the foreign labour.

Nowadays, unemployment is one of the major problems of all economies in general and of the Saudi economy in particular. Graduates' preference for employment as opposed to self-employment, combined with the current university education systems that promote rote learning, are believed to be the most important factors amongst numerous factors contributing to the problem of graduate unemployment (Wang and Wong, 2004). The domain experts and

researchers believe that entrepreneurship stimulates the generation of employment opportunities and wealth creation (Garavan and O’Cinneide, 1994; Kong, 1996; Dana, 2001; Rae, 2008; Rae *et al.*, 2010). A big and most compelling issue is to create jobs for the workforce generally and for young graduates specifically, which might be impossible for many governments. However, the Saudi government considers entrepreneurship development as a possible solution to the problem of graduate unemployment.

Globally, many universities offer entrepreneurship as a taught subject, and academic interest in entrepreneurship has grown to a significant extent in all economies. In Saudi Arabia, some universities in both the public and private sectors offer entrepreneurship courses exclusively. The number of students taking entrepreneurial courses is also on the rise not only for business schools at the undergraduate and graduate levels but also in other fields, such as engineering and information technology (Gibb, 2002; Rae, 2007). The fast growth of entrepreneurship education provides evidence that those who attend entrepreneurship courses have more positive attitudes towards venturing into new businesses than those who attend other courses (Klofsten, 2000; Galloway and Brown, 2002).

In Saudi Arabia, entrepreneurship education is expected to play a leading role in developing and producing more graduate entrepreneurs. Universities have been urged to promote the entrepreneurial spirit amongst their students through a series of education programmes and courses in entrepreneurship. Additionally, academics and university authorities have to think about and constantly review what is to be taught, how to teach it and how to prepare younger generations for the forthcoming challenges.

1.11 Thesis Structure

This thesis is divided into eight chapters as follows:

Chapter 1: Presents the research background, the problem statement, the research aim and objectives, research questions and model, the context and the respondent base of the study, the significance of the study, and the terminology and definitions. It continues by presenting the methodology and methods and a statement of the scope of the research problem.

Chapter 2: Presents the study context, including an overview of Saudi Arabia in regard to its historical background, population, religion and governmental system. It also presents an overview of the economic development planning, manpower and employment development in Saudi Arabia, as well as the education system and entrepreneurship in the country.

Chapter 3: Presents a review of the literature on entrepreneurship education and explains various concepts of entrepreneurship and entrepreneurs. It explores the importance of entrepreneurship, entrepreneurial education and its development, the role of HEIs in promoting entrepreneurship, the main perspectives of entrepreneurship, and schools of thought on entrepreneurship, research studies on entrepreneurship education and the significant effects of entrepreneurship education on individuals and the research gap.

Chapter 4: Presents the conceptual framework of this study, wherein the researcher describes the domain of entrepreneurship, its impact on individuals, the link between entrepreneurship and HEIs, the conceptual approach for the study and the theoretical framework. It presents the research hypotheses that were tested in an attempt to provide answers regarding entrepreneurial attitudes and intentions and the benefits of EEPs (learning from study modules, inspiration and university incubation resources).

Chapter 5: Presents the methodology, research philosophy and research approach adopted for the study. It provides justification for the application of the quantitative approach and describes the research design, the research instruments, the measurement scales, the research protocol, the reliability and validity testing,

the main study, the data collection process and the data analysis techniques. It then describes the hypotheses testing and ethical considerations.

Chapter 6: Presents the data collection process, the data screening, the characteristics of the respondents, the reliability and validity testing, the factor analysis and finally the results of hypotheses testing.

Chapter 7: Presents the discussion of the study that includes the discussion of the study population and the sample issues, the measurement scale purification process, the participants' demographic characteristics, and discussion of the study findings (including entrepreneurial attitudes and intentions and the benefits of EEPs).

Chapter 8: It is the last chapter, which begins with a short introduction, which is followed by presentation of theoretical, policy and methodological implications of the research study. The theoretical and methodological limitations of the study are also explored. The chapter concludes with recommendations for future research.

Chapter 2: Research Context

2.1 Introduction

The first section of this chapter provides an overview of the KSA and its demographic features. The second section presents a review of the economic development, the five year economic development plans, and manpower and employment development in the country. Next a review of the higher education system in the KSA is presented. Finally, an appraisal of entrepreneurship in the country is presented.

2.2 Overview of Saudi Arabia

The KSA is situated at the furthestmost part of south western Asia. Being the largest country in the Middle East, the KSA occupies 2.2 million square kilometres of the landmass, which are almost four-fifths of the Arabian Peninsula. The borders of the country are the Red Sea on the western side, the Arabian Gulf in the east, to the north are Jordan, Iraq and Kuwait and to the south are Yemen and Oman. More than 95 percent of the country consists of desert and semi-desert areas. However, on its Red Sea coastline, the KSA has greener areas with mountains and forests in its south-western corner. In the eastern part of the country, a plateau begins with the great Nufud desert in the north and continues along the Arabian Gulf. It ends in the world's largest sand desert known as Al-Rub Al Khali (Empty Quarter) in the south. The Central province, the heartland of the peninsula, starts from the west of this plateau and is famous for its spectacular escarpments, gravel and desert where the city of Riyadh, the capital of the country is situated. The city has population of about six million. The holy cities of Makkah, Madinah and Jeddah are situated in this western region. Jeddah is the second largest city with a population of about four million and it is the commercial capital of the country, with a cosmopolitan population and outlook developed from centuries of contact with pilgrims from all parts of the

Muslim world. The city is the gateway for Muslim pilgrims arriving by air or sea to perform Hajj (the Pilgrimage) or any other liturgical duties in Makkah and Madinah - the holy cities of Islam. The industrial city of Yanbu is in the north of Jeddah.

The country is the largest oil producer in the world and has the world's largest reserves of oil. Petroleum and its derivatives are found in the country's eastern region in the cities of Dhahran, Alkhobar, Dammam and Jubail. Other famous cities include Tabuk in the north, Abha, Khamis Mushait and Jazan in the south and Buraidah, the capital of Al-Qaseem province, in the central region (Al-Farsi, 1998).

This country is rich in mineral resources that have been found in many geographical locations; however, crude oil is the main mineral resource, with estimated reserves of 250 billion barrels, which represent more than one-quarter of the world's known resources. Apart from oil, the country holds a large number of other mineral deposits like zinc, gold, iron, copper, chromium, titanium, tungsten and lithium (Alkeireidis, 2003). The Gulf Cooperation Council (GCC) was established in the country with other oil rich gulf countries such as Qatar, Bahrain, Kuwait, Oman and the United Arab Emirates (UAE) (Achoui, 2009). Apart from the cooperation with other Gulf countries, the KSA has also played a significant role in the trade with other countries for centuries. Taking advantage of its strategic location near the sea, trade routes were developed to transport goods between India, China and Europe.

2.2.1 Historical Background

The founder of Saudi Arabia, King Abdulaziz Al Saud, succeeded in unifying the country into a Kingdom and founded modern KSA on 23rd September 1932. After the death of King Abdulaziz Al Saud in 1953, his legacy continues through his direct descendants who rule KSA to this day. According to the Basic Law, adopted in 1992, the KSA is a monarchy ruled by the male descendants of King Abdulaziz Al-Saud. During the reign of the Al Saud family, the country has made tremendous progress that can be seen while travelling through the country where both new and old civilisations may be seen side by side. The Kingdom is well known as an Islamic State and the centre of the Muslim world (Al-Farsi, 1998). The Holy Qur'an is the constitution of the

country that is governed on the basis of Islamic law (Shariah). Arabic is the accepted national language. More specifically, Saudi Arabia is the homeland of Islam and the site of its founding by the Prophet Muhammad - Peace Be Upon Him (PBUH) – who was born in Arabia in 570 AD). Millions of Muslim pilgrims visit the holy cities of Makkah and Madinah (Mecca and Medina respectively) each year as part of their religious observance (Champion, 2003).

2.2.2 Demographic and Socio-economic Profile

Total population of Saudi Arabia was about 24 million according to the latest demographic survey of the country conducted in 2007 (Table 2.1). Population of the country is increasing at the annual growth rate of 2.7 per cent and it has reached 29 million at present (World Health Organisation, 2014). The majority of the population (82.6%) is living in urban areas. About 28 per cent of total population is aged between 15 years and 29 years of age (Table 2.1).

The nation is largely dependent on the economic activities of oil industry and 50 per cent of the gross domestic product (GDP) comes from oil production. Nevertheless, the oil sector employs no more than 4 per cent of the labour force. There is a serious challenge to change the Kingdom's financial and economic model from being founded on the natural wealth to one based on the capitalistic economic model to reflect changing demographics and the needs of the younger generation, and more cosmopolitan population.

However, Saudi Arabia is steadfast in believing that the best solution is to encourage private business. There are clear indications in Saudi's 7th and 8th Development Plans (2000-2005 and 2005-2010 respectively) that the country has continued proactive development plans to promote the private, independent business sector. Due to urbanisation and education, the birth rate has declined to a moderate 2 per cent in the country yet the population is expected to increase to 31 million by 2020 (Cordesman, 2003). The high growth rate will increase the pressure on the health, social and economic resources of the country. Development of national human resources has been given the highest priority during successive development plans. This is being addressed

through the continuous development of work skills / capabilities, qualitative and quantitative expansion of education programmes, technical education and vocational training.

Table 2-1: Saudi Arabian Population by Sex, Age Groups and Nationality (Saudi/Non-Saudi)

Age Group	Saudi			Non-Saudi			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Less Than 1	217852	213681	431533	43509	42074	85583	261361	255755	517116
1-4	938978	909702	1848680	193525	190744	384269	1132503	1100446	2232949
5-9	1085018	1072622	2157640	226211	211640	437851	1311229	1284262	2595491
10-14	1036749	1037494	2074243	185078	178119	363197	1221827	1215613	2437440
15-19	971800	952298	1924098	141749	139168	280917	1113549	1091466	2205015
20-24	905027	879874	1784901	208059	149968	358027	1113086	1029842	2142928
25-29	763820	761580	1525400	552876	226871	779747	1316696	988451	2305147
30-34	647697	645973	1293670	779134	301120	1080254	1426831	947093	2373924
35-39	528670	531588	1060258	786179	246317	1032496	1314849	777905	2092754
40-44	438783	426304	865087	566723	134489	701212	1005506	560793	1566299
45-49	351698	334441	686139	376980	73975	450955	728678	408416	1137094
50-54	274447	266932	541379	224563	46724	271287	499010	313656	812666
55-59	201939	190868	392807	108546	26346	134892	310485	217214	527699
60-64	150464	147492	297956	42841	14600	57441	193305	162092	355397
65-69	103314	107859	211173	17508	9063	26571	120822	116922	237744
70-74	88901	77643	166544	10844	8521	19365	99745	86164	185909
75-79	52531	46883	99414	6099	3582	9681	58630	50465	109095
80+	63593	68849	132442	6464	4261	10725	70057	73110	143167
Total	8821281	8672083	17493364	4476888	2007582	6484470	13298169	10679665	23977834

Source: Central Department of Statistics and Information (2007)

2.2.3 System of Government

The central institution of the KSA government is the Saudi monarchy. The Basic Law of Government adopted in 1992 declared that KSA is a monarchy ruled by the male descendants of the first king, the founder King Abdulaziz Al Saud. The leading members of the royal family choose the king from among themselves with the subsequent approval of religious leaders. The Basic Law proclaims that the Qur'an is the constitution of the country, which is based on the

Shariah (Islamic Law). The king's powers are theoretically limited within the bounds of Shariah and other Saudi traditions. He also must retain a consensus of the Saudi royal family, the ulema, and other important elements in Saudi society (Al-Rasheed, 2002; Conservapedia, 2013).

2.3 The Economic Features of KSA

When the KSA was founded in 1932, its economy depended mainly on income from the Muslim pilgrims visiting the holy places of Makkah and Madinah. A simple agricultural base via desert husbandry also complemented the country's income (Champion, 2003). Economic interactions with the outside world were limited mainly to the neighbouring countries centred on the coastal cities of the Red Sea and the Arabian Gulf.

In 1936, oil was discovered in the eastern region of the KSA and by 1938, when commercial production of crude oil had commenced, the country began to progress economically. The Second World War put on brakes on the exploration of oil but intensive production was resumed in 1946 onwards. More than 90 per cent of the country's export earnings come from oil (Ramady, 2005). A huge petrochemical sector has been developed in the coastal cities of Jubail in the east and Yanbu in the west (Al-Farsi, 1998). Substantial investment has been made in the development of the key religious sites to increase the capacity to host the foreign pilgrims. Non-religious tourism to different parts of the country has also been encouraged (Al-Farsi, 1998).

The economic health of the country has not been characterised by steady growth over the past six decades but rather by periods of recession and periods of "Tafra". Tafra, literally meaning "the take off", is a term used locally to describe the explosive growth that took place as a direct result of the rise in oil prices and the resulting increase in the country's income. The most significant of these "Tafra"s accompanied the quadrupling of crude oil prices in 1970s. This was followed by a period of recession resulting from the oil embargo in 1973 and the aftermath of the Gulf War in Kuwait in the 1990s. A second oil boom developed between 2002 and 2008 (Cordesman, 2003; Abdelkarim, 1999). During this period, oil prices exceeded \$100 a barrel. However, many

challenges, such as the inflation, the unemployment rate and lack of diversification in the general economy have impeded economic development despite the vast increase in the wealth (Saif, 2009).

In a country like KSA, where traditions and social conventions are perceived to be the bedrock of society, globalisation is seen as a mixed blessing. Traditional social norms in general and education in particular, have had to interact with the global marketplace and have faced social challenges consequently. In the recent past, the KSA was not immune from the effects of globalisation and the new trend towards a knowledge-based economy. The KSA formally joined the World Trade Organisation (WTO) in December, 2005 (Abdul-Ghafour and Hanware, 2005) and this membership, together with obligations to the General Agreement on Tariffs and Trade (GATT), has accelerated country's integration into the world economy.

2.3.1 The Five Year Economic Development Plans

The KSA is the largest economy in the Middle East, comprising 25 per cent of the Arab world's total GDP. It is the world's leading oil exporter, possessing one-fourth of the world's proven oil reserves. Its oil revenues have been used, albeit slowly, to diversify the economy, reclaim land from the desert and establish the infrastructure (such as roads, telecommunications, and modern cities) that is needed for further development.

The main thrust of the government is to reduce the dependency on the income from oil sales (Ministry of Economy and Planning, 2009) by directing the country's economy through several consecutive five-years plans. This idea is based on an advice from foreign development planners such as the United Nations Development Programme (UNDP) in 1960. In 1965, the government planning evolved into the Central Planning Organisation, which in 1975 became the Ministry of Economy and Planning. Since then, the Ministry has been responsible for the development of the economic direction of the country and has been the primary author of KSA's Five Year Development Plans (AlFarsi, 1998). The first of these plans covered the period from 1970 to 1975. Eight more 5 year development plans have been written since then, guiding the KSA

during the past four decades despite the lack of implementation of all aspects included within the plans.

Through these 5-year development plans, the government has sought to allocate its petroleum income to transform its relatively undeveloped, oil-based economy into that of a modern industrial state while maintaining the kingdom's traditional Islamic values and customs. Although economic planners have not achieved all their goals, the economy has progressed rapidly. Oil wealth has increased the standard of living of most Saudis. However, significant population growth has strained the government's ability to finance further improvements in the country's standard of living. Heavy dependence on petroleum revenue still continues, but industry and agriculture sectors now account for a larger share of the economic activity (Al-Shammrani, 2009). Nevertheless, the mismatch between the job skills of Saudi graduates and the needs of the private job market at all levels remains the principal obstacle to economic diversification and development in the country.

The two earlier development plans focused on developing the infrastructure of the country. With the realisation that the country lacked qualified personnel to implement those plans, in the import of expatriate talents became inevitable. Simultaneously, there was a significant increase in educational facilities at all levels, with concentration on vocational training. Construction of schools expanded significantly, followed by an increase in enrolment at all levels of education. It was hoped that the output of these educational facilities would satisfy the labour market and thus lessen the country's reliance on imported labour (Ministry of Economy and Planning, 2000).

Nevertheless, during the third plan (1980-85), the emphasis changed leading to decline in spending on the infrastructure but there was marked rise in spending on education, health, and social services. The share for diversifying and expanding productive sectors of the economy (primarily industry) did not rise as planned, but the two industrial cities of Jubail and Yanbu, built around the use of the country's oil and gas to produce steel, petrochemicals, fertilizer, and refined oil products, were largely completed (Al Farsi, 1998). Saudi citizens were encouraged, through incentives, to enrol in training courses. Concurrently, the private sector was encouraged to expand training programmes and government loans were made dependent upon the provision

of full-time training schemes for Saudi citizens (Al Farsi, 1998). The objectives for manpower development were: a substantial increase in the size of trained Saudi manpower available to the market; an increase in productivity in all sectors; the deployment of trained nationals in sectors with the greatest potential for growth; and reduced dependence on foreign manpower. Other objectives of the plan included diversifying the economy, reforming government administration and encouraging and developing the private sector (Ministry of Economy and Planning, 1985).

In the fourth plan (1985-90), the country's basic infrastructure was viewed as largely complete, but education and training remained areas of concern. Private enterprise was encouraged and foreign investment in the form of joint ventures with Saudi public and private companies were welcomed. The private sector became more important, raising 70 per cent of non-oil GDP by 1987. While still concentrated in trade and commerce, private investment increased in industrial, agricultural, banking, and construction sectors. These private investments were supported by generous government financing and incentive programs. The objective was for the private sector to have 70 to 80 per cent ownership in most joint venture enterprises (Ministry of Economy and Planning, 1990). There was interest in “developing and supporting entrepreneurship and Small and Medium-sized Enterprises (SMEs) since the Fourth Development Plan which mentioned only improving the access of entrepreneurship and SMEs to sources of finance to facilitate their participation in the new activities proposed for the private sector” (Ministry of Economy and Planning, 1990, p. 110).

The fifth plan (1990-95) emphasised on consolidation of the country's defences; improving efficiency in government social services; regional development; and, most importantly, creating greater private-sector employment opportunities for Saudis by reducing the number of foreign workers (Ministry of Economy and Planning, 1995).

The sixth plan (1995-2000) focused on reducing the cost of government services without cutting them and sought to expand educational training programs. The plan called for reducing the kingdom's dependence on the petroleum sector by diversifying economic activity, particularly in the private sector, with special emphasis on industry and agriculture sectors. It also continued the effort to "Saudize" the labour force (Ministry of Economy and Planning, 2000). “Saudisation”, in

the words of Alzalabani (2002, p. 132) “refers broadly to the need to replace non-Saudi manpower with Saudi nationals in the workforce. Thus, it aims to encourage Saudi citizens to take a more active role in the economic and social development of their country.”

The seventh plan (2000-2005) focused more on economic diversification and a greater role of the private sector in the Saudi economy. Particularly, the Seventh plan paid special attention towards entrepreneurship and SMEs sector, which, under the right conditions, can achieve a number of strategic objectives, including attracting foreign investment, prompting non oil exports, and contributing effectively to a more balanced distribution of development activities across various regions. For the period 2000-2005, the Saudi government aimed at an average GDP growth rate of 3.16 per cent each year, with projected growths of 5.04 per cent for the private sector and 4.01 per cent for the non-oil sector. The government also set a target of creating 817,300 new jobs for Saudi nationals (Ministry of Economy and Planning, 2005).

The Eighth Development Plan (2005-2010) again focused on economic diversification in addition to education and inclusion of women in the society. The plan called for establishing new universities and new colleges with technical specialisations. Emphasis was given to privatisation as well as on a knowledge-based economy, including scientific research, and technology while tourism was considered to help in the goal of economic diversification (Ministry of Economy and Planning, 2010). In addition, the Eighth Development Plan adopted several measures and initiatives to support and develop entrepreneurship and SMEs including the removal of administrative, legal and technical constraints. In 2010, it established the Saudi Council of Chamber of Commerce and Industry (SCCCI) to support entrepreneurship and SMEs, improving mechanisms by which the Saudi Industrial Development Fund (SIDF) sponsor SMEs, and consolidate the role played by Saudi commercial banks in providing loans to such enterprises (Ministry of Economy and Planning, 2010).

The Ninth Development Plan covering the period (2010-2014), outlined a proposed investment level of SR1.444 trillion (US\$385 billion), an increase of 67 per cent over the Eighth Development Plan. The majority of the spending was allocated to eradicating poverty and improving education and human resource development, employment, social development, health

care, municipal services, housing, culture, and transport and communications. Under the Ninth Development Plan, the objective 13 states the intention to develop the sector of entrepreneurship and SMEs to increase their contributions to the GDP.

Thus, the KSA has adopted comprehensive planning as the ideal framework for achieving balanced economic growth while safeguarding its values and heritage. Successive development plans, as described above, have enabled the country to deploy its national resources both rationally and effectively such that the national economy has grown to one of the 20 largest economies in the world. The formulation of the latest development plan was done when the global economy was facing serious financial and economic crisis, but it reflects the country's determination for accelerating development (Ministry of Economy and Planning, 2010).

Overall, enhancement of skills, increased efficiency of Saudi labour force and eradication of poverty are the milestones in the development strategies in the KSA. Special emphasis is being given to improve the welfare and happiness of citizens with access to better housing, work, education, healthcare and other social services. According to both the Eighth and the Ninth Development Plans of the Kingdom, the future competitiveness of the country has to be based on the knowledge and innovation.

2.4 Manpower and Employment Development

The manpower is a keystone of sustainable development in any country. Thus improving the knowledge, skills and motivation of workers is very important for developing human capital in professional fields in order to meet the development needs and the future requirements of a labour market. The nature of the workforce has thus changed due to economic growth, globalisation trends and increased technological growth rates in many countries such as the KSA.

Achieving scientific modernisation and advancing knowledge would only be possible by improving factors such as the quality of the labour work force, production efficiency, and the ability to generate and innovate in modern technology, all of which have been facilitated by the

integration of the Saudi economy with the global economy. The Saudi Arabian Monetary Agency (SAMA) declared in 2008 that the ability to gain or create knowledge and then to translate it into improved products is vital to broader wealth creation in the nation.

The Kingdom's Eighth and Ninth Development Plans have encouraged and supported these efforts in the structure of a knowledge-based economic scheme that is more interactive and more integrated into global economic systems relative to previous development plans. In addition, the private sector plays a vital leading role based on strategies set for the nationwide development of human capital. Some of the objectives of manpower development under the Eighth Development Plan included the following: improvement of the organisation of educational and training programmes and labour market requirements for the country's employees, increase in the employment opportunities available to the national labour force and the provision of more jobs for the national workforce, especially women, and the adoption of suitable policies in order to endorse the contribution of women to the labour market, without breach of Islamic Shariah laws (SAMA, 2008, p. 229).

2.4.1 Unemployment

The Central Department of Statistics and Information (CDSI) report for the second half of 2012 revealed that the rate of unemployment among Saudis jumped to 12 per cent, the highest rate ever in the modern Saudi history. The Saudi Labour Force Survey 2013 showed that total unemployed people in Saudi were 652,001 who were aged 15 and above, which comprised about six per cent of total labour force in the country. However, unemployment among 15-29 years old Saudis was about 30% (Table 2.2). According to the CDSI report (CDSI, 2012), unemployment was high among women who constitute 60 per cent of total unemployed people in the country; however, the Labour Force Survey 2013 showed that the unemployed women comprised about 75% of total unemployed labour force aged 15 and above (Table 2.2), which showed a small decrease in the unemployment of women in the country.

Table 2-2: Labour Force (15 Years and Over) By Age Group and Sex in Saudi Arabia

Age Group	Employed Persons			Unemployed			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
15-19	47,998	6,162	54,160	17,552	7,359	24,911	65,550	13,521	79,071
20-24	483,516	86,739	570,255	126,004	110,225	236,229	609,520	196,964	806,484
25-29	1,201,068	206,341	1,407,409	83,456	149,074	232,530	1,284,524	355,415	1,639,939
30-34	1,696,114	313,326	2,009,440	31,340	74,334	105,674	1,727,454	387,660	2,115,114
35-39	1,842,956	348,168	2,191,124	11,411	26,023	37,434	1,854,367	374,191	2,228,558
40-44	1,476,437	214,216	1,690,653	4,764	6,174	10,938	1,481,201	220,390	1,701,591
45-49	1,117,831	88,210	1,206,041	1,294	852	2,146	1,119,125	89,062	1,208,187
50-54	710,128	33,650	743,778	1,368	0	1,368	711,496	33,650	745,146
55-59	415,678	15,522	431,200	421	360	781	416,099	15,882	431,981
60-64	184,562	6,654	191,216	0	0	0	184,562	6,654	191,216
65+	137,094	2,363	139,457	0	0	0	137,094	2,363	139,457
Total	9,313,382	1,321,351	10,634,733	277,610	374,401	652,011	9,590,992	1,695,752	11,286,744

Source: Central Department of Statistics & Information (2013) *Labour Force Survey 2013 (round 1)*. Government of Saudi Arabia.

According to the CDSI (2012), employed Saudis constitute only 34 per cent of all Saudis who are of working age. In the case of Saudi women, the employment percentage is very low as there is only 10 per cent of working age women in employment in the country.

The GDP also rose from \$369 billion to \$727 billion, which shows an increase of 97 per cent during the same period i.e. from 2009 to 2012 (CDSI, second half report, 2012). However, this dramatic increase in the economic activity did not reduce the unemployment rate or, even, stop it from rising (Aluwaisheg, 2013). The CDIS report shows that despite impressive growth in economic activity from 2009 to 2012, and notwithstanding Saudization efforts, the unemployment is still high in Saudi Arabia.

Al-Shammari (2009) provided a list of reasons behind Saudi nationals unemployment based on the work of Al-Gaith and Al-Ma'ashoug (1997) and Al-Sheikh (2001) as follows: firstly, there are approximately 4 million non-Saudi workers in the Saudi labour market thus reducing employment opportunities for Saudis; the Government's declining role as the major employer of Saudis; the negative cultural inferiority attitude towards certain occupations in the labour market;

the mismatch between training and education outcomes and labour market skills and demand; the inconsistency of government bodies regulating and supervising the labour market and the low wage level paid to Saudis entering in the private sector (Al-Shammari, 2009).

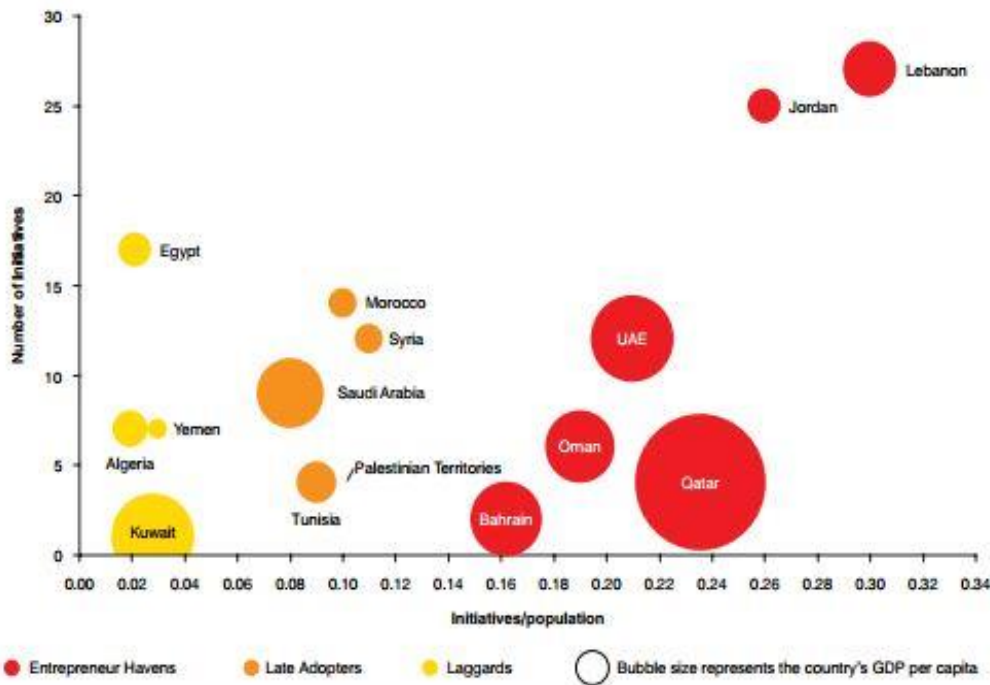
Generally, it is claimed that Saudi graduates lack the skills and knowledge that are required by the labour market (Yamani, 1997). It has also been argued that the Kingdom's education and training system has failed to meet the needs of the economy with half of the Kingdom's universities focusing on religious studies and only 12 percent of Saudi students graduate in engineering and science, while 42.2 percent graduate in social and religious studies (Diwan and Girgis, 2002). In addition to inappropriate educational qualifications, Ramady (2005) suggested poor Saudi attitudes towards work that make them less favoured in the private sector compared to foreign labour.

2.5 Entrepreneurship Development in KSA

According to (WEF, 2011), among the MENA group countries, Saudi Arabia has made laudable efforts to launch initiatives that support entrepreneurship. Figure 2.1 shows entrepreneurial environment in the MENA region that has been divided into three categories i.e. Entrepreneurs Havens, Late Adopters and Laggards. The figure also shows the number of initiatives according to the population. This figure reveals that Lebanon and Jordan fall within 27 and 25 initiatives respectively into the entrepreneurs' havens group. In the late adopters' category, Saudi Arabia and Tunisia have made laudable efforts to launch initiatives that support entrepreneurship. In the laggards category, Algeria and Kuwait have very few or no initiatives to support entrepreneurship.

From Figure 2-1, it could be inferred that for Saudi Arabia to be competitive in the region, Saudi initiatives have to be at least comparable to countries like Bahrain, Oman and the UAE, which are similar to Saudi Arabia in terms of production output (such as the GDP per capita). This may be crucial for addressing the unemployment problem among graduates, which could be done by considering several specific policies such as setting up incubators and research and development (R&D) facilities.

Figure 2-1: Number of Entrepreneurial Initiatives by Country (1974 to 2010)



Source: World Economic Forum (2011, p. 15)

For the entrepreneurship development in the KSA, many initiatives have been made by the government. For example, one of the aims of the Economic Development Plans of the Kingdom has been development and support for entrepreneurship and small businesses. There has been interest in developing and supporting entrepreneurship and SMEs in the country since the 4th Development Plan (1985-1990). In the 7th Development Plan (2000-2005), the country paid special attention to entrepreneurship and SMEs, which, under the right conditions, could achieve a number of strategic objectives, including attracting foreign investment, prompting non-oil

exports, and contributing effectively to a more balanced distribution of development activities across various regions of the country.

Apart from a focus on entrepreneurship in the economic development plans, the country has initiated many other steps to strengthen the entrepreneurship activities. For example, establishment of specialised centres, via the SCCCI, to support entrepreneurship and SMEs, improving various mechanisms by which the SIDF sponsor the SMEs, and consolidating the role of Saudi commercial banks in providing loans to such enterprises (Ministry of Economy and Planning, 2010). The KSA also established science parks and research centres at universities to direct more attention to the promotion of co-financing joint research programmes between the industry and public sector institutions, and the establishment of business incubators in order to transform research results into industrial and commercial applications (Ministry of Economy and Planning, 2010).

Another step taken in 2000 was the establishment of in the Saudi General Investment Authority (SAGIA) to advance national and foreign investment. SAGIA was entrusted with tasks of issuing investment licenses, facilitating investment procedures via one-stop-shops (comprehensive service centres) in all major cities, proposing policies and measures for improvement of the investment climate, and promoting investment opportunities and providing pertinent information. SAGIA is committed to taking a decision regarding an investment application within a period of thirty days.

Continuing this journey, the institution of King Abdulaziz City for Science and Technology (KACST) was developed for applied research in the country. This institution launched a nationally comprehensive programme in 2007 named BADIR, which means “to initiate”, with the aim to develop, activate and foster technological incubators. Presently, the BADIR programme includes activities for advanced industrialisation, biotechnology, nanotechnology, Energy, and information communication technology (ICT) incubators, as well as incubator schemes in Saudi universities. The Riyadh Chamber of Commerce and Industry (RCCI), in collaboration with the BADIR Programme for Technology incubators, have recently inaugurated the RCCI technology incubator that targets young entrepreneurs in various fields of technology.

The BADIR provides advisory services to incubators in a manner similar to and in competition with the international incubators besides it provides practical and office training to the RCCI incubator staff (King Abdulaziz City for Science & Technology, 2013)

Another relevant programme named Bab Rizq Jameel (BRJ) is one of the most important private sector initiatives that assist young Saudi entrepreneurs who are interested in starting their own enterprises. Established in Jeddah in 2007 as an initiative of the Abdul Latif Jameel Community Services Programs (ALJCSP), the BRJ has financed 5,110 entrepreneurship and small businesses and projects and created 41,284 jobs for young men and women in 2009. During the last two years, the numbers of BRJ branches have expanded to 18 across the country. The diversified programmes offered by the BRJ include employment training, direct employment, taxi and truck ownership, micro-project financing, SME financing, work-from-home and franchise programs. Included among the 5,110 projects financed in 2009 were beauty salons, laundries, bakeries, wedding-planning businesses, and mobile phone and computer distributorships (Bab Rizq Jameel, 2013). On an even smaller scale, the "productive household" programme provided support to 24,756 women who set-up their own cottage industries making perfumes, baked goods or other handmade items with the help of interest-free loans of up to SR5,000 (\$1,870). Through the truck and taxi ownership programme, 762 trucks were provided to young Saudi men to establish transport businesses, and 322 were helped to start taxi businesses.

Franchising is one of the most effective job and business creation tools globally, and the BRJ programme helps established businesses to create new opportunities for young men and women by opening franchises of their companies. The BRJ offers interest-free loans between SR50, 000 and SR200, 000 (\$13,300 - \$53,300) for small businesses that can be repaid within five years. Approximately 400 people are employed by the BRJ to follow-up on clients' entrepreneurial activities and to collect the loans when they are due.

Recognising the importance of developing leadership skills in young Saudi girls, the Prince Mohammed bin Fahd Leaders Preparation Centre was established in 2009. Operating under the umbrella of the Prince Sultan bin Abdulaziz Fund, the centre is open to Saudi girls between the age of 6 and 25 years. Two programmes at the centre target different age groups: the promising

leaders programme is designed for 6-15 years old girls, and the young leaders programme caters for girls ag from 16 to 25 years (Prince Mohammed bin Fahd Leaders Preparation Centre, 2013).

In addition, twenty-five Chambers of Commerce and Industry in the country have initiated numerous programmes to encourage innovation and entrepreneurship. Each of the chambers has opened support centres for businessmen and women, providing new entrepreneurs with consultation, training, financial advice and help in identifying investment opportunities. The Women's Section in the Riyadh Chamber of Commerce, along with the Al-Sayedah Khadijah Bint Khuwailid Businesswomen Centre (AKBK) in Jeddah, have become two most influential women's institutions for entrepreneurship and finance in the Arabian Gulf region (Riyadh Chamber of Commerce, 2013).

The three largest chambers, i.e. Riyadh (62,000 members), Jeddah (41,000 members) and the Eastern Province (39,000 members), host yearly entrepreneurship forums and in 2003, the SCCCI established the Development Centre for Entrepreneurship and SMEs in recognition of the important role that entrepreneurship plays in the country's emerging economic development by diversifying the economy and creating new jobs. The primary objectives of the Centre include educating Saudis in general about the importance of entrepreneurship and strengthening the role of regional chambers of commerce as mentors for SMEs. In addition, the centre offers easier access to financing for start-up businesses, prepares studies on the emerging entrepreneurship and SMEs sector, and cooperates with the Saudi Exports Development Centre to enhance the exporting capability of entrepreneurship. To date, the centre has conducted approximately 500 consultations with entrepreneurs and has registered more than 100 participants in training seminars held throughout the Kingdom (Riyadh Chamber of Commerce, 2013).

In summary, SMEs make up 92 percent of the businesses, and employ over 80 percent of the workforce in the KSA. The strategic development plans and other support initiatives from the government and private sector are important mechanisms to contribute to the social development, global competitiveness and to increase employment opportunities. However, it is crucial for the emergence of knowledge-based economies (KBE) to address the unemployment problem among graduates by considering several specific policies such as gaining knowledge

and skills, receiving and utilisation of resources, and looking for resourceful markets and advanced business ventures.

2.5.1 National Strategy toward the Knowledge based Society

In one of the important initiatives, the KSA attempted to achieve a knowledge-based society (KBS), which will place a greater emphasis on knowledge, information and high skill levels for its further economic and social advancement. In early 2012, the KSA commissioned the Korean Development Institute (KDI) to prepare a "Strategy Report" and an "Implementation Plan" for KSA's KBS. The KDI submitted the Strategy Report in July 2012 through a series of technical mission trips and consultation meetings with numerous public and private individuals and entities of the KSA.

The Strategy Report proposed a national plan of action designed to help the KSA tackle the KBS challenges and attain the vision of transforming itself into a diversified, private sector driven knowledge-based economy (KBE), a prerequisite of a sustainable KBS by the year 2030.

The Report suggested that the KSA take three staged steps toward KBS or KBE: Stage I (2025) for undertaking full-fledged micro and macro structural reforms; Stage III (2030) for completing reforms and consolidating transformation. On the macro level, the Report highlighted the labour market and government capacity as issues, which must be addressed in the KSA.

One of the action programmes in the KSA includes improvement in the "entrepreneurship and SMEs Support System" and promotion of a "risk capital" financing market given the importance of building entrepreneurship and SMEs promotion institutions such as a one-stop service centre as well as risk capital market for entrepreneurship and SMEs financing.

In preparing the Strategy Implementation Plan, four public workshops for the KBS project were held in three different locations in KSA: at King Saud University, King Fahd University of Petroleum and Minerals in late January 2013 and at King Abdulaziz University and King Abdullah University of Science and Technology (KAUST) in mid-April 2013.

2.5.2 Entrepreneurial Economy in KSA

At present, rather than going into innovative commercial activity, skilled Saudi nationals tend to work in public sectors such as health and education. Remarkably, they account for only 10% of private sector employment. The Ernst & Young Global Limited (EY) G20 Entrepreneurship Barometer (2013) revealed that the Kingdom has the greatest role in entrepreneurship as a developing nation that is growing rapidly while becoming the biggest economy in the GCC. In the last eight years, the Kingdom's budget has increased from \$69 billion to \$170 billion. In spite of this development, SMEs merely constitute 25% of unified service sector and only contribute 33% to the nation's GDP, although SMEs account for over 92 percent of the enterprises in the country. This contrasts with the majority of developed nations where, for instance in Spain, SMEs make up 64.3% of the GDP (Ibid.).

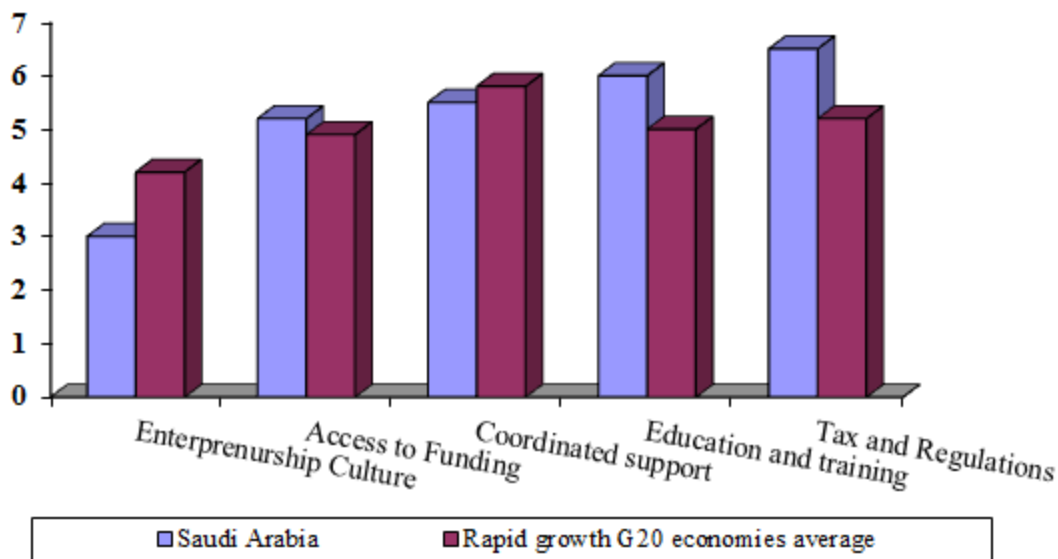
In line with the Saudi Arabia's efforts for diversifying the national economy away from oil, encouraging entrepreneurs is seen as a crucial part of the process of economic diversification. The entrepreneurial environment comprise many essential components such as access to funding, relevant skills, a supportive culture, and a business-friendly environment, but to create thriving communities of young businesses, all these parts must be combined into an integrated whole within the country.

According to the EY G20 Entrepreneurship Barometer 2013 (Fig 2-2), Saudi Arabia ranks favourably because of its tax and regulatory frameworks but to boost entrepreneurial activity the government has been working to overcome complications in the financial system and innovation culture of the country. The country is also investing in the five "economic cities." such as the King Abdullah Economic City (KAEC), as part of a wider plan to diversify away from oil and encourage foreign investment into the kingdom (KAEC, 2013).

With regards to the access to financing, one finds a noteworthy development, i.e. the recent increase in the amount of financial backing, like the industrial development financing from the SIDF during the year 2012. The SIDF assists the private sector in the process of industrial conversion. Financial support in the form of soft loans provided by SIDF represents one of its

major supportive functions in encouraging industrial development in the Kingdom. Nevertheless, these attempts to expand the country's economic base will be noteworthy in the medium term, since more and more monetary assistance includes a training element, so that business undertakings would be improved by drawing on private resources of skilled support in the coming years.

Figure 2-2: Saudi Arabia's pillar Scores compared to rapid-growth G20 economies average



Source: EY (2013) EY G20 Entrepreneurship Barometer Report 2013

Fostering an entrepreneurship culture is one of the primary challenges for Saudi Arabia, as part of wider efforts to diversify the economy away from its reliance on oil. Saudi Entrepreneurs point to increased media exposure and improved attitudes toward entrepreneurship as the key factors that are positively increasing entrepreneurship locally. However, other important attitudes are weaker, especially in terms of risk tolerance and fear of financial collapse. Furthermore, the majority of local businesses are family-owned, as opposed to professional ventures focused on growth.

Another obstacle to increasing entrepreneurial activity is the low contribution and participation by the female population. The International Monetary Fund (IMF) has assessed the female work

rate contribution in the KSA at 9%, which is well below the fast-growth nations in the G20 (IMF, 2012). This situation is despite a charitable donation that had been established in 2007 to support aspiring female business-owners as well as provide fiscal aid for both new and existing businesses. Clearly, more can be done in this area as the growth potential of women's entrepreneurship is becoming more and more evident throughout the world. In many OECD economies, women are starting businesses at a faster rate than men [Global Partnership for Financial Inclusion (GPFI) & International Finance Corporation, "Strengthening Access to Finance for Women-Owned SMEs in Developing Countries", October 2011, p.12]. In developing countries, there are 8-10 million women-owned small and medium enterprises (SMEs), representing 31 to 38% of total SMEs. In some of these countries these firms are growing at faster rates than those owned by men. The OECD-MENA Women's Business Forum, provides a useful platform for exchanging experiences and good practices in offering financial literacy training, investor readiness programmes and professional mentoring.

Despite the KSA's better performance compared to the G20 countries in education and training (Fig 2.2), it fared poorly on outputs like patent requests and scientific papers, which suggest that Saudi Arabia is deemed not to be a strong innovator. The country has endeavoured to set this right by focussing on the education system. Numerous new universities have been founded recently. For example, the King Abdullah University of Science and Technology, which is presently considered the region's largest research institute (KAES, 2013). However, Saudi Arabia does not spend enough on R&D as a key contributor to its GDP. For instance, only 0.7% of assembly plants in 2010 were of high-end engineering products. In any case, exertions to put resources into R&D-headed colleges ought to help to support this over the longer term.

Considering the importance shown to private sector enterprises in Saudi Arabia, the government is continuing to work on its strengths through enterprise-friendly taxation and fiscal regulations. For example, the State provides a helpful and efficient tax system that assists in the selling of goods and facilitates the establishment of new enterprises. However, the recent, harsh business climate has rendered it hard for an innovation-led small business division to thrive, although the State continues to reinforce the promotion of entrepreneurship and to concentrate on education

based on creativity and technology, which are the basis for innovation-led development. Presently, Saudi Arabia is funding the education sector extensively, not only in the universities' research facilities, but also to improve employees' skills to prepare them for a dynamic, entrepreneurial future. This is part of a larger vision to eventually strengthen the tradition of free enterprise and sustaining it to grow regionally.

2.5.3 Current Entrepreneurship Ranking

In the World Bank's Doing Business 2014 Report (World Bank, 2014) relating to the ease of doing business, Saudi Arabia is compared globally against 183 countries and regionally against countries in the MENA region for ease of doing business and for all other variables it is ranked against the MENA countries (Table 2.3). It is noted from data presented in Table 2.3 that Saudi Arabia ranks 26th globally and 2nd highest in the MENA region for 'doing business'. Saudi Arabia's consistent improvement in Doing Business's is evident from its latest ranking for different doing business indicators as follows: the country is at the top 1st position for getting credit and protecting investors, 2nd highest rank in getting electricity and registering property, and 3rd highest rank in dealing with construction permits and paying taxes (Table 2.3). However, it's ranking for starting a business, trading across borders, resolving insolvency and enforcing contracts is 6th, 9th, 11th, and 13th among the countries in the MENA region.

Table 2-3: Indicators of business attraction and stability for entrepreneurship, 2014 (N.B.: The lowest number indicates the best ranking)

Economy	Ease of Doing Business		Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
	Global Rank	Rank in the MENA Region										
Saudi Arabia	26	2	6	3	2	2	1	1	3	9	13	11
Algeria	153	17	18	13	19	19	9	6	20	16	14	4
Bahrain	46	3	7	1	7	4	9	10	4	10	10	1
Djibouti	160	18	13	15	18	16	16	19	13	7	19	17
Egypt, Arab Rep.	128	12	3	14	15	12	2	16	19	11	18	16
Iran, Islamic Rep.	152	16	8	17	20	18	2	16	18	19	1	15
Iraq	151	15	19	4	4	13	16	13	12	20	16	18
Jordan	119	11	11	9	5	11	14	18	8	6	15	12
Kuwait	104	9	16	12	10	10	9	4	6	13	9	9
Lebanon	111	10	12	18	6	14	6	6	9	12	12	8
Libya	187	20	20	19	11	20	20	20	15	17	17	18
Malta	103	8	17	16	16	8	16	3	7	3	10	5
Morocco	87	7	2	7	14	17	6	10	14	4	3	6
Oman	47	4	5	6	9	3	2	6	5	5	8	7
Qatar	48	5	9	5	3	5	9	13	2	8	6	2
Syrian Arab Republic	165	19	14	19	12	9	16	10	16	18	20	13
Tunisia	51	6	4	10	8	7	6	2	10	2	2	3
United Arab Emirates	23	1	1	2	1	1	2	6	1	1	7	10
West Bank and Gaza / Palestine	138	14	15	11	13	15	13	4	11	14	5	18
Yemen, Rep.	133	13	10	8	17	6	14	15	17	15	4	14

Source: World Bank (2013)

According to WEF's Global Competitive Index (WEF GCI, 2013-14), Saudi Arabia improved from 27th in 2008-2009 to 18th position in 2012-13. Both these rankings reflect the significant improvements achieved in market efficiency and institutional frameworks within the KSA in the last ten years. Currently the KSA is paying special attention to, and support for, fast growing entrepreneurial businesses such that the SAGIA have begun tracking their progress by introducing the Saudi Fast Growth 100 (SFG 100), which is an initiative launched in 2008 to measure the growth within the smaller-sized corporate segment of the Saudi economy due to this segments' significant impact on employment and the economy at large. Among other indicators, SFG 100 has been able to determine that over 70% of the country fast growth CEOs are serial entrepreneurs (US-Arab Tradeline Report, 2010). The Saudi government is now interested in expanding that pool of entrepreneurs for maximum economic impact.

Based on a survey by the Global Entrepreneurship Monitor (GEM) conducted from May to October 2009, among the factor-driven economies in the region, Saudi Arabia had the lowest Total Entrepreneurial Activity (TEA) rate, with only 4.7% of the adult population (18-64 years old) actively involved in the start-up of a new business or owning a young business of less than three and half years old. Among the MENA/South Asian countries, KSA had the highest rate (75%) in the factor-driven group, i.e. more than seventy five percent of individuals perceived there were good business opportunities. This indicates that although the interest in entrepreneurship in KSA was high on the outset, it does not necessarily translate to actual businesses that could contribute to the Saudi economy.

However, according to the 2010 GEM report, "Ghana and Saudi Arabia had the highest levels of status, career and media perceptions in the factor-driven group" (GEM 2010, p.21). This might suggest that in order to encourage entrepreneurship regardless of economic grouping, some factors to consider were to give more media attention, such as publishing articles on business success stories, as well as improving the public's perception of business failures. Running 'triumph over failure' stories may lead to counter negative impressions of high risk-taking in an

entrepreneurship venture, and may inculcate the acceptance of failure as a process to achieve success further down the road.

Nevertheless, at the government level in Saudi Arabia, there is a continuous effort to support and encourage Saudis with their business start-ups. Thus, the establishment of The Prince Salman bin Abdulaziz Young Entrepreneur Award to support young male and female entrepreneurs was established. “Saudi Arabians under the age of 40 establish more than 72 percent of the small and medium enterprises (SMEs) registered annually. They represent 69 percent of the work force and are the Saudi business community’s fastest growing group, increasing approximately 5.7 percent annually, according to the findings of the award committee.” (US-Arab Tradeline, 2010, p.1)

In addition, the KSA has been improving in terms of the recommendations and policies of the WEF, but there are still areas requiring more attention such as publicising and promoting financial supports to business start-ups. The following Table 2.4 summarises the analysis of entrepreneurial policies and guidance of the WEF (2011) and the related KSA entrepreneurial initiatives and applications. Saudi Arabia has placed a great deal of importance on creation of new businesses and has provided incentives and implemented policies and procedures to help entrepreneurs (Table 2.4).

Table 2-4: WEF imperatives for improving entrepreneurial ecosystem in the MENA region and the KSA Entrepreneurial ecosystem

	WEF Imperatives*	KSA (Evidence)
1-	<ul style="list-style-type: none"> • Offer a helping hand. Established entrepreneurs should give time, advice and seed funding to aspiring entrepreneurs. 	<ul style="list-style-type: none"> - The SCCCI established specialised centres to support entrepreneurship and SMEs, improving mechanisms by which the SIDF sponsors SMEs, and consolidation of the role played by Saudi commercial banks in providing loans to such enterprises (Ministry of Economy and Planning, 2010). - KSA established science parks at universities and research centres to direct more attention to the promotion of co-financing and joint research programmes between industry and public sector institutions, and the establishment of business incubators in order to transform research results into industrial and commercial applications (Min of Econ & Plan., 2010).
2-	<ul style="list-style-type: none"> • Change behaviours and evolve the culture. Discuss entrepreneurship every day and generate hype around a handful of success stories. 	<ul style="list-style-type: none"> • Bab Rizq Jameel (BRJ) is one of the most important private sector programs that assist young Saudi entrepreneurs looking to start their own enterprises. The BRJ financed 5,110 entrepreneurship and small businesses and projects and created 41,284 jobs for young men and women in 2009. During the last two years, the numbers of BRJ branches has expanded to 18 throughout the Kingdom. The diversified programs offered by BRJ include employment training, direct employment, taxi and truck ownership, micro-project financing, SME financing, work-from-home and franchise programs. Included among the 5,110 projects financed in 2009 were beauty salons, laundries, bakeries, wedding-planning businesses and mobile phone and computer distributorships (Bab Rizq Jameel, 2013).
3-	<ul style="list-style-type: none"> • Bring entrepreneurship to the classroom. Everyone in high school and university should learn entrepreneurial principles. 	<ul style="list-style-type: none"> • Refer to Entrepreneurship Education, section 2.9 of this chapter for more details, but one very relevant example is KSA universities' initiatives. For example, KSA, KAU, KFUPM, UBT and PMU all offer entrepreneurship education courses in the form of three credit hours for those students who are studying in economic, administration and engineering colleges, in classes teaching of the fundamentals, and regular workshops are organised for creating new entrepreneurs.
4-	<ul style="list-style-type: none"> • Bring entrepreneurship to the office. Companies should encourage employees to unleash their own talent. 	<ul style="list-style-type: none"> • Twenty-five CCIs in KSA have initiated numerous programmes to encourage innovation and entrepreneurship in the country. Each of the chambers has opened support centres for businesspersons and women, providing new entrepreneurs with consultation, training, financial advice and help in identifying investment opportunities. The Women's Section in the Riyadh Chamber of Commerce, along with the AKBK in Jeddah, have become two of the most influential women's institutions for entrepreneurship and finance in the Arabian Gulf region (Riyadh Chamber of Commerce, 2013).

5-	<ul style="list-style-type: none"> Do not imitate Silicon Valley. Identify and leverage your country's own unique resources. 	<ul style="list-style-type: none"> In 2007, KSA launched BADIR programme - a national comprehensive programme with the aim to develop, activate and foster technological incubators. Presently, the Badir programme includes 15 Badir for Advanced Industrialization incubators, 18 Badir for Biotechnology, Badir for Nanotechnology, Badir for Energy, 29 Badir for ICT incubators, and other incubator schemes in Saudi universities. Riyadh Chamber of Commerce & Industry (RCCI), in collaboration with Badir Program for Technology Incubators, inaugurated recently the RCCI technology incubator that targets young entrepreneurs in technology fields
6-	<ul style="list-style-type: none"> Welcome new ideas. Engage domestic and foreign workers to encourage a free flow of expertise and enterprise. 	<ul style="list-style-type: none"> In 2000, the SAGIA was established to advance national and foreign investment. SAGIA was entrusted with the tasks of issuing investment licenses, facilitating investment procedures via one-stop-shops (comprehensive service centres) in all major cities, proposing policies and measures for improvement of the investment climate, and promoting investment opportunities and providing pertinent information on them. SAGIA is committed to taking a decision regarding an investment application within a period of thirty days (Ministry of Economy and Planning, 2010).
7-	<ul style="list-style-type: none"> Break the stereotype. Great entrepreneurial ideas can come from anyone in any industry. 	<ul style="list-style-type: none"> Badir would supply advisory services to incubators in a manner similar to and competitive with, international incubators besides practical and office training for RCCI incubator staff (King Abdulaziz City for Science & Technology, 2013).
8-	<ul style="list-style-type: none"> Embrace the diaspora. Tap successful entrepreneurs living abroad for their advice and connections. 	<ul style="list-style-type: none"> Information not available.
9-	<ul style="list-style-type: none"> Eliminate red tape. Governments should give many kinds of support to all types of entrepreneurs. 	<ul style="list-style-type: none"> Recognizing the importance of developing leadership skills in young Saudi girls, the Prince Mohammed bin Fahd Leaders Preparation Centre established in 2009. Operating under the umbrella of the Prince Sultan bin Abdulaziz Fund, the Centre was opened to Saudi girls between the ages of 6 and 25 years. Two programs at the centre target different age groups: the promising leaders program is designed for girls aged 6 to 15 years, and the young leaders program is for girls aged 16 to 25 years (Prince Mohammed bin Fahd Leaders Preparation Centre, 2013).
10-	<ul style="list-style-type: none"> Expand the venture capital (VC) model. VCs need to go beyond funding and provide a support structure for entrepreneurs. 	<ul style="list-style-type: none"> In 2010 the Saudi Council of Chamber of Commerce and Industry (SCCCI) was established to support entrepreneurship and SMEs, improving mechanisms by which the SIDF sponsor SMEs, and consolidate the role played by Saudi commercial banks in providing loans to such enterprises (Ministry of Economy and Planning, 2010).

Source: Generated by the researcher; *Word Economic Forum (2011)

2.5.4 Mapping Entrepreneurship Environment

For charting the entrepreneurship network of Saudi Arabia, Rahatullah (2013) examined ongoing programmes for entrepreneurship development in the country. He studied the current stakeholders of entrepreneurship in the Kingdom, their functions as well as the potentiality for feasible involvement to promote entrepreneurship.

Porter (2012) of the Harvard Business School stated that competitiveness has become central to Saudi Arabia's economic policy agenda as substantial reforms have been implemented in areas like infrastructure development, market opening, legal reform, business regulation, education, and financial markets to improve KSA's competitiveness. This improvement has enabled entrepreneurship to take root. As a result, entrepreneurs are making an important contribution to diversifying the economy (e.g. via service and non-resource industries). In addition, entrepreneurs are creating a pathway for other Saudi nationals to enter the private sector. Entrepreneurship enjoys a high level of support in Saudi Arabia and the Kingdom has taken a leading role in the Arab region in terms of regulatory reforms related to entrepreneurship. Nonetheless, difficulties are still present such as 'enforcing contracts' and 'resolving insolvencies' (see Table 2.3 above).

The entrepreneurship ranking for the Arab countries (Table 2.5) indicates plenty of information that puts Saudi Arabia generally at the forefront of other Arab countries. In the latest WEF's Global Competitive Index (GCI) 2014 (GCI 2014–2015) (GEF, 2014), the global position of Saudi Arabia is 24th out of 148 countries (Table 2.5). Globally, the country ranked 15th, 33rd and 32nd for the 'basic requirements', 'efficiency enhancers' and 'innovation and sophistication factors, respectively (GEF, 2014).

Table 2-5: Entrepreneurship ranking for the Arab countries / MENA region

Economies	Global Competitiveness Index 2014-15 ^{(a)*}	Economic Freedom Score 2014 ^{(b)*}	Prosperity Index 2013 ^{(c)*}	Global Innovation Index 2014 ranking ^{(d)*}	Human Development Index 2014 ^{(e)*}	Press Freedom Index 2014 ^{(f)*}	ICT Development Index (ICT) 2011 (global Rank) ^{(g)**}	Innovation System Index 2012 ^{(h)**}	Education and Human Resources Index 2014 ^{(e)**}	Knowledge Economy Index (Global rank) 2012 ^{(h)**}
Saudi Arabia	24	77	50	38	34	177	5.43 (47)	4.14	0.867	5.96 (50)
Algeria	79	146	99	133	93	121	2.98 (104)	3.54	0.778	3.79 (96)
Bahrain	44	13	n/a	62	44	163	5.85 (40)	4.61	0.800	6.90 (43)
Djibouti	n.a.	118	n/a	n.a.	170	169	1.74 (128)	1.44	0.356	1.34 (138)
Egypt	119	135	108	99	110	159	3.66 (84)	4.11	0.722	3.78 (97)
Iran	83	173	101	120	75	173	3.53 (87)	5.02	0.844	3.91 (94)
Iraq	n.a.	n/a	130	n.a.	120	153	n/a	n.a.	0.561	n/a
Jordan	64	39	88	64	77	141	3.95 (75)	4.05	0.739	4.95 (75)
Kuwait	40	76	33	69	46	91	6.96	5.22	0.811	5.33 (64)
Lebanon	113	96	98	77	65	106	54.48 (65)	4.86	0.733	4.56 (81)
Libya	126	n.a.	n.a.	n.a.	55	137	n.a.	n.a.	0.894	n.a.
Morocco	72	103	82	84	129	136	3.46 (90)	3.67	0.644	3.61 (102)
Oman	46	48	n/a	75	56	134	5.10 (53)	5.88	0.756	6.14 (47)
Qatar	16	30	n/a	47	31	113	6.24 (30)	6.42	0.767	5.84 (54)
Palestine	n.a.	n/a	n/a	n.a.	107a	138	n/a	n.a.	0.733	n/a
Syria	n.a.	n.a.	122	n.a.	118	177	3.15 (96)	3.07	0.667	2.77 (111)
Tunisia	87	109	91	78	90	133	3.58 (85)	4.97	0.811	4.56 (80)
UAE	12	28	28	36	40	118	5.64 (45)	6.6	0.741	6.94 (42)
Yemen	142	123	136	141	154	167	1.76 (126)	1.96	0.511	1.92 (121)

N.B.: *The lowest number indicates the best ranking; ** the highest number indicates the best ranking, n.a. = data not available. **Sources:** ^a World Economic Forum (Sep 2014), ^b The Heritage Foundation (2014), ^c Legatum Institute (2013), ^d Cornell University, INSEAD, and WIPO (2014), ^e United Nations Development Programme (2014), ^f Reporters Without Borders (Reporters sans frontières) (2014), ^g International Telecommunication Union (ITU) (2012), ^h World Bank (2012)

In addition, it stands at the 4th and 20th positions for the macroeconomic environment and market size respectively (GEF, 2014). These rankings indicate the country's stronger and solid institutional framework, efficient markets, and more sophisticated business arena in the country. The Kingdom has done a number of improvements to its competitiveness in recent years for example enactment of new foreign investment laws and the establishment of SAGIA as well as recent privatisations of public companies has encouraged further investment in the country. Moreover, data presented in Table 2.5 shows that in terms of the global competitiveness, Saudi Arabia is the top third country among the Arab countries after UAE and Qatar. Further analysis of data presented in Table 2.5 reveals that Saudi Arabia is 2nd in the global innovation index, human development index and

education and human resources index, 3rd in the prosperity index and knowledge economy index, 5th in the information and communication technology (ICT) development index, 7th in economic freedom score and 9th in innovation system index among 19 MENA countries. However, the country is at the second bottom position for press freedom index in the MENA region (Table 2.5).

The country faces important challenges and the important problematic factors for doing business in the country include the restrictive labour regulations, inadequate educated workforce inefficient government bureaucracy and access to finances (GEF, 2014, pp. 324-325). More importantly, there is need for major improvements in the ‘higher education and training’, ‘labour market efficiency’ and ‘technological readiness’, which are important factors for enhancing efficiency but currently they stand at 57th, 60th and 45th position respectively among 148 countries (GEF, 2014, pp. 324-325). Improvement in these fields would be of immense importance to the Kingdom considering the increasing number of young people entering the labour market in coming years. Thus, better utilisation of specific work skills, including the introduction of skilled women into the labour force, and enhanced practical education would significantly enhance the country’s labour pool. Moreover, as the nation endeavours to diversify its financial and economic systems, there will be increased need and demand for an additionally talented and trained labour force.

2.6 Higher Education in the 20th Century

Over the past few decades, higher education throughout the world has undergone significant changes regarding its role and structure (Teichler, 1988, 2000). Until the early twentieth century, higher education was limited, outside of Europe, North America, and the colonies of Great Britain, to a few universities (Rohstock, 2011). Higher education was considered a “public space[s] for free inquiry and the development of minds”, “an exemplary locus for deliberation, communication,

interaction, and searching for truth or inter-subjective consensus” (Freid *et al.*, 2007, p. 594). While these remain important functions for higher education, other economic and social demands became important focuses for it (Rae, 2008 and Rae *et al.*, 2010). Thus, higher education was no longer limited to the purpose of training for the elite.

The broadening of higher education systems started to take place in the 1930s in the USA, and shortly after the Second World War in the UK, the USSR, and other European countries. During this period, the economic and social roles of governments changed and as a result, the expansion of higher education was seen as a significant means to fulfil wider political, social, and economic objectives of modern governments (Robbins, 1963). Policymakers were chiefly concerned with the human capital requirements in their planning for higher education. Modern neoclassic economists like Mincer (1993) and Becker (1964) argued that investment in human capital through education and training would lead to economic prosperity for both individuals and businesses. It was argued that in order to increase the store of human capital within a nation, higher education should be available tuition free to all eligible people because their knowledge and skills would be of social benefit (Teichler and Sadlak, 2000).

Governments of developed and developing countries towards the end of the twentieth century became more concerned about improving the human resources, especially with the advent of globalisation and the knowledge economy (Blondal *et al.*, 2002). Individuals also became increasingly keen to pursue higher education for its observed positive impact on their employability, personal income, and social status (Mincer, 1993; Rae, 2008; Rae *et al.*, 2010). The policy of HEIs connect to enterprise with knowledge, skills, learning, innovation, research and knowledge transfer, employability and business incubation (Rae *et al.*, 2012). Thus, higher education and governments have been facing significant financial and academic challenges because of this expansion of higher education (Teixeira, 2009).

2.7 Education System in KSA

Before 1932, few people had the opportunities to learn skills and knowledge with traditional and religious approaches in the Arabian Peninsula. The majority of the religious institutions that are well known as “Katateeb” offered opportunities to learn skills. According to Al-Hamid et al. (2007), the organised educational system that is known as “Madarsah” developed in the major holy cities such as Makkah and Madinah. However, before the country was unified the system of education varied from region to region. In 1954, the Directorate of Education was converted into the Ministry of Education that worked on the task of unifying the education system of the country. According to Al-Aqil (2005), many educational institutions worked under the supervision of the directorate. However, there was still a need for a uniform curriculum and in the meantime, many schools imported their curriculum, basic equipment and printed educational materials from neighbouring countries. In 2002, the ministry was renamed the Ministry of Education and Teaching and supervised the education for both the boys and the girls.

2.7.1 Higher Education Institutions in KSA

The post-secondary system of education in KSA is, to a certain degree, similar to the educational system of the USA. The patterns and procedures of these educational systems have been adopted in accordance with the Islamic systems, traditions and customs.

In 1975, a segment of the Ministry of Education became a separate entity, and was renamed the Ministry of Higher Education (MOHE), with the purpose of dealing exclusively with higher education. Among its responsibilities were proposing the establishment of HEIs and authorising them to offer special programmes in accordance with the country’s needs and creating and administering universities and colleges in the Kingdom.

The MOHE is the supreme authority for post-secondary education affairs with the specific task of supervising and coordinating its institutions, with the sole exception of military education. However, some of the Shura Council's responsibilities include directing university education in accordance with policy; supervising the development of university education in all sectors; coordinating among universities especially in the field of scientific departments and degrees and encouraging research, formulating rules and regulations for compliance by all institutions of higher learning (Ministry of Higher Education, 2013).

Higher education in KSA has undergone a tremendous growth over the last five decades. The higher education system, which is based on diversification, has expanded to include 25 government universities, 18 primary teacher's colleges for men, 80 primary teacher's colleges for women, 37 colleges and institutes for health, 12 technical colleges and 24 private universities and colleges.

Saudis practise a 6-3-3-4 formula in their educational system. This structure presents the 6-year primary, 3-year secondary, 3-year high school and 4-year university levels. Children start primary school when they reach at the age of six. Education at the higher education level starts after high school level that is provided by public or private universities, colleges and institutes. The duration of undergraduate courses offered by public and private universities ranges between four and six years (e.g. College of Medicine and College of Dentistry). Postgraduate studies like masters and doctorate degree courses are offered at a few universities. Colleges and institutes of education require two to four years for certificate and diploma levels.

2.8 Entrepreneurship Education at the Universities

The KSA has adopted a long term economic strategy that requires a shift in the focus to develop a knowledge-based economy. Currently in KSA,

entrepreneurship education has become one of the recognised domains of learning at universities. This is mainly due to the positive action taken by the Saudi government to introduce entrepreneurship education in some public and private universities in the wake of growing graduate unemployment. Therefore, universities, educational training centres and technology incubation centres have been urged to provide entrepreneurial training programmes. Various programmes and training courses have been introduced at some levels in universities and colleges. Recently, entrepreneurship study has been introduced as a compulsory course for undergraduates at some universities and colleges. The aim of the move is to encourage and prepare university students to become self-employed, by providing them with some basic business knowledge and skills. It is also hoped to enhance their competitiveness in the employment market, in addition to overcome the unemployment problem.

The researcher has reviewed the current situation of entrepreneurship education at KSA universities. The following sections briefly discuss five universities in KSA that are offering entrepreneurship education to their students. Among them three universities are in public sector universities and charge no tuition fees. These universities include the King Abdulaziz University (KAU), King Saud University (KSU) and King Fahd University of Petroleum and Minerals (KFUPM). The remaining two universities are in the private sector and charge a tuition fees. These universities include the University of Business and Technology (UBT) and University of Prince Mohammed Bin Fahd (PMU). Brief description of entrepreneurship education at the above mentioned five universities is given below.

2.8.1 Entrepreneurship Education at King Saud University (KSU)

King Saud University was established in 1957 as Riyadh University and is located in the capital city of Riyadh. It was renamed as King Saud University in 1982.

The basic intention of the establishment of this university was to cover the shortage of skilled workers in the country. The KSU offers courses in the natural sciences, health, humanities and professional studies leading to the award of bachelors, masters and doctoral degrees (King Saud University, 2013).

The College of Business was established in the year 1960 and in 2011; the Prince Salman Entrepreneurship Institute was established with the intention of providing quality education, research and to promote entrepreneurship. The vision of the university is to become an excellent university and a leader in developing the knowledge society of KSA. Currently, there is a great deal of interest in the field of entrepreneurship and the university has organised some international conferences and workshops.

In 2008, an agreement between the KSU and Ohio-based Kent State University was signed which established an entrepreneurship curriculum for the KSU, the first of its kind to be accredited at a Saudi university. In 2010, the KSU offered a degree of Fellowship in Entrepreneurship in collaboration with the Jönköping University, Sweden. The program lasts for two years where the first year is for the basics of entrepreneurship, and the second year is for the application aspects and follows through to working on the details of a plan for a project that could be incubated by KSU.

The KSU established the Riyadh Technology Incubation Centre (RTIC) in 2008. It is one of the contributions of KSU in building a partnership between the public and private sectors in the area of knowledge economics.

The entrepreneurship centre, which organised the first international conference on entrepreneurship in the Kingdom, in October 2009, was upgraded to Prince Salman Entrepreneurship Institute in 2011. It has three main activities: a Higher Diploma in Entrepreneurship, which has a one year study period of two semesters; training programs for short periods to cover all aspects of entrepreneurship and consultancy services where it provides financial, economic, administrative, marketing and legal consultancy services. In addition to these, it also has business

incubators and a magazine publication under the name of "Entrepreneurship" and the first issue was published in 2012 (Prince Salman Entrepreneurship Institute, 2013).

2.8.2 Entrepreneurship Education in King Abdulaziz University

King Abdulaziz University (KAU) in Jeddah was established in 1967 as the first private institution in the Kingdom. Later on in the year 1971, it became a public sector university (Batarfy, 2005). It contains twenty faculties offering courses in different disciplines and specialisations such as home economics, marine sciences, geology, nuclear engineering, medical engineering, meteorology, aviation and mineralogy as well as having colleges of economics and management, engineering and medicine. The KAU awards bachelors, masters and doctoral degrees (King Abdulaziz University, 2013). However, the KAU identifies its main objective as the Second Strategic Plan (2010-2014) and it has adopted the entrepreneurial university concept as one of the facets of KAU's envisaged identity.

In support of the government's aspiration to create more entrepreneurs in the population of students and encourage entrepreneurial culture among students, the KAU has established business incubation centres in 2009 on the campus. In addition, the KAU organized the second international conference on entrepreneurship in the Shade of Global Trade in the Kingdom, held in November 2009.

An important step has been taken in developing entrepreneurship courses through signing a contract in 2009 with the Xerox Centre for Engineering Entrepreneurship and Innovation, McMaster University, Canada. Accordingly, they provided the course description and content for two entrepreneurship courses to be taught which are entitled as: "Entrepreneurship and Innovation". In addition, two training workshops were held at both the KAU and McMaster to develop teaching skills in entrepreneurship for 25 faculty members of the KAU. From this

cooperation, a new course entitled "Fundamentals of Entrepreneurship has been recently prepared which will start from the current year for the preparatory year students" (King Abdul-Aziz University, 2013).

2.8.3 Entrepreneurship Education in King Fahad University of Petroleum and Minerals

King Fahad University of Petroleum and Minerals (KFUPM), located in Dhahran was established in the year 1963. The vision of the university is to be a preeminent institution known for its globally competitive graduates, quality research and leadership in the field of energy. The university has the mission of making a difference in the Kingdom, beyond the fields of science, and committed to creating outstanding leaders with new knowledge and contributing invaluable endeavours to society at large. The university offers bachelors, masters and doctoral degrees.

In July 2013, Saudi Arabian American Oil Company (ARAMCO) launched the first business excellence incubator through its "Saudi ARAMCO Centre of Innovation and Entrepreneurship". The business incubator has been established in collaboration of KFUPM. It is considered as the best incubator in the KSA due to its distinct programmes available to support start-ups that are presented by KFUPM graduating students. They will be provided with consultancy, training, and finance. This incubator is intended to avail opportunities for Saudi young people to move from job seekers to business owners (King Fahad University of Petroleum and Minerals, 2013). Apart of that, students have the advantage of accessing research resources and physical space for meetings, which allows them to test their entrepreneurial projects. However, despite the fact that the biggest universities in the Saudi Arabia such as KSU, KAU and KFUPM have not reached the expected entrepreneurship status, it can be noticed that these universities are developing slowly toward that goal.

2.8.4 Entrepreneurship Education in University of Business and Technology

The institute of Business Administration (IBA) was established in the year 2000 in Jeddah as a private institute for business and commerce studies. It was upgraded to a College of Business Administration (CBA) in the year 2003. In 2012, CBA was upgraded to a university level and was named as the University of Business and Technology (UBT). The university offers bachelor's degrees in Business Administration (BBA) in the following disciplines: accounting, finance, human resource management, marketing, management information systems and supply chain management (University of Business and Technology, 2013).

The vision of the university is to be recognised as a pre-eminent business institution that develops business leaders and nurtures entrepreneurial attitudes, skills and competencies. The institution is working with the mission of closing the gap between education and job requirements. It also aims to provide students with the knowledge, skills and attributes required for leadership and success in the corporate environment. The institution has to grow further with all the facilities and more programmes including entrepreneurship education and contribute to the business requirements of the KSA.

2.8.5 Entrepreneurship Education in Prince Mohammad Bin Fahd University

Prince Mohammad Bin Fahd University (PMU) was opened in the year 2008 with bachelor's degrees in 17 academic programs. It is composed of three colleges: College of Engineering (Civil and Mechanical), College of Business, and College of Information Technology. Additionally, it offers an Executive Master of Business Administration (EMBA) program in conjunction with the Maastricht School of Management in the Netherlands (University of Prince Mohammed Bin Fahd, 2013).

PMU has a vision of becoming a unique and distinguished higher education institution that participates in preparing future leaders. The university also aims to enrich the intelligence, explore innovative methodologies and break barriers between the academics and the business society. To do this, there are informal sessions on entrepreneurship and sessions on financing, marketing and market analysis and feasibility study. Even though fundamentals of entrepreneurship are taught in classes, regular workshops are also organised for creating new entrepreneurs.

Additionally, the Entrepreneurship Centre at PMU, uses education, training and ongoing support to prepare the next generation of Saudi business leaders. There is focus on enhancing the creativity as well as setting groundwork for entrepreneurship learning. Moreover, the university has introduced the foundations for entrepreneurship education at the undergraduate level.

In summary, five Saudi universities i.e. KSA, KAU, KFUPM, UBT and PMU offer entrepreneurship education courses in the form of three credits hours to those students who are studying in economic, administration and engineering colleges. By reviewing the contents of these courses across the above mentioned five universities, the researcher found that the content of all courses was identical and relevant to entrepreneurship education for developing individual's attitudes and intentions for self-employment. All these universities provide incubation resources facilities to the students, which can help them to assess their business ideas in order to create a venture. Universities arrange for external speakers and entrepreneurs from outside the university to transfer their experience and knowledge to the students. The aims of all these efforts are designed to improve the students' attitudes and intentions to become self-employed rather than looking for jobs.

2.9 Summary

This chapter provided an overview of the KSA's essential characteristics vis-à-vis its population, manpower resources, and system of government, as well as details of the education system, especially entrepreneurial education activities in Saudi universities. It was revealed that the KSA is the largest country in the Middle East with a relatively rich, oil-based economy yet with a fast growing population. Employment opportunities have not kept the pace resulting in a rapidly increasing unemployment rate. Currently, unemployment, especially among the young and new graduates, is one of the major issues in Saudi Arabia.

This chapter also explained the entrepreneurial economy of the country and national strategies toward the knowledge based society. In terms of promoting entrepreneurship, Saudi Arabia is doing better compared to other members of the G20 group of countries. The governmental policies with respect to the entrepreneurship and related education are also encouraging and there are a number of public sector universities that are providing graduate and postgraduate level entrepreneurship courses and modules.

However, the country still needs to improve the entrepreneurship support system as well as there is a need for promote entrepreneurship culture in the Saudi Society. It is thus concluded that there is a clear necessity for the correct support for the development of entrepreneurship and changes in the attitudes and intentions of graduates towards entrepreneurship and self-employment to meet the business requirements of the country.

Chapter 3: Literature Review

This chapter is divided in to 12 sections:- introduction, brief overview of entrepreneurship, importance of entrepreneurship, the main perspectives of entrepreneurship, entrepreneurship schools of thought, entrepreneurial education and development, the role of HEIs in promoting entrepreneurship, research studies in entrepreneurship education, the significant effects of EE on individuals, research gap and summary. .

3.1 Introduction

Entrepreneurship is getting increasing attention that is mainly due to globalisation, economic and social development, competition, corporate downsizing, and the emergence of a knowledge-based economy (Audretsch and Thurick, 2004). The concept of entrepreneurship is associated with the innovation and wealth-creation of individuals through business opportunities where calculated risks are taken and new ventures are launched. The most significant effect of entrepreneurship is to produce economic benefits for individuals and society as a whole by the formation of new firms. This leads people chasing their own desires, goals and dreams with the establishment of new ventures, and the need to identify individuals who are capable of entrepreneurship (Rae, 2008; Fauchart and Gruber, 2011; Rae *et al.*, 2012).

To a large extent, the literature supports entrepreneurial activities for economic growth, contributing to market economies, creating career opportunities, and developing employability (Kurtako, 2005; Deakins and Freel, 2012; Carter and Dylan-Jones, 2012). To date, literature in the field of entrepreneurship has discussed different dimensions such as the public policy, developing institutions, creativity process, environment for developing entrepreneurship with respect to

favouring self-employment or small firms for potential economic growth, development and employment creation (Acs, 2006; Autio and Acs, 2010; Hessels et al., 2008; Minniti and Lévesque, 2010; Estrin et al., 2013). In order to address individual vitality and the potential for economic development, researchers have focused on enhancing individuals' abilities, skills and knowledge for the utilisation of their resources, and this focus has led to increased entrepreneurial attitudes and intentions through targeted education and training. In the history of the development of entrepreneurship, education has been a key factor in developing attitudes and intentions. Entrepreneurship education has eventually been aimed to influence the future entrepreneurial behaviour of individuals (Cruz *et al.*, 2009). Over the last two decades, entrepreneurship has received much interest from researchers and field experts. Following to the domain experts, this study has been conceptualised to examine the impact of EEPs on individuals' intentions, and attitudes towards entrepreneurship. This study is concerned with analysing the influence of such programmes using the TPB, which has been used to evaluate EEPs in different contexts, areas and populations to assess intentions and behaviours (Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Florin *et al.*, 2007, A).

With this belief in mind, this study sets out to investigate a specific developing economy, namely Saudi Arabia, and the consequences of such education on Saudi students' entrepreneurial awareness and intentions. Placing focus on entrepreneurship education, this study draws attention to the literature of entrepreneurship and its definitions. After developing the concept of entrepreneurship, the linkage of entrepreneurial education, along with the role of higher educational institutions in promoting entrepreneurship, has been explored. To review the literature on the entrepreneur and entrepreneurship, this study evaluates various perspectives on entrepreneurs relating to economics, psychology and sociology. Different schools of thought, such as the classical, psychological, sociological, management and entrepreneurship, are included in the review of relevant literature that is presented in this chapter.

3.2 Defining Entrepreneur and Entrepreneurship

3.2.1 Entrepreneur

The term ‘entrepreneur’ was coined from the French verb ‘entreprendre’ and the German word ‘unternehmen’, both of which are translated as ‘to undertake’ (Cunningham and Lischeron, 1991). In the Arabic language the word “entrepreneur” is translated as “Isami” and is ascribed to Isam Bin Shaheer (who died 1100 BC) who said that a self-made man is someone who is a master among others, and well-trained in matters of tackling hardships by taking the initiative (Shalaby, 2009). Thus, it is appropriate to translate the word "entrepreneur" as “taking the initiative”.

In the literature, the term ‘entrepreneur’ has been defined and used differently by different researchers. For example, Researcher Friedrich von Wieser (1850) spoke of entrepreneurs as the great personalities of capitalism, where the entrepreneur is any legal owner of an enterprise. Ibrahim and Ellis (1993, p. 15) defined an entrepreneur as ‘an individual who sees an opportunity that others do not, and marshals the resources to exploit it’ (Figure 3.1); hence, they argued that an entrepreneur is someone who creates a business in the face of risk and uncertainty. Fillion (1994) described an entrepreneur as a main contributor who organises different elements of production in the area of new ventures. This description was supported by Carton *et al.* (1998), who stated that the key role of entrepreneurs is as organisers of factors of production. Dana (2001) defined entrepreneurship as the ability to spot opportunities, and viewed the role of the entrepreneur as that of an innovator. Drucker (2004, p. 25) described an entrepreneur as ‘someone who always searches for change, responds to it and explains it as an opportunity.’ According to Kuratko and Hodgetts (2007, p. 4), entrepreneurs are ‘individuals who recognise opportunities where others see chaos or confusion’. Deakins and Freel (2012) described entrepreneurs as creative and imaginative persons who are organisers of resources and risk-takers. Moreover, they also stated that

entrepreneurs act as a catalyst for economic change, and are alert to profitable opportunities for exchange and acts as middlemen (Ibid). They further stated that entrepreneur brings about change through the introduction of new technological processes or products (Ibid). Rae *et al.* (2012, p. 382) described an entrepreneur as a person who identifies and acts on an opportunity that others do not and is then involved in entrepreneurial activities, such as establishing a new firm or entering into self-employment. Entrepreneurs are also seen as individuals who exist for the purpose of achieving profit and growth by identifying opportunities and assembling the necessary resources to capitalise on them (Scarborough and Zimmerer, 2003; Nabi and Linan, 2011; Wright and Stigliani, 2012).

In the entrepreneurship literature, there are two main categories of entrepreneurs; for example Jankov *et al.* (2004), described two mainstream types of entrepreneurs as ‘entrepreneurs by necessity’ and ‘entrepreneurs by opportunity’. The entrepreneurs by necessity arise from economic downturn, loss of jobs, or unemployment upon graduation whereas the opportunity group is always aware of existing business opportunities, and they seize or exploit an opportunity that is congruent with the Schumpeterian theory of true entrepreneurs, which is related with the individual’s career which is a driving force of all economic activities under the capitalism (Ibid). Another study by Wickham (2004) revealed that the motivations of individuals to be involved in entrepreneurship are mainly to meet individual’s three main needs i.e. economic, social and development needs. However, research suggests that an individual has two choices i.e. either become an entrepreneur or become a paid-employment employee, in the conventional labour pool.

3.2.2 Entrepreneurship

Entrepreneurship has been recognised worldwide as a key element of innovation, dynamism and flexibility in advanced and fully developed economies as well as in emerging and developing economies. The idea of entrepreneurship has been

developed according to the interests of researchers and domain practitioners. For example, researcher like Timmons (1999) produced a modern theory based model of entrepreneurship and argued that entrepreneurship is the ability to create and build a vision from practically nothing in almost any situation. Anderson (2002) described entrepreneurship as the process of carrying out new combinations of enterprise. Kuratko and Hodgetts (2004) described entrepreneurship as a dynamic process of vision, change and creation, and the implementation of new ideas and creative solutions. Such conceptualisations about entrepreneurship have shown various perspectives of the field experts and the interested researchers according to their domains of enquiry. These definitions have many underlying common factors, such as opportunity identification, risk-taking and newness (Wouter, 2004). Therefore, it can be assumed that the essential ingredients of entrepreneurship include the willingness to take calculated risks, the ability to assemble an effective venture team, the creative skills to marshal needed resources, the fundamental skill of building a solid business plan, and the vision to recognise opportunity where others see chaos, contradiction and confusion. This is what the theorists have focused since beginning of the inception of the entrepreneurship concept (Figure 3.1). The concept of entrepreneurship can lead to a process of action where an individual searches for a business opportunity, takes calculated risks, and finally launches a new venture. However, the creation of a new venture and organisation, as well as a new combination of goods and services, is associated with opportunity recognition, exploration and exploitation. The idea of the creation of entrepreneurship goes through different stages of cognitive, strategic and other processes that identify, scan and explore opportunities. Thus, understanding the potential of individuals, teams, organisations, industries and communities requires entrepreneurship attitudes and intentions (Aldrich and Baker, 1997; Davidsson and Wiklund, 2001). From the field experts' perspective, the creation of enterprise is a marginal phenomenon where developing entrepreneurial intention is very important. However, enterprise creation by higher education graduates remains a very marginal phenomenon where developing entrepreneurial intention amongst young people

is essential (Frugier and Verzat, 2005; Jones, 2010; Solesvik *et al.*, 2012; Block *et al.*, 2013).

The politicians and researchers have often used the concept of "entrepreneurship education" in contrast to concepts such as "education foundation" (Jones and Wardle, 2010). They argued that the main difference between two aforementioned two terms is that the primary focus of entrepreneurship education is on starting, growing and managing a business, while the main focus of the enterprise education is on the acquisition and development of personal skills, abilities and attributes that can be used in different contexts and throughout life (Ibid). Enterprise education also referred to as "entrepreneurial learning" is proposed by politicians for lower levels of the educational system while entrepreneurship education is used for the higher levels of the educational system (European Commission, 2004).

Rae (2007) demonstrated the relationship of enterprise education with career development and employability, whilst Rae *et al.* (2012) described the importance of institutional strategies towards enterprise education, incubation / new venture support, innovation, graduate employability and academic enterprise. However, Saravathy (2008) observed international entrepreneurship through the theoretical lens of effectuation where their research revealed four types of central conflict i.e. passive, heroic, adaptive and resourceful, which can be resolved through the effectual approach. In addition, they identified five principles of effectuation that included "creating new means and new goals", "getting customers and income early", "setting affordable loss", "spreading risk to others", and "finding truly new and useful market opportunities" by leveraging constraints and new information (ibid).

In view of the above discussion, many common factors, such as opportunity identification, risk-taking and newness, are involved in the performance of entrepreneurship activity by entrepreneurs. As noted by Anderson (2002), entrepreneurship is the process of carrying out new combinations of enterprise activity, and the individuals who carry them out are referred to as "entrepreneurs"

(Anderson, 2002). Kuratko and Hodgetts (2004) elaborated that entrepreneurship is a dynamic process of vision, change and creation, where individuals, such as entrepreneurs, apply their energy and passion to the creation and implementation of new ideas and creative solutions.

In recent years, researchers have been seen to be directing efforts towards defining the difference between individual entrepreneurship and corporate entrepreneurship; entrepreneurs and small business owners (Carland *et al.*, 1984; Wortman, 1987). Entrepreneurship has been classified into micro (individuals), meso (corporate) and macro (Global-country) levels, according to the stage of examination of the study concerned (Verheul, 2001). Moreover, scholars have introduced several categories schools of entrepreneurial thought to understand the entrepreneurial process. For example, Kuratko and Hodgetts (2007) pointed out that entrepreneurship could be categorised into following distinct schools of thought: namely environmental, financial / capital, displacement, entrepreneurial traits, venture opportunity and strategic formulation. Whereas Cunningham and Lischeron (1991) categorised entrepreneurship into six schools, such as great person, psychological characteristics, classical, management, leadership and entrepreneurship as shown in Table 3.1, which provides a brief explanation of the differences of each of the entrepreneurial schools of thought according to the central role of entrepreneurs and stages of entrepreneurial activities.

Table 3-1: Categories of Entrepreneurial Schools of Thoughts

School of thought	Central focus	Assumption	Behaviours and skills	Situation
Great person	The entrepreneur has an intuitive ability a sixth sense and traits and instincts he/she is born with.	Without this inborn intuition, the individual would be like the rest of us mortals who 'lack what it takes'.	Intuition, vigour, energy and self-esteem.	Start up
Psychological characteristics	Entrepreneurs have unique values, attitudes, and needs which drive them.	People behave in accordance with their values; behaviour results from attempts to satisfy needs.	Personal values, risk taking, need for achievement and others.	Start up
Classical	The central characteristic of entrepreneurial behaviour is innovation.	The critical aspect of entrepreneurship is in the process of doing rather than owning.	Innovation, creativity and discovery.	Start up and early Growth
Management	Entrepreneurs are organisers of an economic venture; they are people who organise, own, manage and assume the risk.	Entrepreneurs can be developed or trained in the technical functions of management.	Production planning, people organising, capitalisation and budgeting.	Early growth and Maturity
Leadership	Entrepreneurs are leaders of people; they have the ability to adapt their style to the needs of people.	An entrepreneur cannot accomplish his/her goals alone but depends on others.	Motivating, directing and leading.	Early growth and Maturity
Entrepreneurship	Entrepreneurial skills can be useful in complex organisations; entrepreneurship is the development of independent units to create market and expand services.	Organisations need to adapt to survive; entrepreneurial activity leads to organisational building and entrepreneurs becoming managers.	Alertness to opportunities, maximising decisions.	Maturity and Change

Source: Cunningham and Lischeron (1991, p-47)

However, despite extensive empirical literature, entrepreneurship research has been criticised owing to little consensus about the definitions of entrepreneurship and entrepreneurs (Johnson, 1990; Koh 1996; Lee *et al.*, 2005; Lumpkin and Dess, 1996; Matlay, 2005b; OECD, 2001; Schieb-Bienfait, 2004; Watson, 2001). Much difference is due to researchers who come from different areas of inquiry developing their own thoughts by ‘using a culture, logic and methodology established to varying degrees in their own fields’ (Filion, 1997, p. 6). Thus, many researchers have applied the entrepreneurship concept with reference to their own enquiries mainly in economics, psychology or sociology in accordance with the objectives of their studies (Filion, 1997; Littunen, 2000; van Praag, 1999; Wennekers and Thurik, 1999).

In this research study, the researcher has developed a conceptualisation of the terms “entrepreneur” and “entrepreneurship” based on reviewing the extant relevant literature as follows. For the purposes of this study, an entrepreneur is defined as an individual who has the initiative to start a business with an economic value with the willingness, desire and ability to deal with risk of becoming self-employed, as a result, creates job opportunities, and contributes to the economic development. In this research study, entrepreneurship is defined as an application of a set of skills and attributes acquired from entrepreneurship education to create a new venture in a specific context (i.e. Saudi Arabia), to contribute to the creation of business start-ups (that could be micro, small or large), and as a result, create job opportunities and economic development.

It is thus concluded that entrepreneurship has been studied extensively and empirically but there has been no significant consensus on a particular definition of the two terms i.e. entrepreneur and entrepreneurship; thus, researchers have thus been criticised for this failure (Johnson, 1990; Koh, 1996; Lee *et al.*, 2005). There is no particular definition found that is able to describe entrepreneurs properly (Churchill and Lewis, 1986). The following section provides an overview of the evolution of entrepreneurship theory and different perspectives about entrepreneurship thought.

3.3 Evolution of Entrepreneurship Theory

Historically, entrepreneurship is linked with economics and the early economists can be credited for its development. Although the evolution of entrepreneurship can be traced back to early 18th century, its evolution continues in the 21st century (Figure 3-1). This section provides an overview of different key concepts and theories about entrepreneurship suggested over the time from 1700s to 2000s, which are classified into different schools of thought (Pittaway, 2012), as summarised below.

3.3.1 French Classical School of Economic Thought

The foundations of entrepreneurship have been credited to the earliest French economists who used the term in economic domain as early as in the middle ages. Some of these earliest French economists are reported here.

3.3.1.1 Richard Cantillon (1680-1734)

Most of the experts in the entrepreneurship field consider Cantillon as the father and inventor of the term ‘entrepreneur’ which he used in his essay entitled ‘*Essai sur la Nature du Commerce in Général* (Essay on the Nature of Trade in General)’, which was in circulation as a manuscript before his death in 1734 and it was formally published in 1755. (Cantillon, 1755; Higgs, 1959) According to Cantillon, “the entrepreneur is someone who establishes an enterprise” (Spulber, 2009, p.187). He also argued that entrepreneurs were financially independent from other people and they used their capital to conduct their enterprise and produced products that they sold in the market at uncertain prices (Pittaway, 2012). Cantillon’s essay had influenced later classical economists in particular Adam Smith, Jean-Baptiste Say, Alfred Marshall, Frank Knight and Joseph Schumpeter.

3.3.1.2 François Quesnay (1694-1774)

Another classical French economist was François Quesnay who is well known for his publication entitled the "Tableau Économique" (Economic Table), published in 1758 (Concise Encyclopedia of Economics, 2008a), in which he described an analytical way of economic working by providing a mathematical general equilibrium system, which was a shift away from the Cantillon's theory of entrepreneurship that involved the uncertainty and risk (Pittaway, 2012).

3.3.1.3 Anne-Robert-Jacques Turgot (1727-1781)

Anne-Robert-Jacques Turgot was another French economist, and statesman, who was a political economist, and at present is remembered as an early advocate for economic liberalism. In his famous publication entitled "Reflections on the Formation and Distribution of Wealth", published in 1776 (Concise Encyclopedia of Economics 2008b, McMaster University, 2014), Turgot extended the Quesnay's theory and argued that the land is the only source of wealth, discussed the evolution of the different systems of cultivation, the nature of exchange and barter, money, and the functions of capital, and suggested the theory of the Single Tax (Theorie de l'impôt unique) that proposed taxation of only the net product of the land (Groenewegen, 2002). In addition, he demanded the complete freedom of commerce and industry. More importantly, modifications to the Cantillon's ideas about entrepreneurship and argued that entrepreneurship and capital ownership are two different aspects of the entrepreneurial undertaking (Pittaway, 2012).

3.3.1.4 Jean-Baptiste Say (1767-1832)

Jean-Baptiste Say was renowned classical French economist, who is well known for coining the term 'entrepreneur'. He is one of the earliest advocates of classical liberalism who supported free trade, market competition and business without restrictions. He extended Cantillon's work on entrepreneurship in his two famous books i.e. A treatise on political economy; or the production distribution and consumption of wealth (Traité d'économie politique ou simple exposition de la

manière dont se forment, se distribuent et se composent les richesses), published in 1803 (Concise Encyclopedia of Economics, 2008c) and *Cours Complet D'économie Politique Pratique* (Complete course of political economy practice), published in 1840 (Say, 1840). In Say's theory of entrepreneurship, entrepreneurs included the farmers, manufacturers and merchants (Spulber, 2009). He considered entrepreneur's income different from the capitalists' income on the basis that the former type of income was a return to the efforts, knowledge and risk taking by the entrepreneurs (Spulber, 2009). Say was influenced by British classical economist Adam Smith's book about free market entitled 'The Wealth of Nations', in which he saw omission of enterprising businessmen as a serious flaw (Beattie, 2014).

3.3.2 British Classical School of Economic Thought

The British Classical School of Economists includes several renowned classical Economists; however, the researcher only discusses Adam Smith, Thomas Malthus, James Mills, John Stuart Mill and David Ricardo for their pioneering contributions to the theory of market economics.

3.3.2.1 Adam Smith (1723-1790)

Adam Smith is known as the father of modern economics (Tucker, 2011, p. 519) and his famous book "An Inquiry into the Nature and Causes of the Wealth of Nations" published in 1776 laid the foundations of the modern economics in general and market economics in particular. However, he did not mention the terms entrepreneur and entrepreneurship in his book, which was seen a serious flaw in his work by contemporary French Classical economist Jean-Bapitiste Say, described above (Encyclopædia Britannica, 2014; Blaug, 2014).

3.3.2.2 David Ricardo (1772-1793)

David Ricardo – a political economist, was the most influential classical British economist for his renowned “Theory of Comparative Advantage”, in which he suggested concentration of resources in industries, which could provide international competitive advantage and trade with other nations (Sraffa and Dobb, 1955, p.434). Although his theory has extensively contributed to the globalisation and increased international trade, his work did not mention the term ‘entrepreneur’ to its equivalent term in English (Sraffa and Dobb, 1955; Pittaway, 2012).

3.3.2.3 James Mill (1773-1836)

James Mills was also a British political economist who was contemporary to David Ricardo, In his book the “Elements of Political Economy (published in 1821), he argued that a) the capital does not increase at the same rate as the population hence political reformists should control the population growth; b) the value of a product / thing depends entirely on the quantity of labour put into it; and (c) what is now known as the “unearned increment” of land is a proper object for taxation” (Encyclopædia Britannica, 2013).

3.3.2.4 John Stuart Mill (1806-1873)

John Mill, the eldest son of British economist James Mill - described above, was another British political economist, who is known for his political economy which he described in his famous book “Principles of Political Economy”, which was published in 1848 (Mill, 1848). In this book, he examined the fundamental economic processes on which society is based: production, the distribution of goods, exchange, the effect of social progress on production and distribution, and the role of government in economic affairs (Sparknotes, 2014). However, He, like other classical British economists, did not use the term ‘entrepreneur’ in his writing; which was perhaps due to the difference in laws related to ownership of

land and property and between the ownership of property and business in France and England (Pittaway, 2012).

It therefore seems that the French classical economists were concerned with microeconomics while the British classical economists were interested in macroeconomics (Pittaway, 2012).

3.3.3 Microeconomic and the Neoclassical School of Economic Thought

Several renowned economic theorists such as Leon Walras, Alfred Marshall, John Bates Clark, Maurice Dobb and Charles Tuttle and who contributed to the development of the Microeconomic and the Neoclassical School (Pittaway, 2012).

3.3.3.1 Leon Walras (1834-1910)

His full name was Marie-Esprit-Léon Walras and he was a French economist who led to development of the Theory of Marginal Utility (also known the Marginal Theory of Value) as well as the General Equilibrium Theory (Misaki, 2014). In his book entitled Elements of Pure Economics (Eléments d'économie politique pure), published in 1874-77, he discussed the theories of exchange, production, and capital and money based on his idea of the general equilibrium (Concise Encyclopedia of Economics, 2008d).

3.3.3.2 Alfred Marshall (1842-1924)

Alfred Marshall, considered as the leader of British Neoclassical School of Economics, introduced application of mathematical principles in economics (New World Encyclopedia, 2009). His seminal work was published as a book entitled as the 'Principles of Economics' in 1890 (Ibid). He led development of the Cambridge "neoclassical" approach to economics and he suggested that the time determines the price, which is a function of both the cost of production and the

marginal utility; thus, he brought together the British classical school and the Austrian school of economics (Ibid).

3.3.3.3 John Bates Clark (1847-1938)

John Clark, an American economist, developed the theory of marginal productivity in which he argued about the income from the total national output should be distributed among owners of the factors of production, which include land, labour and capital (Encyclopædia Britannica, 2011). In his book 'Philosophy of Wealth' published in 1886, he discussed that motivation of people equally depends on their social and personal interests and rejected equitable distribution of products based on purely economic competition (Ibid). In addition, in another book entitled the 'Distribution of Wealth' published in 1899, Clark proposed the theory of utility and argued commodities contain bundle of utilities that varied in qualitative terms of utility, and he also contributed in the development of the theory of marginal productivity as well as the concept of social capital (Ibid) .

3.3.3.4 Maurice Herbert Dobb (1900-1976)

Maurice Dobb was a political economist, based at Cambridge University, who is well-known for his idea influenced by Karl Marx ideas and interpretation of the Neoclassical theory of Economics from the Marxist perspective, for which he was probably neglected (Despain, 2011; Shenk, 2013). In his book Capitalist Enterprise and Social Progress, he argued in favour of the social change instead of economic progress, which suggested his vision of economic activities in a larger social context (Shenk, 2013). He provided his own definition of the entrepreneur which was neither Marxist nor Marshallians, he described an entrepreneur as the "agent who carries out innovations", and "a decision maker who tries new things based on the subjective interpretation of the local environment" (Shenk, 2013, p.1887). For Dobb, the entrepreneur is not a passive agent but an active and dynamic agent who is responsible for change and actively and aggressively runs

the firm and directs production (Shenk, 2013, p. 1888). Thus, Dobb has been criticised to be a mature neoclassical economist (Shenk, 2013, p. 1889).

3.3.3.5 Charles A. Tuttle

Charles Tuttle did not suggest any entrepreneurship theory (Alam and Mohiuddin, 2014); however, he defined the entrepreneur in 1927 in his article entitled “The Function of the Entrepreneurs” in which he described that the distinctive function of an entrepreneur is the “ownership of the business unit” (Tuttle, 1927). According to Baretto (1989, p. 1892), Tuttle saw entrepreneur as a responsible owner who can “dictate the policy of the organisation”.

Overall, neoclassical economists are largely criticised for neglecting the entrepreneur and entrepreneurship in their thought, which was due to rise in the theory of the firm that focused on the explanation of the system of production and consumption through perfection information, and rational choice (Pittway, 2012). The Austrian and Neo-Austrian School of Economics have been credited for filling up the vacuum caused in the entrepreneurship theory by neglect of the entrepreneur by the Neoclassical School of economics.

3.3.4 Austrian and Neo-Austrian School

The Austria and Neo-Austrian school of economics includes several renowned economists such as Von Mangoldt, Frank Knight, Ludwig von Mises, Carl Menger, Israe Kirzner and Friedrich Hayek (Klein, 2008; Pittaway, 2012).

3.3.4.1 Hans Karl Emil von Mangoldt (1824-1868)

Von Mangoldt developed the theory of profit and the role of the entrepreneur is his first book entitled a study of entrepreneurial profits, which was published in 1855, in which he argued in favour of separation of entrepreneur from capitalism and suggested a linking of entrepreneurial profits to risk taking (Economic

Theories Org, 2008). In addition, he argued that the entrepreneurial profits were the reward for a range of activities, including finding particular markets, clever acquisition of productive agents, skilful combination of factors of production, successful sales policy, and innovation (Ibid.).

3.3.4.2 Eugen von Böhm-Bawerk (1851-1914)

Eugen von Böhm-Bawerk one of the earliest and leading economists belonging to the Austrian school of Economics (Encyclopædia Britannica, 2014b). His magnum opus was the development of theories of positive interest rates and capital, which led to the development of the Positive Theory of Capital' (Bohm-Bawerk, 1930; Concise Encyclopedia of Economics, 2008e). For Böhm-Bawerk, entrepreneurs bring changes (e.g. structural changes) in a market economy and entrepreneurs actions' are guided by the changes in capital goods' relative prices (Garrison, 2014).

3.3.4.3 Hans Frank Hyneman Knight (1885-1972)

Frank Knight is well known for the development of the theory of profit and entrepreneurial actions and argument that risk and uncertainty are different and due to uncertainty the entrepreneurs make critical judgments whether to engage in an economy, which were published in his book entitled 'Risk, Uncertainty and Profit published in 1921 (Brooke, 2010; Eroglu and Picak, 2011). However, his theory of entrepreneurial profits was much criticised for not providing explanation about entrepreneurial profits (Brooke, 2010).

3.3.4.4 Ludwig von Mises (1881-1973)

Mises was one of the great economists belonging to the Austrian school of economics who developed a number of economic theories such as the Theory of Money and Credit, in which he suggested that increased money and bank credit lead to inflation and business cycle (rapid progress periods followed by stagnation periods), thus, the society does not benefit from the increased money supply

(Ludwig von Mises Institute, 2012). In Mises' opinion, the entrepreneur was different from the capitalist because the former does not risk the capital while the latter does (Ludwig von Mises Institute, 2014). In his great work published as a book entitled *Human Action*, Mises described the entrepreneur as a promoter of economic improvement and the one who makes profits by anticipating the future conditions (von Mises, 1949).

3.3.4.5 Carl Menger (1840-1921)

Carl Menger is known for his contribution in the development of the theory of Marginal Utility (Marginalism) which suggested that the determination of price depends on the margin / the value of goods, which was opposite to the cost of production or labour based theories of value suggested by classical economists Adam Smith and David Ricardo. He argued in favour of his theory of Utility in his book the "Principles of Economics", which was published in 1871; thus, he led to the establishment of the Austrian School of Economics (Salerno, 2014; Concise Encyclopedia of Economics, 2008f). Menger saw entrepreneurial activity as a special type of labour service, which could not be sold and bought in the market; hence, these services have no price (Kirzner, 1978).

3.3.4.6 Israel Meir Kirzner (1930)

British born Israel Kirzner is a USA based economist belonging to the Austrian School of Economists. He is much influenced from von Mises's economics methodologies and thinking and his work is mainly on entrepreneurship, economics of knowledge and market ethics. His thinking of and research on entrepreneurship is reported in his book 'Competition and Entrepreneurship', published in 1973, in which he has criticised the neoclassical theory about too much focus on the perfect model while ignoring the role of entrepreneur (in the economic life) whom he sees alert and the prime mover of the market (Kirzner, 1973). For Kirzner, the entrepreneur is an alert decision maker who successfully predicts changes in the market conditions (Pittaway, 2012). In 2006, he received the "International Award for Entrepreneurship and Small Business Research" in

recognition of his remarkable contributions to the development of “the economic theory emphasising the importance of the entrepreneur for economic growth and the functioning of the capitalist process” (Global Award for Entrepreneurship Research, 2006).

3.3.4.7 Friedrich August von Hayek (1899-1992)

Friedrich Hayek was an Austrian born economist belonging to the Austrian School of Economic thought (Concise Encyclopedia of Economics, 2008g) and he contributed in the development of the Austrian Theory of Business Cycles, Monetary Theory and Capital theory (Hayek, 1941). In recognition of his pioneering contributions to the development of the theory of money and economic fluctuations and analysis of the interdependence of economic, social and institutional phenomena" he shared the Nobel Memorial Prize in Economic Sciences in 1974 (Bank of Sweden, 1974). In regards to entrepreneurship, Hayek favoured free entrepreneurship, which in his opinion was most effective in making discoveries (Denmart and Klein, 2003). He however did not use the term entrepreneur but used the term ‘businessman’ and he did not differentiate between the entrepreneurs, capitalists, managers and other types of business professionals (Klein, 2007).

3.3.5 Schumpeterian School of Economics

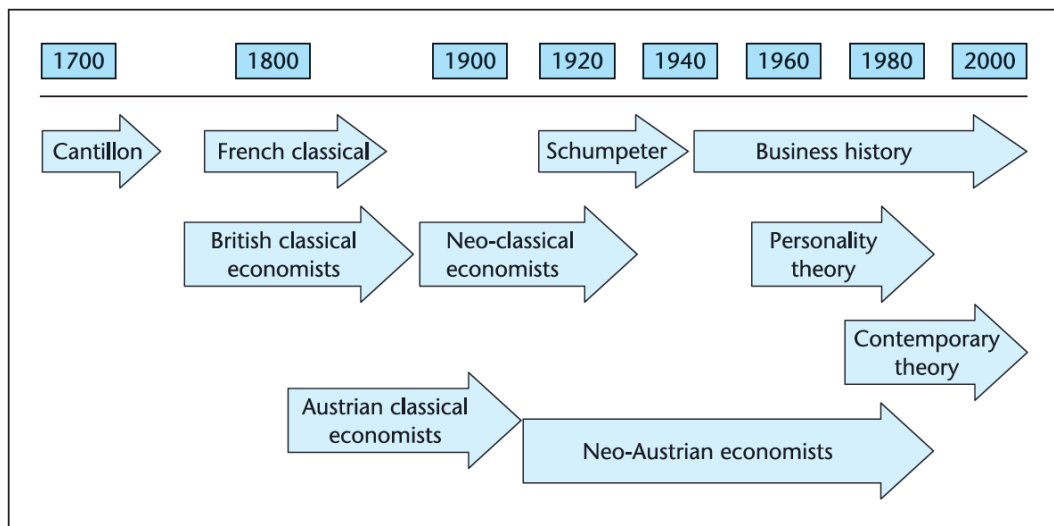
This school of economic thought has roots in the theories of economic system and the role of entrepreneurship by Joseph Schumpeter (Pittaway, 2012), as described below.

3.3.5.1 Joseph Alois Schumpeter (1883-1950)

Joseph Schumpeter was an Austrian economist who later moved to the USA, contributed extensively in the development of economic theory and entrepreneurship, which is published in his book ‘Theorie der wirtschaftlichen Entwicklung (Theory of Economic Development) (Schumpeter, 1912; Backhaus,

2003; Shionoya, 2005). Schumpeter described entrepreneur as the innovator who creatively destructs old ideas, technologies and skills; thus, leads to continuous progress and improves peoples' living standards (Concise Encyclopedia of Economics, 2008g). Schumpeter's followers such as Horst Hamusch, Markus Hierl, Alfred Greiner , Christian Bouckeamd Jens Kruger and Thomas Grebel have developed his work on the economics theory and entrepreneurship (Pyka et al., 2009), which has been labelled as the Neo-Schumpeterian Economics (Hanusch and Pyka, 2005, 2007).

Figure 3-1: Time Line of the Development of Entrepreneurship Theory



Source: Pittaway (2012)

The fundamental concept of entrepreneurship is related to the innovation, dynamism and flexibility in the process of creating and running a new venture and risk-taking (Casson et al., 2006). Such perspectives on entrepreneurship have been looked at from different angles by field experts and researchers, albeit according to their domains of enquiry. The more significant elements, such as risk-taking, formulating an effective venture team, creating skills and recognising opportunities, have been recognised as distinct perspectives. In this regard, a number of different perspectives, such as those of economics, psychology, management, sociology and entrepreneurship, have been drawn from the entrepreneurship theoretical perspectives. However, the literature supports the

three main entrepreneurship domains based on the economics, psychology and sociology perspectives (van Praag, 1999; Littunen, 2000), which are described in the following sections.

3.3.6 Personality Theory

Personality theory was introduced to the entrepreneurship domain in late 1950s and early 1960s with the focus on the entrepreneur's behaviour through the concept of the achievement motive of entrepreneurs put forward by McClelland in 1995 (Pittaway, 2012). In early days of the personality theory, entrepreneurship theorist focus on single trait of entrepreneurs; however, later theorists suggested multi-trait personality approaches such as: need for achievement, locus of control, self-efficacy, innovativeness, stress tolerance, risk taking, passion for work and proactive personality have been reported (Frese, 2009). However, personality multi-traits became a challenge to justify the traits that contribute to the success of entrepreneurs; thus, the predictive values of these traits become contentious (Pittaway, 2012). Consequently, the validity of personality traits theories was questioned and the use of behavioural or socio-psychological approaches to entrepreneurship was suggested (Gartner, 1988).

3.3.7 Contemporary Entrepreneurship Theory

From 1970s onwards, the entrepreneurship theory and research have extensively expanded due to a number of reasons but mainly because of a shift from a few large industries to small businesses (entrepreneurship), governmental policies recognising, supporting and promoting entrepreneurship, and changes in cultural attitudes towards entrepreneurship and entrepreneurs (Pittaway, 2012). In addition, there has been extensive expansion and diversification in the entrepreneurship theory such as shift from single trait to multi-trait behavioural approach to entrepreneurship and focus on what entrepreneurs does rather than

who they are and how they do (Gartner, 1988). Researchers have thus started investigating behavioural, organisational and sociological aspects of entrepreneurs and entrepreneurship as well as the understanding entrepreneurs and their contributions in the entrepreneurship (Pittaway, 2012). Consequently, research in entrepreneurship has become multi-disciplinary including economics, psychology, social psychology, sociology, management, engineering and mathematics (Pittaway, 2012). One of the latest significant theoretical development in the entrepreneurship field has been development of the theory of effectuation (Sarasvathy, 2001), which is summarised below.

3.3.8 Effectuation Theory

In 2001, Sarasvathy proposed the Theory of Effectuation in relation to entrepreneurship and argued that entrepreneurial opportunities have to be created by entrepreneurs (Sarasvathy, 2001); thus, she challenged the traditional economic views that economic opportunities already exist and the entrepreneurs either discover them (Hayek, 1945; Schumpeter, 1976) or are alert to them (Kirzner, 1979). Sarasvathy (2001) further argued that effectuation rests on the logic of control while the traditional causation process on logic of prediction. In the effectuation theory, Sarasvathy's model comprised three components i.e. logic of control, endogenous goal creation, and partially constructed environment, which integrated ideas: 'exploration and the challenge to pre-existent goals (March, 1991), gathering of evidence against planning and prediction (Mintzberg, 1991) and' enactment and living forward (Weick, 1999).

The effectuation, according to Sarasvathy (2003), is a process of generating the alternatives rather than choosing from the available alternatives. In addition, the effectuation process means concurrent identification and assessment of desirable and undesirable qualities of many possible ends; thus, it involves not only the choice but also designing of alternative goals (Sarasvathy, 2003). She further argued that in the process of effectuation expert entrepreneurs use the inverse of

classic causation model used (Sarasvathy, 2003). Moreover, effectuation has been described as a logic, which derives the process through which existing artefacts are transformed into new artefacts by entrepreneurs (Sarasvathy and Dew, 2005). Sarasvathy and Dew (2013) have also opined that the “effectual entrepreneurship is social choice within the market process” and “effectuation has an affinity with creative views of the market process”.

In the effectuation theory, five principles have been suggested i.e. bird-in-hand (starting with available means e.g. who you are, what you know and whom you know), affordable loss (focusing on the downside risks and invest only what can be afforded to lose), crazy quilt (forming partnerships – creation self-selected stakeholders’ network), lemonade (embracing and leveraging contingencies / surprises) and pilot-in-the-plane {control v. predict i.e. creating the future without predicting it) (Sarasvathy, 2012). The effectuation theory has been criticised for taking entrepreneurial means as given (Chiles et al., 2007; Foss et al., 2007).

In the light of aforementioned overview of the evolution of the entrepreneurship, it can be summarised that development of entrepreneurship field has roots in different schools of thoughts. Consequently, entrepreneurship has developed and become multidisciplinary subject mainly economics, psychology, management / business administration, sociology, cultural anthropology, business history, marketing, finance, strategy / policy and geography; thus, it involves various research methods, traditions and perspectives (Carlsson et al., 2013). Thus, entrepreneurship has been studied using different approaches such as economic, psychological, socio-cultural and management approaches (Cuervo et al, 2007). It is therefore important to describe the key perspectives on entrepreneurship.

3.4 Main Perspectives of Entrepreneurship

The main perspectives of entrepreneurship include economic, psychological and sociological perspectives, which are described below.

3.4.1 Entrepreneurship from the Economic Perspective

In regards to the relationship between entrepreneurship and economic activities, perhaps the most illustrating point that prevails and contributes to common measures of economics is employment, income and risk. Addressing the concept of entrepreneurship alongside undertaking entrepreneurial activities shows uncertain or unpredictable returns. From an economic point of view, the primary focus is that an entrepreneur buys at certain and known prices but sells at uncertain and unknown prices (Carton *et al.*, 1998). In view of this, it is also recognised that there are risks, the taking of chances and much uncertainty. O'Farrell (1986, p. 144) argued that uncertainty is all pervasive and those who cope with this in their economic pursuits are Cantillon's entrepreneurs; thus, implying that they are not necessarily capitalists but that their key role is to bear uncertainty.

Schumpeter's study (1934) is the first systematic attempt to identify the role of entrepreneurship in the overall economic picture (Figure 3.1). In this analysis, the entrepreneur acts as an innovator who introduces new markets, new goods and services, and discovers new sources of supply (Robinson *et al.*, 1991; Dana, 2001). Thus, Outcalt (2000) acknowledged that Schumpeter (1934) should be credited with contributions to the study of entrepreneurship from the economic perspective. However, before Schumpeter, Jean Baptise Say (1845), who is known as the father of entrepreneurship, defined the entrepreneur as a coordinator and supervisor of production, who divides the profits of the entrepreneur from the profits of capital. Moreover, in a personal enterprise he or she receives profit, salary and interest as an entrepreneur, manager and investor of capital respectively (Ibid).

From the above common characteristics of the entrepreneur, it is found that the entrepreneur can be identified as an innovator who takes risk, discovers new markets, makes profit, motivates others, manages the effort of others, supplies products and creates organisation. In performing these activities, the entrepreneur

is known as an agent in all economic systems. As a summary, Deakins and Freel (2012) have presented the key contributions of some of the early, well-known economists in the field of entrepreneurship (Table 3.2).

Table 3-2: Early Economic Theorists Views on Entrepreneur’s Role and Attributes

Year	Theorist	Entrepreneur’s role / attributes
<u>Classical Era of Entrepreneurship Concept</u>		
1755	Cantillon	Speculator, organiser of factors of production, catalyst for economic change
1800	Say	Coordinator, organiser of factors of production, catalyst for economic change
<u>Neoclassical Era of Entrepreneurship Concept</u>		
1890	Marshall	Coordinator, Innovator, Arbitrator
1907	Hawley	Uncertainty bearer
1921	Night	Decision maker in an uncertain environment
1925	Edgeworth	Coordinator
<u>Mature Neoclassical Era of Entrepreneurship Concept</u>		
1925	Dobb	Innovator
1927	Tuttle	Owner of the uncertain environment
1930	Weber	Directing mind and the moving spirit, religion major driver of entrepreneurship
1952	Hoselitz	Managerial skills and leadership
1956	Harbison	Organizing quality
1962	Hagen	Authoritarian personality
1968	Libenstein	Gap-filler
<u>Modern Neoclassical Era of entrepreneurship Concept</u>		
1973	Kirzner	Alert to profitable opportunities
1982	Casson	Coordinator of scarce resources under uncertainty
1993	Baumol	Innovator and manager influenced by existing incentive structure
<u>Schumpeterian School</u>		
1912	Schumpeter	Innovator, creative destroyer of old ideas, technologies and skills; ‘hero’ figure
<u>Austrian and Neo-Austrian School</u>		
1855	Mangoldt	Entrepreneur linking profits to risk taking
1891	Bohm-Bawek	Introducer of changes in the market economy
1921	Knight	Risk taker, and uncertainty are different and entrepreneurs make critical judgement due to uncertainty
1931	Hayek	Visionary businessman
1949	Mises	Promoter of economic improvement, maker of profits by anticipating future conditions
1973	Kirzner	Decision maker, predictor of market changes

Developed and updated by researcher based on Deakins and Freel (2012) and Alam and Mohiuddin (2014)

3.4.2 Entrepreneurship from the Psychological Perspective

Many researchers have investigated entrepreneurship from the psychological perspective. According to Derville (1982, p. 1), psychology is the scientific study of behaviour. From this point of view, it can be argued that entrepreneurs share a common type of personality, which goes some way to explaining their behaviour. Claiming that the unique characteristics of entrepreneurship distinguish entrepreneurs from others, this approach is based on how personal traits affect one's own inclination towards entrepreneurship and the extent to which an individual possesses these traits may explain why some entrepreneurs are more successful than others are (Koh, 1996; Baron, 2000). In this regard, the psychological perspective looks at the distinct behaviours that distinguish entrepreneurs from non-entrepreneurs. McClelland (1961) and Hornaday and Aboud (1971) characterised entrepreneurs as individuals who possess a high need for achievement and who show more initiative and exploratory behaviour than non-entrepreneurs did. According to McClelland (1961, p. 205), 'achievement is a desire to do well, not so much for the sake of social recognition or prestige but for the sake of an inner feeling of personal accomplishment'. This concept has been supported by Gray *et al.* (2006), who noted that successful entrepreneurs possess a high need for achievement and independence, which leads to the entrepreneurial psychological perspective.

Another characteristic that distinguishes entrepreneurs is their risk-taking propensity. Underpinning this concept, Colton and Udell (1976) suggested that it is the individual's risk-taking propensity that differentiates the entrepreneur from other people. In this regard, different researchers, such as Knight (1971), pointed out that entrepreneurs are 'takers of non-quantifiable uncertainties' with the division of management and ownership. Martin (1982, p. 16) indicated that 'a person who takes risk with his or her capital is not necessarily an entrepreneur but only an investor. However, one who risks his or her reputation or a portion of it in a large corporate organisation, as a result of innovation with which he or she is

closely identified, fulfils some of the preconditions of entrepreneurship'. Investor entrepreneurs encounter business risks owing to the fact that they deal with uncertainty. Kuratko and Hodgetts (2007) described entrepreneurs as being people who take calculated risks and as taking an approach when deciding on a business that means they are not thoughtless gamblers but skilled business people.

In addition, entrepreneurs are known as individuals who believe that they can control their business fate and control their own future. Through the achievement theory, entrepreneurs are characterised by their belief that their behaviours are responsible for determining their own fate. In this concept, it is expected that entrepreneurs believe they have control over their own lives. This concept has been disclosed as self-confidence, initiative-taking, responsibility-taking, and belief in one's own success or failure (Perry, 1980; Gray, 1987). The literature supports the view that looking at the locus of control fails to differentiate between entrepreneurs and managers, with no difference in the locus of control being identified between these groups (Brockhaus and Nord, 1979). Through synthesising different views of researchers regarding entrepreneurs' psychological perspectives, the above concepts, such as the need for achievement, risk-taking propensity and locus of control, are the major components of entrepreneurs' psychological traits.

3.4.3 Entrepreneurship from the Sociological Perspective

From the sociological perspective, entrepreneurs are considered as people who are contribute to different social norms, values and social networks, which may influence individuals' social environment for the development of entrepreneurship (Schaper and Volery, 2004). The social learning theory emphasises the importance of the environmental and situational determinants of behaviours. According to Atkinson *et al.* (1983, p. 58), 'to predict behaviour, we need to know how the characteristics of the individual interact with the characteristics of the environment'. These researchers distinguish the behaviour

of individuals through different kinds of learning experience and recognise behaviour as being developed through learning and direct experience, whilst others observe the actions of others and note the consequences.

From the sociological perspective on entrepreneurship, Vesper (1980) indicated various factors, such as the role of expectations of parents and children, attitudes towards innovation and wealth, migration, and social class that have a significant effect on individuals' inclination and intention toward entrepreneurship. In the literature, many studies have been found to focus on entrepreneurs' sociological aspects to develop and set-up new businesses, such as Vesper (1980), Gartner (1985), Chell (1985) and Schaper and Volery (2004). However, Vesper (1980), a known as the special sociologist for entrepreneurship, focused on religious beliefs, ethics and spirit of capitalism as the determinants of entrepreneurial behaviour in the society. Indeed business requires proper information, skills, resources and labour to start as well as the social ties that provide a good avenue for accessing these resources (Tesfom, 2006). In brief, the entrepreneur needs social, cultural and environmental factors that support the set-up of a new business. Along with these factors, family background plays a key role in this context.

3.5 Importance of Entrepreneurship

Entrepreneurship is not something novel for modern societies. It has existed since the beginning of the time and can be found in the hunter-gatherer age, the agricultural age, the mercantile age, the industrial age and the service age (Maranville, 1992; Coulter, 2003; Harfst, 2005). However, we are now in the era where enterprise and entrepreneurship is more significant than in the past, with every corner of the globe now experiencing an unprecedented 'entrepreneurial effect' (Scarborough and Zimmerer, 2003). This is particularly obvious in the USA, where more than a thousand new businesses are created every hour of each

working day (Bygrave, 2004). The literature describes entrepreneurship as one of the best economic development strategies for boosting a country's economic growth (Antonites, 2003). In this regard, researchers such as Rae *et al.* (2010), Rae (2008), Fayolle and Degeorge (2006), Matlay and Westhead (2005), Venkatachalam and Waqif (2005) and Wennekers and Thurik (1999) have directed the main focus.

Thus, in the literature, the “entrepreneurship” and “entrepreneur” are shown to have become everyday slogans and researchers, policy makers, economists, businessmen, practitioners and academics have directed their attention towards knowing the philosophy of entrepreneurship (Bécharde and Toulouse, 1998; Schaper and Volery, 2004; Matlay, 2005a). For most researchers, the popularity of entrepreneurship is largely owing to its positive effect such as a catalyst that creates wealth and job opportunities (Laukkanen, 2000; Postigo and Tamborini, 2002; Matlay, 2005b; Othman *et al.*, 2005; Gurol and Atsan, 2006). Literature reveals that most commonly there has been a positive relationship between entrepreneurship and economic growth in terms of job creation, firm survival and technological change (Gorman *et al.*, 1997; Laukkanen, 2000; OECD, 2001; Lena and Wong, 2003; Karanassios *et al.*, 2006; Rae *et al.* 2010). From the economic development point of view, entrepreneurship is a critical input because it encourages innovative thinking, generates job opportunities, and acts as a ‘stabiliser’ for countries, cultures and societies (Formica, 2002; Postigo and Tamborini, 2002; Rae, 2008).

For many researchers the dominant focus of entrepreneurship studies is a nation's economic prosperity and entrepreneurial activity levels. This is largely owing to the fact that new products or services are more likely to be created when more entrepreneurs exist and when more products or services are offered, a greater workforce is needed. Consequently, there is to direct generation of more new jobs whilst reduction in the problem of unemployment (Sergeant and Crawford, 2001). Thus, entrepreneurship contributes not only to individuals' development but also to the social and national development. In addition, entrepreneurship is able to lift

people out of the cycle of poverty and helps to create and increase their wealth besides providing secure jobs (Pearce, 2005). In view of this, for most social science researchers, entrepreneurship is considered one of the most reliable ways to exchange bad fortune for a new and prosperous life (Saboe *et al.*, 2002).

3.6 A rationale for Entrepreneurship Policy

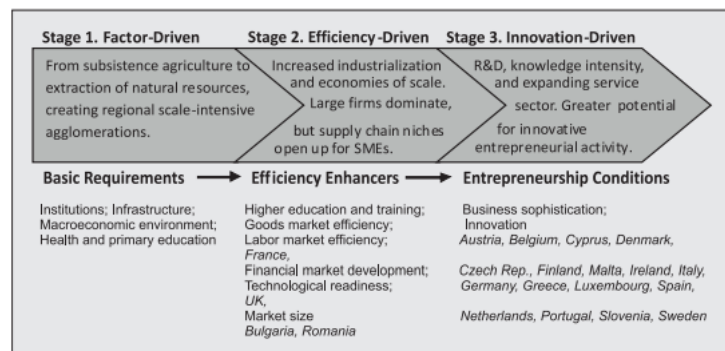
In the global economy, international institutions such as the World Bank (WB), the World Trade Organisation (WTO), and the European Union (EU) exert a growing influence on entrepreneurs and entrepreneurial opportunities. The design of strategic documents in the EU Policy area and various scientific researches signifies prominent role of entrepreneurship in the contexts of economic and social regarding the entrepreneurship policy development rationale. The Organisation for Economic Co-operation and Development (OECD) (2008) with the help of entrepreneurship policy makes it stronger by innovating underpins by creating the firm and expanding it, improving its productivity in the enterprise field.

The Global Entrepreneurship Monitor (GEM) focused that immense growth of entrepreneurship is the major contributor of fresh employment opportunities within an economy, and competitiveness at the national level depending on the cross border entrepreneurship with innovative ventures. In addition, the World Economic Forum (WEF) identified entrepreneurship development using the GEM related with the economic development phases. Based on the WEF, aiming of the initiatives to improve entrepreneurship on economic development level (Figure 3.5).

To consider the development of economic development in different phases, the entrepreneurship is considered necessary to develop an economy which is innovation driven. The European Commission (EC) proposed an action plan for entrepreneurship such as an identified strategic area for public policy action;

fuelling entrepreneurial mindsets through the promotion of entrepreneurship education and encouraging more people to become entrepreneurs, including groups with specific needs such as women and entrepreneurs from ethnic minorities. Other aims consisted of gearing entrepreneurs for growth and competitiveness through the promotion of national and international networks and partnerships as the way for better access to knowledge, improving the flow of finance through the development of different financial instruments and creating a more SME friendly regulatory and administrative framework.

Figure 3-2: Characteristics of Economic Groups and Key development focus



Source: GEM (2011, p.13) and WEF (2012, p.20)

OECD (2008) denoted such determinants of entrepreneurial activity as the potential areas for entrepreneurship policy such as resources: access to new technology, including information and communication technologies (ICT) and finance. ICT is indicated here as a key player in the interplay between entrepreneurial policy and innovative activity, when access to finance is named as a crucial limitation for firm creation and innovation, skills, cultural factors, opportunities related to market conditions, and regulatory frameworks.

Entrepreneurship can be broadly classified based on public policy along with the integrated framework development based on government actions, based on which, enterprises the individuals or the facets of environment that play a vital role together. However, business procedure will not express to the inspiration of the

factors and also through the business procedure policy phases is compared through the SMEs or producers of small and medium size companies. But, Stevenson and Lundstrom (2001, 2002) denoted two major ways to differentiate policy of entrepreneurship from SME policy (p. 28, 45). The first method is the breadth of policy orientation equipped with various instruments. While SME policies aim at existing SMEs of the firm in a predominant fashion, the policy of entrepreneurship aims at entrepreneurs who are at various stages in process to develop a fresh or early business stage (p. 45). The second method is based on the fact that each country possess a ministry agency or a governmental agency which is virtually charged to promote the SME sector viability. But there are no agencies existing to enhance entrepreneurship (p. 3, 47). Based on the above mentioned distinctions, Stevenson and Lundstrom (2001) stated entrepreneurship policy as (1) the measures of policy that are held to kindle entrepreneurship; (2) the ones that aim at the start-up, pre-start, or the post start up phases within the process of entrepreneurship; (3) possesses both the design and delivery to tackle the motivation, skills and opportunity; (4). Using the main objective to encourage lot of people to begin their own business (p. 28). In addition, the motivational roles by awareness, skills obtained using knowledge, abilities plus skills essential to exploit the opportunity and start-up support opportunity are stressed as the entrepreneurship policy's key foundations (P. 27, 45-46). Hence, the policy of entrepreneurship is directed towards the society of entrepreneurial development as a whole. It also underlines the measures of soft policy (p. 27) which includes the education, consultation of skills, abilities, promoting entrepreneurial culture that are entrepreneurial in nature to promote the interests and the people's opportunities to begin their own business. Entrepreneurship policy indicates the general business environment where various business activities and its kind tend to flourish.

3.7 Entrepreneurship Literature

In regards to reviewing entrepreneurship literature, the researchers focussed on issues of business ideas, venture growth because these are precursors of business opportunities, and constitute the starting point of the entrepreneurial process, which may eventually lead to higher venture growth (Dimov, 2007; Locke and Baum, 2007). Review of entrepreneurship literature revealed that many of the dimensions underlying value-adding behaviour depend upon the formal institutions, the laws and rules that define the economic incentives guiding individual and organisational choices, and social arrangements and norms that impact how entrepreneurs engage in creating opportunities for creating employment and developing small business ventures (Hwang and Powell, 2005; Boettke and Coyne, 2009). However, entrepreneurship research is dominated by the fundamental questions of why some people see new business opportunities (Venkataraman, 1997; Shane and Venkataraman, 2000). Empirical evidence reveals that people can differ widely in their ability to see new business opportunities within a given situation. However, social and economic impact is enormous, which is why some see nothing while others see attractive new opportunities everywhere.

The possibility of realising these opportunities is contingent upon individual entrepreneur behaviour through change in the world, the external environment or the internal sense they make of it. In this situation individual look for opportunities for value creation and the ability to spot opportunities is the critical step in the entrepreneurial process. There is therefore need for research devoted to better understand the diverse range of opportunity types and the corresponding entrepreneurial actions (Eckhardt and Shane, 2003; Sarasvathy et al., 2005).

In the literature, learning and planning approaches for business have been debated since the 1960s. To this regard, Ansoff (1991; 1994) suggested a crucial role for planning in strategy while Mintzberg (1990, 1991) argued in favour of the emergent learning approach compared to the planning. However, in the last

decade, a similar debate appeared in the entrepreneurship literature for example Shane and Venkataraman (2000) described the phenomenon as a planned process of opportunity exploration, Kamoche et al. (2003) focused on improvisation and Sarasvathy (2001) debated on effectuation. The theoretical root of effectuation breaks up the prediction dichotomy into logic of control and endogenous goal creation (Sarasvathy, 2001, 2008). The basis of effectual entrepreneurial concept is the Knight's (1921) notion of 'true' uncertainty points in which probabilities of success are unknown. The prediction of success of business is impossible, and in such situation, entrepreneurs have to rely on some other means to run their activities. Weick (1995) suggested the notion of enactment for the effectual model and Sarasvathy (2001) suggested the effectual model that explicitly addresses logic of control, endogenous goal creation, and constructed environment. After empirical investigation, the effectual model is integrated into five dimensions such as non-predictive control, means-driven action, affordable loss, partnership and leveraging (Wiltbank, et al., 2006; Sarasvathy, 2008; Dew et al., 2009).

Research studies have indicated the relationship of planning or effectuation towards the business performance or growth. In a meta-analysis Miller and Cardinal (1994) showed strong direct and positive effect of planning on firm growth. Brews and Hunt (1999) revealed a positive effect of planning towards the growth and in unstable environments learning supported it. However for the new business researchers, Shane and Delmar (2004) suggested that business planning supports business organising activities and reduces the problem of businesses closing. In a recent Meta-analysis based on thirty six studies, Brinckmann et al., (2010) confirmed the benefits of planning for venture performance and growth. However, some researchers suggested that planning is not necessarily beneficial for firm growth. For example, Jenkins and Johnson (1997) found that emergent strategies and non-deliberate strategies might be influential in producing entrepreneurial outcomes. A review of the literature showed that improvisation may lead to business growth but does not necessarily do so (Hmieleski and Corbett, 2008).

In the literature, an important avenue of research is opportunity creation and entrepreneurship, which is suggested by Sarasvathy *et al.* (2010). Sarasvathy (2001) argued that individuals may also utilise effectuation processes to pursuing entrepreneurial opportunities and that this can be achieved by using the resources they have at their immediate disposal. Few researchers have attempted to empirically test effectuation model (Gruber, 2007; Wiltbank *et al.*, 2009). For example Wiltbank *et al.* (2009) found empirical evidence in support of the arguments in the theory of effectuation. In another study, Read *et al.* (2009) conducted a meta-analytic review of relevant studies and found a positive relationship of effectuation dimension with performance. According to Perry *et al.* (2012) “effectuation research has not grown more quickly owing to the following reasons: the fact that effectuation represents a challenge to conventional, entrenched entrepreneurial strategy wisdom; the complexity associated with developing consistent, observable behavioural variables from a cognition-based theory; and the difficulty related to developing and validating effectuation (and causation) measures”.

Sarasvathy (2004) argued that, in a given population, there are natural born entrepreneurs and non-entrepreneurs regardless of their environment and these are extreme cases. However, the majority of individuals are conditioned by their surroundings. Therefore providing a conducive atmosphere and surrounding could lead to a greater blossoming of entrepreneurial activity. Generally external factors ranging from local institutions, cultural beliefs, macroeconomic conditions and physical infrastructure are well evidenced, universally accepted influences upon a person’s entrepreneurial desire and the emergence of entrepreneurial activity (Low *et al.*, 2005).

Given the stronger link that entrepreneurship has with different thoughts and theories, many well-known researchers have contributed in the entrepreneurship domain. For example Bowen and DeClercq (2008), Boettke and Coyne (2009), Autio and Acs (2010), Aidis *et al.* (2012), and Estrin *et al.* (2013) conceptualised entrepreneurial activities with the formation of new ventures with the potential to

generate a significant economic impact. These activities are influenced by the institutional context, which affects the high growth aspirations of new ventures. In this context, creativity is concerned with the identification process (Heunks, 1998; DeTienne and Chandler, 2004). Creativity is a process of divergent thinking and using diverse information to generate multiple and original business ideas. Divergent thinking is related to venture growth through business owners' generation of business ideas. Researchers linked it to entrepreneurship because creativity should promote identifying new opportunities (Shane and Venkataraman, 2000; Shane, 2003; Hennessey and Amabile, 2010). According to Dimov (2007), entrepreneurs use creative processes to perceive new ideas and to put them into action by opportunity identification. Lumpkin and Lichtenstein (2005) conceptualised opportunity identification as a creative process involving different steps of preparation, incubation, and insight.

Apart from this, passion is a well-known key driver of entrepreneurial action and exists at the heart of entrepreneurship (Cardon et al., 2005). According to Brännback et al. (2006, p. 6), passion of individuals can “fuel motivation, enhance mental activity, and provide meaning to everyday work”. In entrepreneurial perspectives, passion can foster creativity and the recognition of new information patterns critical to the discovery and exploitation of promising opportunities (Sundararajan and Peters, 2007; Baron, 2008). More specifically, passion is concerned with the ability of entrepreneurs to raise funds and motivate individuals (Sudek, 2006; Cardon, 2008; Cardon et al., 2009b; Mitteness *et al.*, 2012). Accordingly, the researcher focussed on a deeper understanding of passion as a central element of entrepreneurial efforts (Cardon et al., 2009a; Chen et al., 2009). More importantly, the development of such theories may play significant roles in fostering entrepreneurs' increased efforts, dedication to relevant tasks, persistence towards goals despite significant obstacles and improving new ventures for survival and performance (Bierly et al., 2000; Utsch and Rauch, 2000; Baum et al., 2001; Cardon et al., 2013).

In a given situation, entrepreneurial efforts are generally recognised for the identification and exploitation of business opportunities. Within this general domain, the affective state of the individual is associated with the entrepreneurial passion. Chen et al. (2009, p.199) defined entrepreneurial passion as “an entrepreneur's intense affective state accompanied by cognitive and behavioural manifestations of high personal value”. These researchers focussed on the specific context of entrepreneurs making business plan through the investors' perceptions of the affective, cognitive and behavioural manifestations of entrepreneurs' passion. To this extent researchers focused on evaluating entrepreneurs' facial expression, voice and body language in affective manifestations. For cognitive approaches, researchers focussed on investigating the preparedness and behavioural manifestations of passion for assessing entrepreneurs' apparent commitment toward their ventures. However, in affective aspects, researchers also focused on the experience of passion. This theoretical contribution focused on how entrepreneurs report the passion they experience (Chen et al., 2009).

In the literature, family influences are important and crucial for the development of young entrepreneur's intentions (Jodl et al., 2001). Literature revealed that parents' entrepreneurial status triggers their offspring's entrepreneurial intentions (Scherer et al., 1989; Matthews and Moser, 1996). Researchers exposed the importance of a family business for entrepreneurial intentions by increasing their perceptions that self-employment is a feasible career option (Krueger et al., 2000; Sorensen, 2007). In addition, researchers assumed that to some extent entrepreneurial intentions could be inherited due to a genetic disposition for entrepreneurship (Nicolaou and Shane, 2010).

Entrepreneurial intentions develop through individual's experience, which may be positive or negative but lead to a change in their behaviour. A positive event supporting entrepreneurial intentions could be the availability of the necessary start-up capital, whereas a negative event could be the loss of a current job (Krueger et al., 2000).

3.8 Entrepreneurial Education and Development

The growing attention being given to entrepreneurship is mainly because of the globalisation, economic and social development, competition, corporate downsizing, and the emergence of a knowledge-based economy (Audretsch and Thurick, 2004). The concept of entrepreneurship is associated with the innovation and wealth-creation of individuals through business opportunities where calculated risks are taken and new ventures are launched. The most significant effect of entrepreneurship is to produce economic benefits for individuals as well as the society as a whole by the formation of new firms. This leads people chasing their own desires, goals and dreams with the establishment of new ventures, and the need to identify individuals who are capable of entrepreneurship (Rae, 2008; Fauchart and Gruber, 2011; Rae *et al.*, 2012). To a large extent, literature supports entrepreneurial activities for economic growth, contributing to market economies, creating job opportunities, and developing employability (Kurtako, 2005; Carter and Dylan-Jones, 2012; Deakins and Freel, 2012). In order to address individual vitality and the potential for economic development, researchers have focused on enhancing abilities, skills and knowledge of utilisation of their resources, and this focus has led to increasing entrepreneurial attitudes and intentions brought about by targeted education and training. In the history of the development of entrepreneurship, education has been thought of as a key factor in developing attitudes and intentions. Entrepreneurship education has eventually aimed to influence the future entrepreneurial behaviour of individuals (Cruz *et al.*, 2009).

The contribution of entrepreneurship is associated with economic growth that requires the ability and capability of entrepreneurs who are made but not born, and who can sustain their efforts for long periods. Many researchers have found that, when actions are taken to solve problems, leadership can be learnt and taught through education and training programmes (Gorman *et al.*, 1997; Young, 1997; Henderson and Robertson, 2000). A strong belief about entrepreneurship had emerged that it can develop through systematic development and planned

efforts (Vesper, 1994; Gorman *et al.*, 1997). Thus, education and training can emphasise the importance of the development of entrepreneurship and further increase and foster the right state of mind and skills for an individual to embrace entrepreneurship (Formica, 2002; Hannon, 2005; Li, 2006; Jones, 2010; Nabi and Linan, 2011; Rae *et al.*, 2012; Block *et al.*, 2013). Entrepreneurship education promotes self-employment, the formation of new businesses and develops interest in starting up a business (Sergeant and Crawford, 2001; Keogh, 2004; Rae *et al.*, 2010; Rae, 2008).

History tells that entrepreneurship education (EE) started in 1938 when Shigeru Fiji taught an entrepreneurship course at the Kobe University, Japan (Alerti *et al.*, 2004). Later, in 1947, there were the first EE programmes at Harvard (Katz, 2003). However, many EE programmes and courses were developed, documented, legitimated and started in American universities through their business schools (Franke and Luthje, 2004; Raichaudhuri, 2005). According to Kuratko (2005), the reality of EE as a force in business schools started in the early 1970s. The University of Southern California started the first Master of Business Administration (MBA) concentrating on entrepreneurship in 1971 (Kuratko, 2005). This was followed by the first undergraduate course concentrating on entrepreneurship in 1972 and in this way, entrepreneurship as an academic discipline began (Kuratko, 2005). However, the real emergence of EE was in the 1980s (Kuratko, 2005). During the early 1980s, there were over 300 universities offering courses in entrepreneurship and small business management (Kuratko, 2005). This number grew to reach 1,050 schools by the 1990s (Kuratko, 2005). Indeed, the subject has been growing internationally, and over the last two decades much attention has been directed towards this purpose. The history of EE in the USA and Sweden is shown in the Tables 3.3 and 3.4 respectively.

Table 3-3: History of Entrepreneurship Education in the USA

Year	Events
1947	Management of New Enterprises, the first MBA entrepreneurship course started at the Harvard University. 188 students took the course.
1953	Entrepreneurship and Innovation course offered at New York University by Peter Drucker.
1954	Small Business Management, first MBA small business course offered at Stanford University.
1958	Entrepreneurship course offered at the Massachusetts Institute of Technology (MIT) by Dwight Baumann.
1963	First endowed position, the Bernard B. and Eugenia A. Ramsey Chair of Private Enterprises, created at Georgia State University.
1967	First contemporary MBA entrepreneurship courses introduced at Stanford University and New York University.
1968	First undergraduate entrepreneurship concentration started at Babson College.
1971	First MBA entrepreneurship concentration started at University of Southern California.
1972	First undergraduate entrepreneurship concentration started at University of Southern California.
1975	Entrepreneurship courses started at 104 colleges/universities reported by Karl Vesper.
1979	Courses in entrepreneurship or small business started at 263 post-secondary schools.
1981	First entrepreneurship research conference held at Babson College and first publication of <i>Frontiers of Entrepreneurship Research</i> .
1982	First undergraduate entrepreneurship course in Marketing Department at University of Illinois – Chicago.
1983	First entrepreneurship course started in an engineering school at the University of New Mexico.

1986	Small business or entrepreneurship courses started at the 590 post-secondary schools.
1991	102 endowed positions started at various educational institutions.
1991	57 undergraduate and 22 MBA programmes with entrepreneurship concentrations started at different universities and colleges.
1995	Over 450 schools participated in the Small Business Institute programme.
1996	First Family Business major offered at Texas Tech University.
1998	Small Business Institute programmes started at 220 schools.
1999	Special Research Forum on International Entrepreneurship published in Academy of Management Journal.
2000	Entrepreneurship courses offered at more than 1,500 universities and colleges.
2002	Small Business Management, Entrepreneurship, and New Venture Creation courses frequently offered in classes in two- and four-year colleges.
2004	More than 2,200 courses offered at more than 1,600 schools, 277 endowed positions, and 44 refereed academic journals devoted to entrepreneurship.
2006	More than 5,000 entrepreneurship courses offered at universities and colleges, according to the Kauffman Panel on Entrepreneurship Curriculum in Higher Education.
2007	The evolution of entrepreneurial thinking drawn from developmental psychology and educational psychology.
2008	The Launch Pad event at the University of Miami, a private university in South Florida, invited students and alumni to submit a plain-English pitch about an idea for a company.
2009	Creation of the National Advisory Council on Innovation and Entrepreneurship (NACIE), within the US Department of Commerce, for implementation the America COMPETES Act. The Council provides ideas and feedback on innovation and entrepreneurship policies

	(U.S. Department of Commerce, 2013).
2009	US federal agencies provide \$36 billion to universities as Federal R&D grants over the last decade (National Science Foundation (2012).
2010	Establishment of the Office of Innovation and Entrepreneurship (OIE) for promoting and supporting high growth entrepreneurship (U. S. Economic Development Administration, 2014).
2010	In April 2010, leaders of 142 leading American universities signed and submitted a letter to the Secretary of Commerce through the NACIE, suggesting a strategic framework for the advancement of innovation and entrepreneurships through higher education institutions / universities (U.S. Department of Commerce, 2013).
2011	President Obama approved a Presidential Memorandum entitled “Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses.”, which required federal R&D and entrepreneurship agencies for developing plans to enhance the commercialization of federally-funded R&D over the next several years (U.S. Department of Commerce, 2013).
2012	Academia, industry and government worked together to formulate and implement a strategy to promote regional development via a ‘high-tech council’ or ‘knowledge circle’.
2012	Innovation Fund America launched by the Kauffman Foundation (Innovation Fund America, 2014).
2013	The OIE consulted with leaders of 131 research universities across the US as well as a number of community colleges, regional colleges and historically black colleges and universities and collected information about what these institutions have done to promote innovation and entrepreneurship (U.S. Department of Commerce, 2013).

Source: Developed by the Researcher by updating work by Katz, (2003; pp. 283–300)

Table 3-4: History of Entrepreneurship Education in Sweden

Year	Events
1996	Chalmers School of Entrepreneurship (CE) started a project to educate students to become future entrepreneurs.
1994	Jonkoping International Business School (JIBS) focused on entrepreneurship and renewal in commerce and industry.
1999	Linkoping University established the Centre for Innovation and Entrepreneurship (CIE) and started the SMIL Entrepreneurship programme.
2000	Malardalen University started the Kick Start programme.
2001	School of Economics and Commercial Law at Gothenburg University started the Summer Entrepreneurship Business Laboratory and focused on students' start up.
2007	200,000 students offered training in entrepreneurship under the Junior Achievement programme.
2009	In the Budget Bill 2009, Government presented entrepreneurship in the field of education and developed Strategy for Entrepreneurship 2009.
2011	Entrepreneurship one of the key elements of new curriculum at comprehensive schools in Sweden (Ringarp, 2013).

Source: Adapted from Rasmussen and Sørheim, 2006; Eurydice network, 2012

To a large extent entrepreneurship, education has become commonplace in HEIs. Almost all governments of developed and developing countries have also been increasingly supporting the provision of enterprise / entrepreneurship education in its many forms (Rae *et al.*, 2012). The United Kingdom and France initiated entrepreneurship learning in the 1970s. At present, their free enterprise programmes are offered just as electives. At the undergraduate stage, 73 percent of the entrepreneurship programmes are offered as electives; at the postgraduate

stage, 69 percent of all the entrepreneurship programmes are optional (Niyonkuru, 2005; Wilson, 2004). In China, business schools have business venturing courses and concentrate on entrepreneurship units (Hongbin et al., 2008). Latin American nations also offer entrepreneurship courses, particularly in Brazil where a technical innovation law was issued in the year 2004 to support tactical partnerships between universities, technical institutions and firms. As per Almeida (2008), 82 percent of colleges in Brazil offered entrepreneurship education in the year 2004.

Entrepreneurship education is an important element of education, especially in the context of business education (Kolveroid and Moen, 1997). In fact, entrepreneurship education motivates students to make their career decision to become self-employed and teachers, academics and professionals have moved away from the myth that entrepreneurs are born, not made (Kuratko, 2005). Scholars have been driven to find out answers to the questions of ‘how to learn’ and ‘how to teach’ entrepreneurship (Fayolle and Klandt, 2006). Several researchers have also suggested that there is a need for entrepreneurial pedagogy through the curricula of HEIs (Gibb 1987; Johanson, 1988; Gibb 2002; Kuratko 2005; Albornoz 2009; Neck and Greene 2011; Rae *et al.* 2012). Hence, researchers have posited that governments are facing challenges to their education systems to create those graduates who are capable of seeing opportunities and harnessing the resources to bring them to fruition and, in the process, bringing about a change (European Commission, 2008).

Reviewing the literature on entrepreneurship reveals that it is evident that entrepreneurship, or specific facets of it, can be taught (Kuratko, 2005). According to Drucker (1985), entrepreneurship is an academic discipline that can be learned. According to Gorman *et al.* (1997), all empirical studies have examined whether entrepreneurship can be taught or influenced by entrepreneurship education. Henry et al., (2003) are of the opinion that training and support can influence individuals’ intentions towards entrepreneurship (Henry *et al.*, 2003).

Gorman *et al.* (1997) completed a comprehensive literature review on the subject of entrepreneurship, and found that, despite a considerable range in the quality of studies surveyed, it was clear that empirical research on education for entrepreneurship was still at the exploratory stage. Based on the research work of Dainow (1986) and Gorman *et al.* (1997), four key dimensions of entrepreneurship education and training can be illustrated, namely higher educational institutions (HEIs) as drivers of economic growth; basic and higher education and research; business, technical and support services; and executive development and learning by doing. The related literature is reviewed to analyse these four key dimensions of entrepreneurship education.

3.9 The Significant Effects of EE on Individuals

Entrepreneurship has never been more important than now; enterprise and entrepreneurship have been increasingly introduced to higher education curricula and pedagogy to develop enterprise and entrepreneurship skills in students (Gibb 1987; Johnson 1988; Gibb 2002; Kuratko 2005; Manolova *et al.* 2008; Alborno 2009; Neck and Greene 2011; Rae *et al.* 2012).

Research suggests that education in entrepreneurship plays a significant role in shaping and raising individuals' interest in entrepreneurship (Le 1999; Low 2005; Luthje and Franke 2003). According to Holmgren and Form (2005), education that emphasises entrepreneurship is the precursor to changing students' attitudes in considering entrepreneurship as a viable career option. Volery and Mueller (2006) highlighted the possibility of the role of entrepreneurship education in influencing an individual's decision to become an entrepreneur. Gorman *et al.* (1997) in their seminal work reviewing ten years of literature agree that formal entrepreneurial education programmes influence students' predisposition towards entrepreneurship.

Currently, entrepreneurship education programmes (EPE) have different

approaches. However, there is increasing interest from students about entrepreneurial careers (Brenner *et al.*, 1991; Hart and Harrison, 1992; Fleming, 1994; Kolvereid, 1996a), whilst such courses are used to increase awareness by public authorities about the importance of entrepreneurship as a contributor to economic development (Hytti and Kuopusjarvi, 2004; Rae, 2009). In a study of Australian university students who have attended entrepreneurship programmes, McMullan and Gillin (1998) indicated that students who are in entrepreneurship programmes are more likely to start up a venture compared to those who are in non-entrepreneurship programmes. They also contended that individuals could be educated to become entrepreneurs even if they had no initial intention of doing so. In a longitudinal study, Varela and Jimenez (2001) conducted a study and chose groups of students from five programmes in three universities in Columbia. Researchers found that the highest entrepreneurship rates were achieved in those universities that had invested the most in entrepreneurship guidance and education for their students. A study carried out by Peterman and Kennedy (2003), it is revealed that attendance at an entrepreneurship programme has positive impacts on both the desirability and feasibility of students starting up a new venture. A study of Kolvereid and Moen (1997) similarly emphasised that entrepreneurship education has a great impact on influencing graduates to act more entrepreneurially, as those 'who have taken a major in entrepreneurship have stronger entrepreneurial intentions and act more entrepreneurially than other graduates' (p. 159). Entrepreneurship education, to this end, has shouldered a big responsibility in changing students' mind-sets as it is 'the key to improving perceptions and attitudes within society and within higher education' (Galloway and Brown 2002, p. 399). In general, this researcher has used the concept of entrepreneurship education in relation to HEIs for conceptual purpose of the present study.

3.10 The Role of HEIs in Promoting Entrepreneurship

Enterprise and entrepreneurship education have become commonplace in higher education institutions (HEIs) around the world. Globally, governments have also been increasingly supporting entrepreneurship education in its many forms (Matlay, 2009; Rae *et al.*, 2012). Entrepreneurship education should facilitate a supportive pathway leading to business start-ups and the specific skills required

As mentioned in the previous section, the subject of entrepreneurship has been accepted mainly for improving the economy, and there is rising interest in the development of entrepreneurship education programmes. As is commonly seen, HEIs have an important role to play in facilitating the development of social and economic growth due to rapid changes in socio-political and economic scenarios (Mok, 2005; Co and Mitchell 2006). From the perspective of social and national economic growth, in the modern world, HEIs are to be counted as a part of an important societal system where entrepreneurship education takes a more significant role than the traditional function of research and teaching (Blenker *et al.*, 2006). In this regard, the graduates of these institutions appear to be very important in terms of competitiveness amongst nations and as dynamic resources for local and regional economic growth and development (Rae, 2008; Millman *et al.*, 2010; Rae *et al.*, 2010). Thus, HEIs are helping by becoming a part of an important societal subsystem that can be used to encourage entrepreneurship education to develop societies and economies (Bygrave, 2004; Binks *et al.*, 2006).

The dominant focus of HEIs in promoting entrepreneurship education is in providing courses to the students and encouraging them to strive for self-employment, and for the creativity and growth of small businesses (Menzie, 2003; Rae *et al.*, 2012). With the help of educational programmes, budding entrepreneurs can be encouraged to enhance their capability to develop independent businesses owing to an appropriate environment. Such institutions also have an important role to play in terms of training, business advice and even

raising funds for supporting entrepreneurial activities (Gasse and Tremblay, 2006). Accordingly, the HEIs can improve and promote the image of entrepreneurship as a potential career choice amongst (post-) graduate students (Luthje and Franke, 2003). The main goal of these institutions is centred on developing the individual's mind-set. Moreover, during recent times, entrepreneurship education has flourished in the higher education sector, and supported the creation of students' values in terms of completing a business plan whilst studying. This implies that the HEIs, through developing entrepreneurship skills, provide students with the capacity to be an economic actor. In addition, entrepreneurship education can develop high levels of self-confidence and creativity amongst students to utilise an innovative approach in decision-making to become an entrepreneur. Thus, entrepreneurship education at the higher educational level stimulates students to start a business following the completion of their studies.

The literature supports the idea that entrepreneurship education in HEIs functions largely to build up the attitudes and intentions of students towards their careers and employability (Nabi *et al.*, 2010; Lanero *et al.*, 2011; Marques *et al.*, 2012; Chang and Rieple, 2013). Thus, HEIs efforts to provide inspiration to their students about the start-up of new businesses are significant because entrepreneurship courses develop high levels of self-confidence, innovativeness, and creativity amongst entrepreneurs. However, a large percentage (56%) of new businesses fail (US Small Business Administration Office of Advocacy, 2009), which is one of the burning issues for entrepreneurial experts and researchers. This high ratio of failure leads to a challenge amongst universities in terms of sparking the entrepreneurial spirit of their graduates and to enhance their skills and abilities to deal with a risky and uncertain environment (Tan and Ng, 2006; Bumpus and Burton, 2008). Therefore, the literature supports the development of a harmonised environment at HEIs where universities utilise resources and ensure the development of positive attitudes among students towards entrepreneurship. An integrative review of the relevant literature concludes that the teaching environment and entrepreneurial experience in HEIs is one of the most vital and

influential factors in developing the perceptions of an entrepreneurial career (Autio *et al.*, 1997; Gasse and Tremblay, 2006). Therefore, a large amount of literature supports entrepreneurship courses in HEIs that may foster entrepreneurship by developing ideas and shaping attitudes and aspirations among students (Klapper, 2004; Landstrom, 2005; Rae *et al.*, 2012).

Young (1997) observed two main reasons that cause students to study entrepreneurship courses: first, they aim to start up their own ventures; and second, they want to obtain knowledge that may be supportive to running a business. A number of researchers have however argued that the majority of universities fail to prepare students for self-employment as a career option, which tends to result in graduates lacking interest in venturing into starting their own businesses (Fleming, 1996; Postigo and Tamborini, 2002; Rae *et al.*, 2012). HEIs, therefore, need to provide a stimulating learning, experience and a creative entrepreneurial environment to develop skilled graduates who understand the job-creation processes and the value of taking risks. In summary, students need to be continuously exposed to entrepreneurial competencies and skills in order to recognise business opportunities.

3.11 Review of Research Studies in Entrepreneurship Education

To date, the literature on entrepreneurship education has revealed different dimensions such as public policy, developing institutions, creativity process, resources allocation, occupational choices, environment for developing entrepreneurship with respect to favouring self-employment or small firms for potential economic growth, development and employment creation (van Stel and Storey, 2004; Acs, 2006; Hessels *et al.*, 2008; Autio and Acs, 2010; Minniti and Lévesque, 2010; Estrin *et al.*, 2013).

The main purpose of entrepreneurship education is to develop the economic and social growth of individuals. Nevertheless, several factors can affect individuals' attitudes and intentions towards entrepreneurship; hence, it is important to examine these factors for decision-making for promoting and starting entrepreneurial activities. Naffziger *et al.* (1994), for example, pointed out five major determinants that influence the individual's decision to behave entrepreneurially: personality characteristics, individual's environment, relevant business environment, specific business idea(s), and the goals of the individual. The literature also supports the role of culture in explaining motivational perceptions. A study conducted by Linan and Chen (2009) applied the TPB including human capital and demographic variables as antecedent to building an entrepreneurial intention questionnaire. The model was tested on a 519 university students from Spain and Taiwan and the researchers concluded that the role of culture in explaining motivational perceptions considerably specific. Their results showed that both attitude and perceived behaviour control had significant effects on entrepreneurial intention. Even though subjective norms had no significant direct effect on the intention, they had an indirect effect on the intention through attitude and perceived behavioural control. Demographic and human capital variables, on the other hand, exerted influence on attitude, subjective norms, or perceived behavioural control, but not directly on the intention.

More recently, a study conducted by Fini *et al.* (2012) investigated determinants of corporate entrepreneurial intention with small and newly established firms, which involved testing of a theoretical model of the micro-foundation of corporate entrepreneurial intention on a sample of 200 entrepreneurs. The results showed that corporate entrepreneurial intention was influenced by situation specific motivation, individual's skills, and perceived environmental dynamism.

Therefore, it is important that potential entrepreneurial individuals need to learn and gather knowledge that can support the development of their attitudes and intentions towards entrepreneurship. In this regard, educational institutions have an imperative role to play owing to their ability to become part of an important

societal subsystem (Bygrave, 2004; Binks *et al.*, 2006). Educational institutions promote entrepreneurship education by providing courses and training that can enhance individuals' capabilities and encourage them to strive for self-employment, creation, and the growth of small businesses (Menzies, 2003; Matlay, 2009; Rae *et al.*, 2012). Aside from these, such institutions also have an important role to play in terms of training, providing business advice, and even raising funds for supporting entrepreneurial activities (Gasse and Tremblay, 2006). In order to assess the effect of entrepreneurship education on students, Peltier and Scovotti (2010) witnessed that students feel more comfortable with entrepreneurship education when striving to be a strong entrepreneur.

In view of the influence of education about making decisions relating to becoming an entrepreneur, researchers have investigated how individuals' attitudes and intentions can be developed. Review of the entrepreneurship literature has revealed various dimensions used in researching entrepreneurship education. For example, Levie (1999b) outlined seven dimensions that have been used to examine the development of entrepreneurship education in HEIs in England. These dimensions include the class sizes; course syllabi; teaching materials; teachers' qualifications; students' numbers and types, methods used in teaching, and students' attitudes towards entrepreneurship. With regard to entrepreneurship education research, Vesper and Gartner (1997) identify at least 18 evaluation criteria for measuring entrepreneurship education. Amongst the top five criteria are the number of courses offered, publications by the faculty members, impact on the community, ventures creation by students and graduates, and innovations.

Most commonly, researchers have focused on different dimensions of entrepreneurial education; however, getting desired objects requires various other factors, including teaching approaches and cultural and environmental concerns. A comparative study, conducted by Klapper and Tegtmeier (2010), between France and Germany to establish the innovative teaching approaches in entrepreneurship as a cross-national research project, revealed that France directed attention to creating new approaches to learning about entrepreneurship through

different theories, such as entrepreneurship, network and cognitive science theories; however, in Germany, management and other disciplines worked together. In a study conducted in the UK, by Rae (2010), on the changing influences on entrepreneurship education and learning revealed that the social and cultural environment is changed by entrepreneurship in the new era. However, ethical and environmental concerns are centred on creating a discourse of responsible entrepreneurship, where it is to be conceptualised that there is a shift of old to new entrepreneurship. Fayolle and Degeorge (2006) further investigated the effects of entrepreneurship education based on three dimensions: learning process, institutional environment and resources.

In addition, Fayolle *et al.* (2006) examined the variables of EEPs, such as institutional setting, content, and teaching methods in assessing the impact of entrepreneurship education. In their study, using the TPB to test the impact of an entrepreneurship education programme, a three day seminar focused on the evaluation of new venture projects. Students enrolled in a Specialised Master in Management program at a French business school took part in the study. The researchers found that all three determinants had significant influence on entrepreneurial intentions. More importantly, Schieb-Bienfait (2004) is of the view that entrepreneurial course content, pedagogical issues, new learning approaches, the characteristics of educators, and students' needs all require thorough study in an attempt to gain understanding into the effects of entrepreneurship education on students' inclinations towards entrepreneurship. Therefore, Rae (2009) argued that entrepreneurial learning and venture creation is significant for the success of entrepreneurial students.

In the literature, researchers have noted the impact of entrepreneurial education on the development of attitudes and intentions of individuals towards entrepreneurship. A study carried out by Kolvereid (1996) investigated the relationship between the employment status choice intentions, such as attitudes, subjective norms and perceived behavioural control, and demographic factors. By applying the TPB across a sample of 128 Norwegian first-year undergraduate

business students, the researcher found that all three determinants, attitudes, subjective norms and perceived behavioural control, significantly contributed in the explanation of intentions, and there was a significant but indirect relationship between employment status choice intentions and demographic factors. Tkachev and Kolvereid (1999) applied employment intentions among students in medical and technical universities in Russia and found that attitude, subjective norms and perceived behavioural control identified the employment choice intentions but the role models and the demographic factors did not explain the intentions. Another studies based on the TPB that tested the effects of entrepreneurship programmes on entrepreneurial intentions and attitudes include a study by Krueger *et al.* (2000) who investigated a model based on TPB and the entrepreneurial event (Shapiro and Sokol (1982). The sample comprised of senior university business students facing career decisions, the researchers found that both attitude and perceived behavioural control had significant effect on the intention. The effect of subjective norms, however, was not significant. Kolvereid and Isaksen (2006) studied the founders of the Norwegian companies and applied a slightly different version of the TPB, using Bandura (1986, 1997), and the self-efficacy construct instead of perceived behaviour control construct. They found that both the attitudes and subjective norms had significant influence on the intention to become self-employed and that intention to become self-employed was strongly related to the actual entry into self-employment (Kolvereid and Isaksen, 2006). However, they found that self-efficacy did not add to the explanation of the variation of self-employment intention or behaviour (Ibid). Researchers such as Souitaris *et al.* (2007) collected data from science and engineering students' academic institutions in the UK and France. By applying regressive statistical techniques before and after the entrepreneurship programme, the researchers examined the effect of EEPs in terms of raising intentions and attitudes relating to entrepreneurship, as well as examining the effect of entrepreneurship courses for students learning, inspiration and resources utilisation (Souitaris *et al.* 2007). Their results revealed that the EEPs enhanced some attitudes, and the overall intention and inspiration (Ibid). Further, their results showed that EEP groups increased their subjective

norms and intentions towards self-employment, whilst the intention towards self-employment was not related to nascency at the end of the EEP (Ibid). However, inspiration (not learning or resource utilisation) was the EEP's benefit relating to the increase of subjective norms and intentions towards self-employment (Ibid). To this stream of research, many researchers contributed to the TPB like Autio *et al.* (2001) who applied the TPB factors influencing entrepreneurial intent in university students from Finland, Sweden, the United States and the UK and found that attitude, subjective norms and perceived behavioural control had significant effects on the intention. In addition, perceived behavioural control emerged as the most important determinant of entrepreneurial intent while the subjective norms variable was the weakest one. The influence of subjective norms was not significant in the case of the UK (Ibid). In the Netherlands, van Gelderen *et al.* (2008) assessed undergraduate business students from four universities in a study of the influence of behavioural, normative and control beliefs on the TPB and intention. Their results showed additional evidence for the usefulness of the TPB in explaining entrepreneurial intentions.

Additionally, Nabi *et al.* (2010) addressed the need for a re-focused research agenda in relation to graduate entrepreneurship by applying the Entrepreneurship Intention (EI) instrument in a survey and collected data from a sample of over 8,000 students in the UK. Their results showed that a substantial minority of students consistently hold relatively strong start-up intentions and a little impact was visible despite considerable efforts to increase the numbers moving to start-up businesses (Ibid.). In Ukraine, Solesvik *et al.* (2012) found positive relationships with entrepreneurial intention through personal attitude, subjective norms, and perceived behavioural control. In addition, a higher level of perceived desirability and feasibility, attitudes towards entrepreneurial behaviour, and perceived behavioural control were reported in the formation of entrepreneurial intentions (Nabi et al., 2010). A year later, Block *et al.* (2013) confirmed the results from 27 countries in Europe and the USA and found positive effect of education on the decision of students to become self-employed. Additionally, they found that the

higher the respondent's level of education, the greater the likelihood that they will start a business (Block et al., 2013).

Aside from the above literature, the researcher reviewed many studies relating to the development of individuals' attitudes and intentions through EEPs and found that EEPs varied widely across countries and educational institutions in terms of the objectives, target audiences, format and pedagogical approaches (Gartner and Vesper, 1994; Matlay, 2009; Rae *et al.*, 2012). In addition, there were numerous studies indicating the importance of entrepreneurship education due to its vital role in producing entrepreneurial individuals for example, Hansemark (1998), Peterman and Kennedy (2003), Edwards and Muir (2005) and Mentoer and Friedrich (2007). However, the knowledge of relationship between education and growth in entrepreneurship in relation to the creation of entrepreneurs amongst university students remains scarce (Charney and Libecap 2003; Peterman and Kennedy 2003). More importantly, there is still a lack of empirical evidence measuring the effect of entrepreneurship education among university students in many developing countries (Brockhaus 1991; Schieb-Bienfait 2004; Mentoer and Friedrich 2007). This is despite the fact that a lot of effort has been directed by governments towards fostering entrepreneurship. The evaluation of EEPs corresponds with both economic and academic challenges. Therefore, on the one hand, EEP stakeholders need to validate and assess the nature and intensity of the social and economic impacts of these programmes (Hytti and Kuopusjarvi, 2004; Pihkala and Miettinen, 2004; Rae, 2009) and on the other hand, there is a lack of research regarding the outcomes of entrepreneurship education (Block and Stumpf, 1992; Garavan and O'Cinneide, 1994; Honig, 2004). In addition, significant methodological concerns have also been raised regarding this issue (Hindle and Cuttling, 2002; Peterman and Kennedy, 2003).

Nevertheless, EEPs, in particular entrepreneurship education and training, have been found to influence both the current behaviour and future intentions of students (Kolvereid and Moen, 1997; Tkachev and Kolvereid, 1999; Fayolle, 2002). Other research works have involved study of the relationship between

EEPs and variables, such as the need for achievement and the locus of control (Hansemark, 1998). Literature shows that entrepreneurship education has a positive impact and enhances these characteristics and the likelihood of action at some point in the future. Moreover, there were significant differences between students who have attended entrepreneurship courses and those who have not (Ibid). Noel (2001) looked specifically at the impact of entrepreneurship education on the development of entrepreneurial intention and the perception of self-efficacy. The research involved different groups of students: entrepreneurship graduates, management graduates and graduates in other disciplines. All the students had attended an entrepreneurship education programme. The results showed the propensity to act as an entrepreneur, entrepreneurial intention, and entrepreneurial 'self-efficacy' all of which reached the highest scores amongst students who graduated in entrepreneurship (Noel, 2001). However, a limited attention appears to have been paid to the importance of specific educational variables, such as programme design or pedagogical approach. Dilts and Fowler (1999) directed efforts towards showing that certain teaching methods (e.g. traineeships and field learning) are more successful in terms of preparing students for an entrepreneurial career.

Over the time, the focus has shifted to the trend to examine the role of entrepreneurship education and the content. Many researchers like Galloway and Brown (2002), Gray and Allan (2002) and Jones-Evans et al. (2000) investigated the overall vision for entrepreneurship education. The literature shows that many researchers have attempted to examine the effect of entrepreneurship education on intentions, perceptions, and attitudes (Hindle and Cutting, 2002; Peterman and Kennedy, 2003; DeTienne and Chandler, 2004; Galloway et al., 2005). For example, Leitch and Harrison (1999) studied a more fine-grained examination of exactly *what* is having an impact of entrepreneurial education on students, *why* and *how*. On the other hand, Galloway et al. (2005) studied the limitations of quantitative studies in examining attitudes toward entrepreneurship and the economic environment. However, Oosterbeek et al., (2010) found no impact of entrepreneurship education program on either entrepreneurial skills or the

intention to become an entrepreneur.

A number of research studies have taken a more rigorous look at entrepreneurship courses and contents and have contributed to the larger body of existing theoretical literature on entrepreneurship (Fiet, 2000; Honig, 2004; Shepherd, 2004). In their studies, Fiet (2000) and Honig (2004) supported a contingency-based approach to business planning. Shepherd (2004) investigated the role of emotions and failure in entrepreneurship education by applying Sarasvathy's (2001) notion of entrepreneurial effectuation and suggested the specific although untested pedagogical approaches for introducing the emotions of failure into the classroom. To this extent, Edelman *et al.* (2008) compared start-up activities of nascent entrepreneurs and found that while there was some overlap in start-up activities practiced by nascent entrepreneurs, there were many differences. In a study, Dew *et al.* (2009) showed that expert and learner entrepreneurs experience contingent events, only experts have learned to *leverage* these. In a recent study, Wright and Stigliani (2013) suggested understanding the process of entrepreneurial growth and need to know the growth of entrepreneur's cognitive process. Very lately, Bae *et al.* (2014) found mixed response on entrepreneurial education and entrepreneurial intention in a meta-analysis of studies involving three factors i.e. attributes of entrepreneurship education, cultural values and students differences that were used as moderators and results showed that the possible attributes of entrepreneurship education and students differences has had no significant impact; however, cultural context was more positively associated with the entrepreneurship.

In conclusion, the majority of the empirical studies have used the TPB to examine entrepreneurial behaviour and intention and found that attitude, subjective norms and perceived behavioural control had significant effects on entrepreneurial intention (for example, Kolvereid, 1996; Tkachev and Kolvereid, 1999; Autio *et al.*, 2001; Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Gird and Bagraim 2008; van Gelderen *et al.*, 2008). In the entrepreneurial literature, the results of the majority of the research are consistent with those of applications of

this theory; however, two of the reviewed studies found only attitude and perceived behaviour control had a significant effect on intention and the effect of subjective norms was non-significant (Krueger et al., 2000; Liñán and Chen, 2009). Liñán and Chen (2009) found that subjective norms had an indirect effect on intention through attitude and perceived behavioural control. It should be noted that of the studies that did find subjective norms to have a significant influence on intention, two studies found that subjective norms had the weakest influence on intention (i.e. Autio *et al.*, 2001 and Gird and Bagraim, 2008). Taken together, these results are similar to those found by Armitage and Conner (2001), who concluded, “subjective norms was the [theory of planned behaviour] component most weakly related to intention” (p. 488). However, Souitaris *et al.* (2007) found that intention to become self-employed was not related to a propensity to being nascent entrepreneurs. As aforementioned, the authors attributed this lack of significance to the time-lag between entrepreneurial intention and behaviour.

The main studies in this literature are reported in Table 3.5. Each of these studies made serious attempts at merging the theory, the practice, and actual observation of what entrepreneurs do and how they behave. They represent a good start at a more rigorous approach to bringing the theory and the practice together into the entrepreneurial classroom and offer potentially valuable inputs into the content of entrepreneurship education. However, as Sardana and Scott-Kemmis (2010, p. 441) stated: “Despite a proliferation of research in the field of entrepreneurship, our understanding of entrepreneurial learning remains limited”.

Table 3-5: Literature Review

Description	Author(s) / Year	Country	Variable(s)	Findings
Prediction of Employment Status Choice Intention	Kolvereid, L. 1996	Norway	Employment attitudes, subjective norms, perceived behavioural control and demographic characteristics	Employment status choice intentions' indirect relationships with demographic characteristics.
Doctoral Education in the Field of Entrepreneurship	Brush, et al., (2003)	USA	Entrepreneurship faculty demand, entrepreneurship education, doctoral seminars	Growing demand for faculty, growing membership, more participants of junior faculty and increased attention to entrepreneurship education at all academic levels.
Assessing the impact of entrepreneurship education programmes - a new methodology	Fayolle et al. (2006)	France	Entrepreneurship education programmes, intentions and perceived behavioural control	EEPs' positive impact on entrepreneurial intention of students but no significant impact on the perceived behavioural control.
Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources utilisation.	Souitaris, et al. (2007)	UK and France	Entrepreneurship programs, intentions and attitudes to effect on learning, inspiration and resources.	EEPs raise intentions and attitudes to self-employment; n, raised some attitudes and the overall intention and inspiration; EEP group increased subjective norms and intention towards self-employment but intention towards self-employment not related to nascence at the end of the EEP; inspiration (not learning or resource utilisation) as a benefit of EEP related to the increase of subjective norms and intention towards self-employment.
The effect of entrepreneurship education programmes on satisfaction with innovation behaviour and performance	Cruz et al., (2009)	Spain	Entrepreneurship education, Personality, Innovation, and Business Performance	Education regarding management and entrepreneurship enhanced more innovation; especially entrepreneurship education made stronger relationship between innovation and success. Additionally entrepreneurship education contributed better results for business.

Entrepreneurship education: revisiting our role and its purpose	Jones (2010)	Australia	Entrepreneurialism and Education, Students	A descriptive paper that argued: entrepreneurship education aware of the limitations of knowledge; education providers need to understand the students' target so that they can better develop learning environments.
Entrepreneurial intentions among students: towards a re-focused research agenda	Nabi et al., (2010)	UK	Entrepreneurship attitudes and intention, and business start-up activities	A substantial minority of students consistently hold relatively strong start up intentions. However, little impact is visible despite considerable efforts to increase the numbers moving to start up.
Innovating entrepreneurial pedagogy: examples from France and Germany	Klapper, and Tegtmeier, (2010)	France and Germany	Innovative teaching and entrepreneurship	Study revealed the importance of interdisciplinary learning in entrepreneurship research; highlighted to create a new approach to learning about entrepreneurship different theories like entrepreneurship, networks, and cognitive science theories brought together in France. However, in Germany, management and other disciplines worked together.
Entrepreneurship education and students' internet entrepreneurship intentions: Evidence from Chinese HEIs.	Millman et al., (2010)	China	Demographic factors i.e. gender, household incomes and student status	Demographic factors such as gender, household incomes and student status positively related to internet entrepreneurship intentions. A significant impact of disciplines, impact of communication technology courses and online shopping experiences on the internet entrepreneurship intentions.
Universities and enterprise education: responding to challenges of the new era	Rae, (2010)	UK	Social and cultural environment, economic era, ethical and environmental concerns	Social and cultural environment is being changed by entrepreneurship in a new era. Ethical and environmental concerns are creating a discourse of responsible entrepreneurship which is to be conceptualised so that there is a shift of old to new entrepreneurship.
Enhancing entrepreneurial marketing education: the student perspective	Peltier and Scovotti (2010)	USA	Entrepreneurial mind-set, desired entrepreneurial marketing learning, experiential activities and demography.	Students desire to be entrepreneurs and feel strongly about entrepreneurial education. Exposure to entrepreneurial marketing tools, experiential learning activities and networking opportunities deemed to be especially important.

The case for (social) entrepreneurship education in Egyptian universities	Kirby and Ibrahim (2011)	Egypt	Theory of Planned Behaviour, social entrepreneurship, and education, universities	By applying the TPB theoretical framework, data collected from the British University in Egypt. Of 183 samples of the 2000 undergraduates' data inferred that the students were confused over what a social entrepreneur is or does. Additionally, respondents were unaware about the existence of social entrepreneurship and large number of them wanted to start career in a multinational enterprise.
The impact of entrepreneurship education in European universities: an intention-based approach analysed in the Spanish area	Lanero, et al., (2011)	Spain	Entrepreneurship education, intention, behaviour, perceived feasibility and desirability	Empirically study that revealed perceived entrepreneurship feasibility can be increased through education, which can turn to develop entrepreneurial intention and behaviour
Graduate entrepreneurship in the developing world: intentions, education and development	Nabi and Linan (2011)	Descriptive study, no country focused	Entrepreneurship, intentions, higher education, and training	Descriptive paper suggested for more research in the field of graduate entrepreneurship in the developing world in order to get knowledge on the issues regarding graduate entrepreneurial intentions, business start-up and education.
Ajzen's Theory of Planned Behaviour and Social Media Use	Cameron et al., (2012)	USA	Entrepreneurship intention, behaviour, and social networking sites	221 participants asked about the use of these sites and projected assistance offered to others with social networking. Results did not support to Ajzen's model. However, intention and behaviour factors were found highly correlated and not separate factors. Further, findings suggested that the TPB does not predict routinised social networking sites use behaviours.
A model of entrepreneurial intention An application of the psychological and behavioural approaches	Ferreira et al., (2012)	Portugal	Entrepreneurship education, intention, psychological and behavioural approaches	Found positive effect on entrepreneurial intention through need for achievement, self-confidence and personal attitudes. Additionally, subjective norms and personal attitudes had positive effect on perceived behavioural control.
Entrepreneurship education How psychological, demographic and behavioural factors predict the entrepreneurial intention	Marques et al., F (2013)	Portugal	Entrepreneurial intention, personal attitude, subjective norm, perceived behavioural control, demography, and entrepreneurship education	Entrepreneurship intention of students of secondary schools affected by demographic, behavioural and psychological factors.

Enterprise and entrepreneurship in English higher education: 2010 and beyond	Rae et al. (2012)	UK	Enterprise skills development, curriculum provision, funding, policy, infrastructure and staffing	Association between enterprise education, incubation / new venture support, graduate employability, innovation and academic enterprise. Support for enterprise education provision in participating HEIs.
Student intentions to become self-employed: the Ukrainian context	Solesvik et al. (2012)	Ukraine	Perceived desirability and feasibility, entrepreneurial intention, personal attitude, subjective norms, and perceived behavioural control	Positive relationships between entrepreneurial intention and personal attitude, subjective norms, perceived behavioural control. Higher level of perceived desirability and feasibility, attitudes towards the behaviour and perceived behavioural control reported the formation of entrepreneurial intentions
Assessing students' entrepreneurial skills development in live projects	Chang and Rieple (2013)	UK	Entrepreneurial skills, education, experiential learning, and entrepreneurship	Students' perceptions have positive and significant changes with the skills over time. At the outset, students confident about their abilities.
Education and entrepreneurial choice: An instrumental variables analysis	Block et al. (2013)	Europe and USA	Education, entrepreneurial choice, instrumental variables, and occupation choice	Data from 27 countries of Europe and USA showed positive effect of education on the decision to become self-employed. The higher the respondent's level of education, the greater the likelihood that they will start a business.
The relationship between entrepreneurship Education and Entrepreneurial intentions: A Meta-Analytic review	Bae et al. (2014)	USA	Entrepreneurship education and intention (a meta-analysis)	Results of meta-analysis from 73 research studies with sample of 37,285 revealed mixed response of entrepreneurial education on entrepreneurial intention. Attributes of entrepreneurship education, cultural values and students differences used as moderators of relationship between entrepreneurship education and entrepreneurial intentions showed no significant moderating impact by attributes of entrepreneurship education and students' differences but the cultural values associated with more positive impact on the relationship between entrepreneurship education and entrepreneurial intentions.
Determinants of Entrepreneurial Intent: A Meta-Analytic Test and Integration of Competing Models	Schlaegel and Koenig (2014)	Germany	TPB factors and entrepreneurial intent (a meta-analysis)	Study aimed to integrate the theory of planned behaviour and the entrepreneurial event model through meta-analytical test. Findings from 98 studies through the sample of 114,007. Support for the competing theories and the moderating role of contextual boundary conditions in the development of entrepreneurial intent.

Source: Developed by researcher for this study

The literature showed that there is lack of theories that generally establish the relationship between education and entrepreneurial behaviour (Henry et al., 2005; Kailer, 2005). However, a theory that shows promise for understanding the impact of entrepreneurship education is the Human Capital theory (Mincer, 1958; Becker, 1964). This theory predicts that individuals or groups who possess greater levels of knowledge, skills, and other competencies will achieve greater performance outcomes than those who possess lower levels (Ployhart and Moliterno, 2011). The Human Capital theory is thus useful to explain aspects of entrepreneurial success and is also well established in the entrepreneurship literature (Pfeffer, 1994) but almost exclusively as a static model where accumulated education and experience are related to various forms of success (Dyke et al., 1992; Chandler and Hanks, 1998; Rauch et al., 2005; van der Sluis et al., 2005; Cassar, 2006). In their recent meta-analysis, Unger et al. (2011) made the case for why human capital theory must be considered in less static terms, at least as it relates to the field of entrepreneurship.

Autio (2011) deduced from the economic theories that high growth aspiration entrepreneurship fits best with the entrepreneurs, which most likely create jobs and attract the interest of policy makers. In addition, Autio (2005, 2007) also provided insights on high growth aspiration entrepreneurial activity through entrepreneurial environment, and individual characteristics.

In the literature of entrepreneurship, the regulatory focussed theory has been used for better understanding of different motives, beliefs, and behaviours of entrepreneurs (McMullen and Shepherd, 2002; Brockner et al., 2004; McMullen and Zahra, 2006; Aziz and Foo, 2008; Tumasjan and Braun, 2011). Higgins (1997, 1998) developed this theory and claimed that the different ways in which individuals make decisions and behave are manifested in the promotion focus and the prevention focus. Promotion-focused individuals desire for growth, career or skill advancement and accomplishment primarily motivates them to align their behaviour with their so-called ideal selves. On the other hand, those with a prevention focus are motivated primarily by security and safety needs to align

their behaviour with, what Higgins calls, their own selves and their perception of what others (i.e., family, friends, and society) want them to be.

Today, entrepreneurship education is growing rapidly across the world because of effective human capital development through the medium of entrepreneurship education. The trend of entrepreneurship education is thus growing rapidly in universities and colleges around the world (Katz, 2003; Kuratko, 2005). To this extent, government policies and strategies are financially supporting to would-be entrepreneurs and small businesses. This trend is recognition of government support that entrepreneurship can play an important role in creating job and economic growth (Shane and Venkataraman, 2000; Kuratko, 2005 Pittaway and Cope, 2007). Unfortunately, there is little consensus about the precise nature type of education that is important for entrepreneurship. Probably therefore the recent research work illustrates a variety of different frameworks and measures (Peterman and Kennedy, 2003; Weaver et al., 2006; Martin et al., 2013). Unfortunately, therefore, there is lack of consistent evidence showing that entrepreneurship education helps to create more or better entrepreneurs.

Large number of studies has investigated the effectiveness of entrepreneurship education in increasing entrepreneurship. A review of these studies has revealed that there are three broad types of relationship between entrepreneurship education and entrepreneurship: i.e. relationship between entrepreneurial education and training (EET) and entrepreneurial knowledge and skills (DeTienne and Chandler, 2004; Fayolle et al., 2009; Hanke et al., 2010), relationship between EET and positive perceptions of entrepreneurship (Peterman and Kennedy, 2003; Zhao et al., 2005; Souitaris et al., 2007; Cooper and Lucas, 2007;) and relationship between EET and intentions to start a business (Athayde, 2009).

Today, governments' policies are increasingly advocating entrepreneurship around the world. This tends to accept openly the functional economic theory of entrepreneurship (Jennings et al., 2005; Pittaway, 2005). In a number of studies, researchers have reported that attention on entrepreneurship is increasing in the government policies at all levels across the world (Hannon, 2006; Minniti and

Lévesque, 2008). In this regard, policy-makers frequently consider the possibility of entrepreneurship education and training as an efficient mechanism for increasing entrepreneurial activity (Martinez et al., 2010). At the heart of supportive policy environment to some extent has contributed in the development and promotion of entrepreneurial courses, awards, and programs that are being offered in a wide variety of forms (see for instance, Jack and Anderson(1999), Solomon et al. (2002), Katz (2003), Atherton (2004), Klapper (2004) and Leffler and Svedberg (2005).

There is also growing body of evidence linking entrepreneurial activity with the process of starting and continuing to expand a new business with the economic competition, reduction of unemployment, job creation, innovation, and economic and social mobility (Thurik, 1999; Reynolds *et al.*, 2000; van Praag and Versloot, 2007; Malchow-Møller *et al.*, 2011). The dominant focus of government is to develop policies seeking to stimulate entrepreneurial activity (OECD, 2007). The government policies focused at the level of macroeconomic policies are providing infrastructure, flexible labour markets, adequate education, research and development. However, microeconomic policies are focusing directly on individual entrepreneurs. Micro entrepreneurial policies are often referred to the advice, education and awareness provided to aspiring and existing business owners to guide preparation.

To this extent the World Economic Forum (WEF) initiated and highlighted the need and importance of entrepreneur education for promoting global awareness and action (WEF, 2009). In this regards the WEF has focused on the following aims (2009; p.9).

1. Highlight and raise awareness of the importance of EE in spurring economic growth and achieving the Millennium Development Goals (MGD).
2. Consolidate existing knowledge and good practices in EE around the world to enable the development of innovative new tools, approaches and methods.

3. Provide recommendations to government, academia, the private sector and other actors on the development and delivery of effective education programmes for entrepreneurship.

4. Launch a process in which the recommendations can be discussed on the global, regional, national and local levels and implemented with the involvement of key stakeholders.

Therefore, developing and delivering effective pedagogic methodologies is the key to the global initiative emanating from the WEF. The most important challenge associated with entrepreneurship education is the degree to which the old cliché associated with teaching is perhaps now at the front and centre of the debate. Consequently, at present, the policy makers, practitioners and educators have particular interest on the entrepreneurship education and training for developing individual attitudes and ambitions. In this domain, it is believed that individuals who have knowledge and skills to start a business are more perceived.

In addition, the main objective of GEM is to know the ground realities about the entrepreneurship education and training toward the development of individuals' attitudes and intentions. It is the prime objective of GEM which is related with the individual activity and aspiration which may lead to economic development. To this extent, the GEM model has been developed by three sets such as requirement, efficiency and entrepreneurship and innovation.

3.12 Research Gap

In the above reported literature, the impact of entrepreneurial activity on economic growth, creating career opportunities and developing employability has been well documented. The literature review revealed that an entrepreneur is the organiser of factors of production (Carton *et al.*, 1998), the developer of spot opportunities and an innovator (Dana, 2001), an organiser of resources and risk-

taker (Deakins and Freel, 2012), a creative, imaginative and identifier and the one who acts on opportunities that involve entrepreneurial activities (Rae, et al, 2012). Researchers identifying characteristics are largely focused on encouraging potential entrepreneurs to start their own businesses to participate in economic and social activities. Indeed, entrepreneurs are made, not born, and researchers have revealed that problem-solving and leadership can be learnt and taught through education and training programmes (Gorman *et al.*, 1997; Young, 1997; Henderson and Robertson, 2000). A strong belief in entrepreneurship has emerged that it can be developed through systematic development and planned efforts (Vesper, 1994 and Gorman *et al.*, 1997). Thus, education for entrepreneurship places importance on students' development and increases and fosters their mind set and skills to embrace entrepreneurship (Formica, 2002; Hannon, 2005; Li, 2006). The literature supported the contention that appropriate entrepreneur education and training programmes are expected to increase the attitudes and intentions of people becoming entrepreneurs (Gorman *et al.*, 1997; Alsos and Kolvereid, 1998; Reynolds *et al.*, 1999; Henry *et al.*, 2003; Souitaris *et al.*, 2007; Nabi and Linan, 2011; Marques *et al.*, 2012).

Most prior empirical studies have focused on intentions but have neglected the study of actual behaviour. To the researcher's knowledge, a few studies included entrepreneurial behaviour in their design (Kolvereid and Isaksen, 2006; Souitaris *et al.*, 2007). The researcher argues that intentions may be predicted by attitudes and that intentions predict behaviours; thus, the researcher developed a conceptual approach that linked students' attitudes, intentions and behaviour through the evidence of EEPs. In this research study, this approach was examined through the role of HEIs offering EEPs as an integral part of the enterprise system in Saudi Arabia.

In addition, most studies that have thus far investigated the effectiveness of EEPs have not used a Pre-test and Post-test research design, and they have also not included a control group. This means they suffer from methodological limitations. This brings to the focus of this research study i.e. overcoming the methodological

limitations of earlier entrepreneurship research and looking at the relationship between EEPs, the intentions of students and their subsequent entrepreneurial behaviour. The researcher used a quasi-experimental design that consisted of two participant groups: the EEPs Group and the Control Group. The EEPs Group consisted of participants / students who were engaged in entrepreneurship courses at degree level and the Control Group consisted of students who were not taking any entrepreneurship courses during their studies. Both groups participated in a Pre-test when starting their courses and a Post-test when finishing their courses.

The researcher was motivated to conduct this study because previous research has not successfully established whether or not EEPs affect intentions and subsequent start-up activities. The results of this research study indicated that intention to become self-employed was positively and significantly related to attitude towards self-employment, subjective norms and perceived behavioural control for both groups at both time intervals. However, no significant relationship between intention to become self-employed, nascency and start-up activities was found following the EEPs.

The literature has shown that entrepreneurship education promotes self-employment, the formation of new business, and also develops interest in starting up a business (Sergeant and Crawford, 2001; Keogh, 2004). However, researchers such as Kolvereid (1996), Alsos and Kolvereid (1998), Souitaris *et al.* (2007) and Nabi and Linan (2011) advocated that the links between entrepreneurial education and entrepreneurial activity are not ideal and more research into this linkage is required, especially in the developing world. However, it is also well-known that the development of entrepreneurial activities and behaviour, through the facilitation of education institutions, is less well understood. As an engine of economic growth, there is intense interest from policy makers and academics towards entrepreneurship and entrepreneurship education. Based on the assumption that such linkages must exist, there has been a dramatic increase in entrepreneurship education (Solomon, 2002; Solomon *et al.*, 2002; Matlay, 2009; Rae *et al.*, 2012), with more research in the field of

graduate entrepreneurship in the developing world warranted (Nabi and Linan, 2011). As a result of this conception, this study takes a step forward and explores the role of HEIs in entrepreneurship education programmes in the context of Saudi Arabia.

This study centred on the Saudi Arabian culture, investigates the effect of entrepreneurship education for entrepreneurship programmes on entrepreneurial attitudes and intentions. The researcher has attempted to investigate the role of HEIs in EEPs and development as an integral part of an enterprise system in Saudi Arabia. With regard to this purpose, the researcher has addressed the following questions:

1. Do entrepreneurship education programmes raise entrepreneurial attitudes and intentions of students of HEIs of Saudi Arabia?
2. Which programme derived benefits raise entrepreneurial attitudes and intentions of students in HEIs of Saudi Arabia?
3. What is the degree of acceptability of the proposed conceptual framework developed by the researcher to support and assist the efficient performance of Saudi entrepreneurship?

In this connection, the researcher has examined the effect of three proposed programme-derived benefits for students i.e. the learning from modules, inspiration and university resources and incubation.

3.13 Summary

Today, organisations face competition, pressure of unemployment, utilisation of resources, developing ability, skills and knowledge to cope with unforeseen situations. In order to counter the unforeseen situation, the researchers of human resources development focused on equipping individuals with the abilities, skills and knowledge necessary to start up economic activities where they can utilise their skills, knowledge and resources. In this connection, the literature adds that entrepreneurs are the main actors who ensure the smooth entrepreneurial process where they search for a business opportunity, take calculated risks, launch a new venture, begin the process of carrying out new combinations of enterprise, recognise opportunities, search for change, marshal resources, achieve profit and growth by identifying opportunities, and assemble the necessary resources to capitalise on them (Ibrahim and Ellis, 1993; Anderson, 2002; Scarborough and Zimmerer 2003; Drucker, 2004; Kuratko and Hodgetts, 2007, Rae *et al.*, 2012; Hameling and Sarasvathy, 2013; Bae *et al.*, 2014; Schlaegel and Koenig, 2014). Thus, entrepreneurship is recognised as being a major engine driving economic and social growth, innovation and competitiveness. The literature has revealed that individuals develop attitudes and intentions for becoming entrepreneurs through education and training programmes (Gorman *et al.*, 1997; Young, 1997; Henderson and Robertson, 2000). In this vein, education for entrepreneurship has placed importance on development, and increases and fosters the mind set and skills of an individual to embrace entrepreneurship (Formica, 2002; Hannon, 2005; Li, 2006; Rae, 2008; Rae *et al.*, 2010). According to Reynolds *et al.* (1999, p. 26), appropriate education and training programmes in entrepreneurship are thus expected to increase the number of people becoming entrepreneurs because the better educated the population, the higher the level of entrepreneurial activity. The literature has revealed that many entrepreneurship programmes and courses have been developed, documented, legitimated and started so as to motivate students to start entrepreneurial activities (Franke and Luthje, 2004;

Raichaudhuri, 2005). The literature has also shows that entrepreneurship is an academic discipline, which can be taught and learned (Drucker, 1985; Kuratko, 2005). Furthermore, it has been empirically observed that entrepreneurship education and training can influence individuals' attitudes and intentions towards entrepreneurship (Gorman *et al.*, 1997; Henry *et al.*, 2003; Souitaris *et al.*, 2007; Nabi *et al.*, 2010; Lanero *et al.*, 2011; Marques *et al.*, 2012; Bae *et al.*, 2014).

In the literature, links between entrepreneurial education and entrepreneurial activities have been suggested (Kolvereid, 1996; Holmgren and From, 2005; Volery and Mueller, 2006; Souitaris *et al.*, 2007; Nabi *et al.*, 2010; Lanero *et al.*, 2011; Marques *et al.*, 2012; Block *et al.*, 2013). However, entrepreneurial activities and behaviour through the facilitation of education institutions are less understood, and there is growing interest from policy makers and academics in enterprise / entrepreneurship and entrepreneurship education (Matlay, 2009; Rae *et al.*, 2012). More specifically, research in the field of graduate entrepreneurship in the developing world is warranted (Nabi and Linan, 2011).

This research study is a step forward in understanding the linkages between entrepreneurship education and entrepreneurship. This study has investigated the role of HEIs in entrepreneurship education and development about entrepreneurship in the Saudi Arabian context. This study is aimed at investigation of the role of HEIs in entrepreneurship education programmes in order to establish the impact of entrepreneurship education on individuals' intention and attitudes towards entrepreneurship.

The research framework used in this research study is described in the next chapter.

Chapter 4: Conceptual Framework

4.1 Introduction

Entrepreneurial choice is one of the most crucial and important topics and it has been widely researched. Researchers and field experts are particularly interested in the effect of entrepreneurial education since it can develop the behaviour and mind set of individuals. Keeping this view in mind, through this study the researcher aimed to examine the influence of entrepreneurship education programmes on the development of entrepreneurial attitudes and intentions. In the literature, researchers have attempted to establish the behaviours of individuals so as to identify and create opportunities, leading to the emergence of an organisation, a new venture team, wealth creation and organisational transformation (Brush *et al.*, 2003). In this regard, entrepreneurship education can underpin the development of the skills, mind set and capabilities of individuals for creating the entrepreneurs of the future. In the literature, a belief is exhibited that entrepreneurship can be taught (Gorman *et al.*, 1997; Fiet, 2000; Gibb, 2002; Henry *et al.*, 2005; European Commission, 2012); however, how and what should be taught is a matter of debate.

The conceptual framework of the present study was based on the extensive literature review. Entrepreneurship education places importance on the development and increasing the mind set and skills of an individual to embrace entrepreneurship. In order to assess the extent of entrepreneurship courses at the higher educational level, there is a need to develop a common framework to evaluate, compare and improve the programme. In this research study, the researcher addressed the issue: what is the impact of EEPs in terms of increasing entrepreneurial behaviour and becoming self-employed. In addition, this study

examined that which programmes increase students' abilities in terms of increasing entrepreneurial attitudes and intentions. The context of this study included students of public and private HEIs in Saudi Arabia.

In this chapter, the researcher considers entrepreneurship and its impacts on individuals, the link between entrepreneurship and HEIs, the development of a conceptual approach from a theoretical perspective, the development of hypotheses, and finally the drawing of a summary. However, the research objective is to present such a framework which is based on the Theory of Planned Behaviour.

4.2 Entrepreneurship and its Impact on Individuals

The concept of entrepreneurship reveals a dynamic process of vision, change and passion towards the creation and implementation of new ideas and creative solutions. It is widely accepted as the driving force for economic growth, job creation and innovation (Park, 2004; Audretsch *et al.*, 2006; Rae, 2009; Rae, 2008; Rae *et al.*, 2010). The relative recognition of entrepreneurship towards the creation of self-employment is among the top priorities of all societies in developed and developing nations. Thus, it is important to establish the concept of entrepreneurship and its usage. A fundamental concept of entrepreneurship is related to the creation of new ventures, organisations and new combinations of goods and services for generating wealth and utilising available natural resources. The creation process is associated with identifying and exploring opportunities that can develop attitudes and values which lead independent ventures. Gartner (1990) pointed out eight recurring themes of entrepreneurship: organisation creation, the entrepreneur, creating value, innovation, profit or non-profit, growth, uniqueness, and the owner-manager. Reynolds *et al.* (1999, p. 3) defined entrepreneurship as 'any attempt at new business or new venture creation, such as

self-employment, a new business organisation, or the expansion of any existing business, by an individual, a team of individuals or an established business'. From this conceptualisation, entrepreneurship leads to characteristics such as opportunity identification, risk-taking and newness, all of which are very close to the field of strategy that might be found in individuals or teams.

Entrepreneurship is a driver of a market culture and economists have underlined this crucial force acting in the market development. The entrepreneurship concept has been used as a criterion variable, and focused on organisation creation and innovation. This field is close to the strategy field, which can occur at multi-levels of the analysis of individuals and teams. According to Wickham (2004), entrepreneurship is a viable career option that meets individuals' economic, social and development needs. However, in the economic and social set-up, individuals have two options to choose between either to be self-employed or become a paid employee.

For entrepreneurial activities, the main actors are entrepreneurs. According to Ibrahim and Ellis (1993, p. 15), an entrepreneur is 'an individual who sees an opportunity that others do not, and marshals the resources to exploit it'. The dominant factor of entrepreneurs is a young person whose confidence is increasing and who sees himself or herself as a 'potential' entrepreneur. This field of entrepreneurship has been recognised as encouraging and enhancing entrepreneurs who carried out new ventures. Many researchers directed their attention to the importance of entrepreneurial potential, and suggested how potential entrepreneurs can be developed (Krueger and Brazeal, 1994). Thus, developing perceptions surrounding entrepreneurship are extremely important and set the groundwork for being an entrepreneur long before an individual actually makes the decision to become one. Individuals who wish to foster entrepreneurship need skills and knowledge that can support and reinforce the perceptions desirable of mind. Thus, the supply of entrepreneurs can be strongly affected by providing an education that encourages positive and self-enabling perceptions of potential entrepreneurs. Many now believe in the extensive

importance of entrepreneurship education, and there are now a number of public and private initiatives to train and educate people to be more entrepreneurial. Such education programmes aim to increase the interests of students relating to their entrepreneurial career (Brenner *et al.*, 1991; Hart and Harrison, 1992; Fleming, 1994; Kolvereid, 1996a) and increasing awareness regarding the significance of entrepreneurship as a contributor to economic development (Hytti and Kuopusjarvi, 2004; Rae, 2009).

4.3 The Link between Entrepreneurship and HEIs

The field of entrepreneurship is characterised by the creation of new ventures and organisations to promote self-employment. The essential ingredients of entrepreneurship consist of the willingness to take calculated risks, the ability to assemble an effective venture team, the creative skill to line up needed resources, and the vision to recognise opportunity where others see chaos (Kuratko and Hodgetts, 2004). The idea of how individuals make decisions and which factors influence them in the decision to start a new business is essential (McClelland, 1961; Brockhaus, 1982; Blackburn and Ram, 2006; Welter *et al.*, 2008). In this regard, many models relating to individual behaviour, intentions and situational aspects have been developed and tested (Garnter, 1985; Bird, 1988; Boyd and Vozikis, 1994). Most commonly, factors that may influence individuals to become entrepreneurs comprise of various combinations of personal attributes, traits, background factors, experience and disposition (Shane *et al.*, 2003; Baron, 2004; Arenius and Minniti, 2005). However, in the literature, entrepreneurship oriented intentions and attitudes are recognised as precursors of entrepreneurial action (Krueger and Brazel, 1994; Kolvereid, 1996).

Developing entrepreneurial attitudes, abilities, skills and intentions to start up a new business is a dominant issue in the field of entrepreneurship. To this extent, Harris and Gibbson (2008) revealed attitudes that can be changed and measured to

underpin entrepreneurial intentions. This view supported the possible change in attitudes through education programmes and literature (e.g. Vesper, 1994; Gorman *et al.*, 1997; Wilson *et al.*, 2007; Peltier and Scovotti, 2010; Piperoplulos *et al.*, 2012).

For the last two decades, significant volumes of research have been dedicated to focusing on the development of attitudes and intentions through various forms of education and training programmes (e.g. Gorman *et al.*, 1997; Henderson and Robertson, 2000; Kuratko, 2005; Pittaway and Cope, 2007; Nabi *et al.*, 2010). Thus, education is critical and important in the fostering of the relevant mind-set and skills of individuals, and (mature) entrepreneurs for embracing entrepreneurship (Formica, 2002; Hannon, 2005; Li, 2006; Sowmya *et al.* 2010; Ferreira *et al.*, 2012). Moreover, education is an obvious way to facilitate individual opportunity and social growth that can serve as a foundation in relation to starting up a new venture. Entrepreneurs bring about new ideas for innovation and creativity through targeted education (Volkman, 2004, Volkman *et al.*, 2009) owing to the transfer, acquisition and development of knowledge and relevant skills, all of which can enhance the self-efficacy and effectiveness of the potential entrepreneur (Bandura, 1986).

The main role of entrepreneurial education is to develop perceived feasibility and improve the perceived desirability for entrepreneurship, which is highly regarded and socially accepted by the community (Fayolle *et al.*, 2006). To this extent, entrepreneurial education motivates to individuals to think about entrepreneurship as a career choice that could influence their career decision. At the heart of career orientation, entrepreneurial education may also develop the skills, knowledge and attitudes in young individuals, which makes them more employable in labour markets and makes them more productive citizens, irrespective of what career or occupation is chosen (Wilson, 2009). Therefore, education in entrepreneurship may be of greater value because it focuses on a career option that might not otherwise have been thought of or realistically considered, and an option that does not necessarily depend on prior education. In response to a wide array of job and

community opportunities, higher education in the entrepreneurial arena has a wide scope to reduce the gap amongst youngsters between public employment and self-employment (Rae *et al.*, 2012). The dominant focus of entrepreneurship education is at college and university levels because it is conducted in a supportive environment where students can explore the idea of becoming an entrepreneur (Kourilsky, 1995; Souitaris *et al.*, 2007). Importantly, HEIs provide a supportive environment and curricula for a solid foundation in learning, and they reinforce the self-esteem of their young participants (Kourilsky and Walstad, 1998). According to Krueger and Brazeal's (1994) model of entrepreneurial potential, entrepreneurship education should improve the perceived feasibility for entrepreneurship by increasing the knowledge of students, building confidence and promoting self-efficacy. In this context, a large amount of literature is available, which has witnessed higher educational support for developing entrepreneurial attitudes and intentions (Peterman and Kennedy, 2003; Fayolle and Degeorge, 2006; Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Rae, 2010). For example, Souitaris *et al.* (2007) tested the effects of EEPs on entrepreneurial intentions and attitudes and their results revealed that the EEPs improved attitudes as well as overall intention and inspiration.

4.4 Conceptual Approach

Entrepreneurship is a major source of creating job opportunities, innovative thinking, economic growth, and competitiveness. It has been found to be a dynamic resource for national development, and has received growing recognition in terms of fostering an entrepreneurial culture and encouraging the right mind set, entrepreneurial skills and awareness of career opportunities. Developing entrepreneurial behaviours and attitudes is a significant issue, although education has been assumed feasible for developing a particular mind set. A strong belief supports that entrepreneurship can be developed through targeted education and planned efforts in turn to transfer knowledge, acquisition and development of

relevant skills (Rae *et al.*, 2012). There is therefore the need of particular education through a creative environment, which can support students' learning to become entrepreneurs (Fuchs *et al.*, 2008).

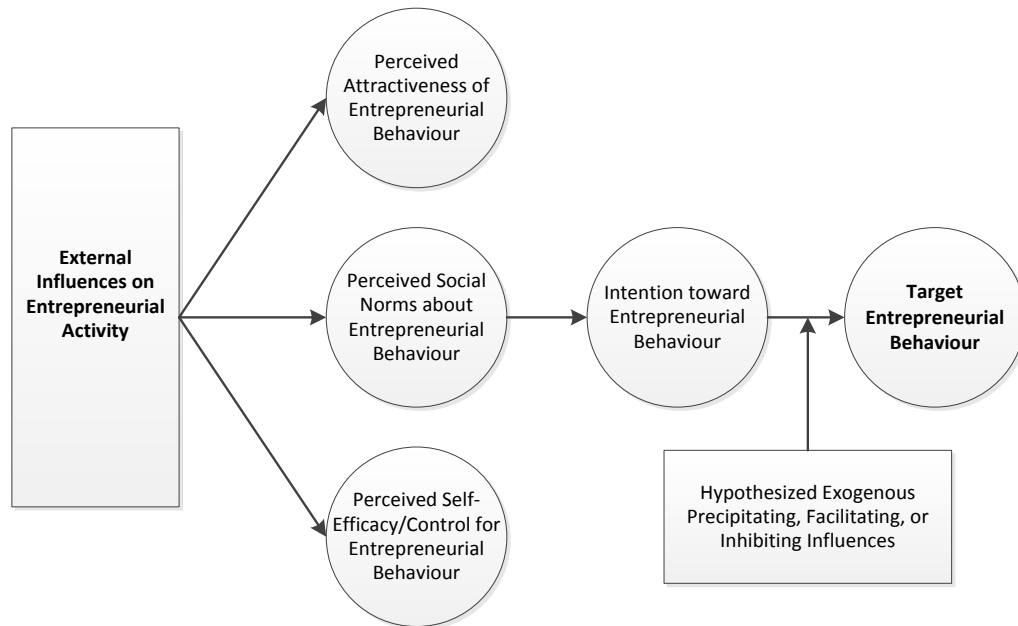
Reflecting the importance of behaviour in the entrepreneurial domain, it was confirmed that entrepreneurial intentions and attitudes lead potential entrepreneurs towards entrepreneurial activity. Entrepreneurial attitudes lead to an entrepreneurs' stance which shows entrepreneurial behaviour. Addressing the attitudinal approach of entrepreneurs for developing positive behaviour has significant impacts because attitudes reflect the desirability and feasibility of potential entrepreneurs to discover the vision of becoming an entrepreneur as a future career choice. The researchers have supported that attitudes towards entrepreneurship are determinant factors in terms of deciding whether or not to be an entrepreneur (Guerrero and Rialp, 2008). In addition, it is believed that attitudes predict intention and intention predicts behaviour. Thus, intention is the best predictor of planned behaviour, particularly when that behaviour is rare and difficult to observe. In the literature, Bird (1989, p. 8) defined entrepreneurial intention as 'a conscious state of mind that directs attention (and therefore experience and action) toward a specific objective (goal) or pathway to achieve it (means)'. Another researcher, Ajzen (1991, p.181), defined intention in this way: 'intention is assumed to capture the motivational factors that influence behaviour; they are indication of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour'. From the above definitions, intentions can be considered as indicators of the will or effort to try something or to behave in a particular manner. In the words of Fayolle *et al.* (2006), it is a cognitive representation of an individual's willingness to show certain behaviour.

Success and effective development of potential entrepreneurs, educational programmes have a significant impact on entrepreneurial behaviour and attitudes. This has been supported through the research conducted in the USA, UK, France, and other countries, with the issue raised that EEPs can enhance entrepreneurial

intentions and attitudes in terms of learning, inspiration and resources utilisation (Zhao *et al.*, 2005; Souitaris *et al.*, 2007). An integrated review of the literature supported the view that education surrounding entrepreneurship places importance on individual development so as to foster appropriate mind sets and to increase relevant skills (Formica, 2002; Hannon, 2005; Li, 2006). However, knowledge and skills development require strong content within the EEPs because, educational programmes support potential entrepreneurs to acquire a diverse set of abilities that facilitate them to identify, evaluate, and exploit opportunities (Rae *et al.*, 2012). Thus, entrepreneurship education has become commonplace in HEIs around the world. Globally, governments have also been increasingly supporting entrepreneurship education (Matlay, 2009; Rae *et al.*, 2012). Throughout the education, individuals should facilitate a supportive pathway towards business start-ups and the specific skills required to do so in the near future. To this extent, the literature suggested the university platform where entrepreneurship education is taking place (Cone, 2007).

Since the early 1980s, researchers have been interested in establishing the impact of entrepreneurship education on the development of perceptions surrounding the desirability and feasibility of entrepreneurial behaviour (Shapero and Sokol, 1982). To this extent, the literature supports the model of Krueger and Carsrud (1993) about its capacity to identify the antecedents of intention through the TPB. This model (Figure 4.1) has been developed by the composite of Ajzen's (1991) model and the theoretical frameworks of Shapero and Sokol (1982). In continuation of this model, researchers have derived different models in order to establish the development of entrepreneurial intention amongst students. For example, researchers like Autio *et al.* (1997) have designed the intention model based on variables such as university environment, career preferences, values, the image of entrepreneurship, individuals' situations and professional backgrounds in an attempt to explain the entrepreneurial intention of students from four different countries.

Figure 4-1 Intentions toward Entrepreneurial Behaviour using TPB



Source: Krueger and Carsrud (1993, P.323)

A large and compelling literature is available for entrepreneurial attitudes and intentions for example Douglas and Shepherd (2000) made a distinction between entrepreneurial attitudes and entrepreneurial abilities through linking an individual's income potential to these abilities and attitudes. They investigated individuals' attitudes to specific work conditions, namely effort required, risk exposure, and decision-making autonomy and the theory developed by these researchers explained that an individual's choice to be self-employed or an employee of an existing organisation is achieved through using a utility-maximisation model of human behaviour. In a study, Souitaris *et al.* (2007) tested the effects of EEPs on entrepreneurial intentions and attitudes and reported that EEPs raised various attitudes, and also induced the overall intention and inspiration. A study carried out by Nabi *et al.* (2010) addressed the need for a re-focused research agenda in relation to graduate entrepreneurship by applying 'entrepreneurship intention' notions and emphasised that a substantial minority of students consistently hold relatively strong start-up intentions while little impact was visible despite considerable efforts to increase the numbers moving to start up. In this literature, researchers found the potential relevant factors applicable

in establishing entrepreneurship intention through the TPB, and further investigated how entrepreneurship education programmes' have an effect on developing potential entrepreneurial intention (Ibid).

From the above discussion, the researcher of the present study concluded that the EEPs can have a positive impact on the development of individuals' behaviours and attitudes; however, there is a need to develop a conceptual framework and to accordingly investigate, evaluate and compare programmes in terms of objectives, target audiences, format and pedagogical approaches for designing potential EEPs in different economies. The focus of the framework should consider a set of clearly identified criteria and a methodology to measure them effectively (Fayolle, 2006). In line with the literature, and also the recent interest from researchers regarding the link between entrepreneurship and education, the researcher focused on investigating the impact of EEPs on the development of intentions towards self-employment with the idea that individual intentions are effective in predicting planned behaviour. With the support of the TPB theory, behavioural intention was predicted by attitudes, i.e. attitudes towards the behaviour, subjective norms and perceived behavioural control. Indeed, intention predicts that behaviour and attitudes predict intentions. In this regard, the researcher argued that attitudes and beliefs predict intentions, and that intentions predict behaviours; thus, the researcher attempted to link the development of these attributes to entrepreneurship education in an attempt to confirm whether entrepreneurship education increases students' intention of self-employment. The conceptual approach and the theoretical model (Figure 4.3) presented in this research study could provide a link to identify the evidence of EEPs in terms of developing students' attitudes and intentions. This conceptualisation was in line with the support by Krueger and Carsrud (1993), Kolvereid (1996b), Luthje and Franke (2003), Fayolle *et al.* (2006) and Souitaris *et al.* (2007). The model was used to assess the impact of EEPs.

In this conceptual approach, the researcher focused on assessing the impacts of EEPs in terms of developing participants' attitudes and intentions regarding

entrepreneurial behaviour through the TPB. Through this model, independent variables utilise the types of benefits of education programme to students, such as learning from a module, learning from inspiration and university incubation resources. However, dependent variables relating to the antecedents of entrepreneurship behaviour used, included attitude towards behaviour, subjective norms, perceived behaviour control and entrepreneurial intention. This integrative conceptual framework was developed based on the TPB theory in an attempt to examine students' subsequent behaviours and intentions. This theory suggested that attitudes and beliefs predict intentions, and intentions predict behaviours (Ajzen, 1991). Thus, the link between individuals' attitudes (toward self-employment, subjective norms and perceived behavioural control) and intention to become self-employed through targeted education has been empirically tested. In this connection, the researcher argued that education in entrepreneurship affects the attitudes and intentions of individuals, which subsequently may change career choice and compel an individual to start his or her own business.

The scope of this study further developed previous works, such as prior research from an economics perspective into why people become self-employed, which typically have relied on theoretical arguments. In this regard, however, the TPB was used to investigate the role of the EEPs for a developing country, particularly an Arab culture in Saudi Arabia. In this vein, researchers such as Luthje and Franke (2003), Fayolle and Gailly (2005), Fayolle *et al.* (2006), Souitaris *et al.* (2007), Rodrigues *et al.* (2010), Goduscheit (2011) and Johansen *et al.* (2012) have empirically assessed EEPs in order to find out ways to enhance the behaviours and intentions of individuals. In order to gain further insights, this study extended the scope of previous studies to investigate the role of entrepreneurship education and the consequences of such education on students' entrepreneurial behaviour and intentions. This extension is in line with the recommendations of both Lena and Wong (2006) and Souitaris *et al.* (2007), who suggested that future research should focus on the influence of education towards entrepreneurial intentions and attitudes.

4.5 Theoretical Framework

The concept of entrepreneurship is vital in terms of its contribution to employment generation, economic regeneration, and regional economic development. This concept has been growing recently to foster an entrepreneurial culture and develop the right mind set, entrepreneurial skills and attitudes and behaviours to prepare young people for entrepreneurship and to pursue career opportunities (Wilson, 2009 and Seikkula-Leino *et al.*, 2010). A wide range of research has witnessed that entrepreneurship and its education are related to the development of graduate careers and employability (Nabi *et al.*, 2006; Pittaway and Cope, 2007; Millman *et al.*, 2008). Wilson (2012) highlighted the role of HEIs in developing enterprise skills and promoting entrepreneurship in the wider context of graduate employability. However, the important factor is the context of developing graduate careers and employability because of the fact that education is already in crisis in relation to graduate unemployment and underemployment (Tapscott, 1998).

The graduate career and future employability need to be reconceptualised as being fundamentally about enabling graduates to be flexible and entrepreneurial in launching and developing their careers rather than seeking jobs; the alternative may be high levels of graduate underemployment and unemployment, with costly economic and social consequences (Rae *et al.*, 2012). In this context, education is facing many challenges and opportunities owing to continuous social and economic change, and the globalisation of the labour market, which promotes new management and skills requirements. Due to these forces, many graduates and job-seekers are interested in adopting innovative approaches in their search to locate suitable jobs or graduate type career paths.

The idea for the starting up of a business is intentional and is best predicted by attitudes that are supported by attitudes towards self-employment, subjective norms and perceived behavioural control. An individual's perception relating to the intention to become an entrepreneur can be shaped by the provision of

resources and entrepreneurship education to create or identify a business opportunity.

The idea behind the development of entrepreneurial activities and behaviours, including the intention to become self-employed, can be facilitated through entrepreneurial education. Accordingly, education allows the building up of skills and creativity, the pursuit of dreams, and obtaining independence and awareness. In an attempt to assess the extent of attitudes where beliefs predict intentions, and where intentions predict behaviours, the researcher has attempted to link the development of these attributes with entrepreneurship education. The literature has suggested that venture creation intention models are better in terms of describing traditional entrepreneurship processes, entrepreneurial attitudes, as well as personal antecedents (Boyd and Vozikis, 1994; Davidsson, 1995; van Gelderen *et al.*, 2008). In this vein, the TPB and Entrepreneurial Events Model support entrepreneurial intentions, which can be translated into action by individuals progressing to the venture-creation stage and actually starting a new business (Nabi and Holden, 2008).

The dominant focus of HEIs significantly improves students' entrepreneurial perceptions and attitudes through entrepreneurship education. Kolvereid and Moen (1997, p. 155) argued that entrepreneurship education can develop skills for business start-ups and ownership, and that it should 'represent a positive influence in terms of general attitudes to entrepreneurship'. It is therefore important to learn about the influence of entrepreneurship education on students' attitudes for new venture-creation and self-employment. This research study thus was focused on confirming whether or not entrepreneurship education increases students' intention to become self-employed, particularly for developing economies. From this theoretical perspective, the researcher can assess the role of entrepreneurial education in students' subsequent entrepreneurial behaviour and intentions by applying the TPB in the context of Saudi Arabia.

4.5.1 Theory of Planned Behaviour

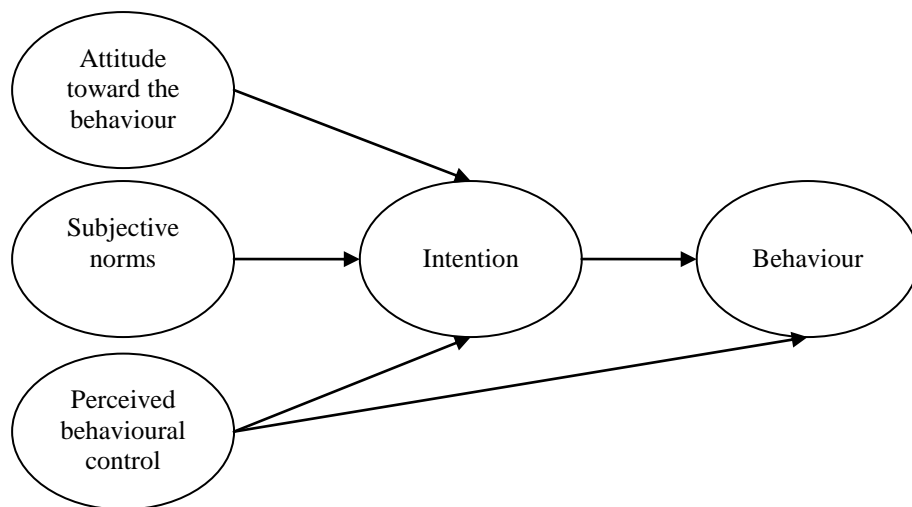
In general, humans behave in a rational manner on the basis of information and act in a way that includes an understanding of the possible consequences of their actions (Browning *et al.*, 2000). Consistent with this assumption, the TPB assumes that human behaviour is a function of the intention to perform such behaviour and this idea has been developed through the Theory of Reasoned Action (TRA) given by Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980). TRA postulates that an individual's behaviour is determined by the individual's behavioural intention to perform that behaviour. Behavioural intention can be developed through the individual's attitude toward the behaviour and subjective norms (Fishbein and Ajzen, 1975; Ajzen and Fishbein 1980).

During recent years, The TPB has become one of the most widely used psychological theories to predict human behaviour. It has been applied to a variety of behaviours for example leisure choice, family planning behaviours and customer behaviour (Ajzen and Fishbein 1980; Driver, 1992). It links personal attitudes and behaviour with individual intentions so that, by extension, it could relate entrepreneurial behaviour to business start-up activities (Fishbein and Ajzen, 1975; Ajzen and Fishbein 1980). The dominant focus of TPB is on attitude towards self-employment, the degree to which a person has a favourable or unfavourable evaluation of self-employment, subjective norms as a social pressure to perform a behaviour or not and perceived behavioural control as the perceived ability, ease or difficulty of performing the entrepreneurial activity (Figure 4.2). The efficacy of the theory is a predictor of human behaviour and cognitive decision-making, which may underline behaviours with respect to starting a business. Individual intentions are effective in predicting planned behaviour; with the support of TPB theory, behavioural intention is predicted by attitudes.

The main difference between the TRA and the TPB is that the previous theory has been utilised in the situation in which a person may have the intention to engage in behaviour, but has no access to resources or opportunities. This situation can

lead to an individual's perceived behavioural control, which refers to the sense of self-efficacy or ability to perform the behaviour of interest. The idea is that a person should be successful if he or she has the required opportunities and resources (for example, money, time and skills), and intends to perform the behaviour. From the behavioural perspective, people intend to perform a behaviour based on experience, social pressure, when they evaluate it positively, and when they believe that they have the means and opportunities to do so (Ajzen, 1988; 1991). Owing to this idea, the researcher extended the TRA theory to Theory of Planned Behaviour (TPB).

Figure 4-2 The Theory of Planned Behaviour



Source: Ajzen (1991)

Essentially, therefore, the TPB is one of the most influential theories of human behaviour, and it is particularly relevant in terms of understanding some types of human behaviour (Rivis and Sheeran, 2003; Schwenk and Mosser, 2009). This is witnessed by researchers regarding new business creation, which is planned through intentional behaviour, where intention appears to be a better direct predictor of behaviour than attitudes and beliefs (Krueger and Carsrud, 1993;

Tkachev and Kolvereid, 1999; Krueger *et al.*, 2000; Autio *et al.*, 2001; Gird and Bagraim, 2008). In their application of the theory, van Gelderen *et al.* (2008) found the usefulness of the theory in explaining intention along with two more beliefs, such as entrepreneurial alertness and financial security. It is worth mentioning that the TPB theory has provided validated research material and conducted empirical tests in order to explain behaviour and intentions within business contexts (Fishbein and Ajzen, 1980; Krueger and Carsrud's, 1993; Kolvereid, 1996b; Luthje and Franke, 2003; Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Stone *et al.*, 2010; Martin *et al.*, 2010; Delafrooz *et al.*, 2011; Cameron *et al.*, 2012).

Based on the conceptualisation of this study, the researcher proposed to apply the TPB in terms of evolution of students' attitudes and intentions. The main focus is to examine the role of HEIs to improve students' entrepreneurial perceptions and attitudes through entrepreneurship education. Following this theory, a conceptual framework has been proposed to focus on the impact of EEPs for the development of attitudes and intentions rather than the microeconomic impact of EEPs (number of businesses and jobs created) to avoid assuming that students attending EEPs are only those who are interested in launching a business (Fayolle *et al.*, 2006, Radu and Redien-Collot, 2008, Ferreira *et al.*, 2012).

The literature also supports the contention that education increases interest in entrepreneurial careers (Fleming, 1994; Kolvereid, 1996). There has been an idea that, starting a business is the result of individual intention which is predicted by attitudes. There is a body of literature which shows that people who start businesses have a higher level of education than people who do not (Bowen and Hisrich, 1986; Borjas, 2000; Parker, 2004; Jones *et al.*, 2012; Rae *et al.*, 2012). However, EEPs have been recently found to influence both current behaviour and future intentions and researchers have an increased interest in the topic (Krueger and Carsrud, 1993, Kolvereid, 1996, Autio *et al.*, 1997, Kolvereid, Moen, 1997; Tkachev, Kolvereid, 1999; Fayolle, 2002; Fayolle *et al.*, 2006; Rae, 2010; Rae *et al.*, 2012). Individuals with a high level of knowledge and skills have relatively

high intention to start-up a new business. The researcher argues that more education regarding entrepreneurship may develop high intention to be self-employed because as a self-employed entrepreneur he or she may be aware of how the firm's profit can be improved by virtue of his/her more positive attitude to risk.

In order to investigate the impact of entrepreneurial education towards individuals, researchers have utilised the theory that assumes that human social behaviour is reasoned, controlled or planned in the sense that it takes into account the likely consequences of the considered behaviour (Ajzen and Fishbein, 2000). The main purpose of this theory is centred on assessing the individual intention to perform a given behaviour. This theory is largely related to the family of intentional models that can be used to describe entrepreneurial behaviour through career intentions, which depend upon attitudes related to the behaviour, social standards and level of perceived control (Ajzen, 1991). Aside from this, personal behaviour, personality traits, the range of individuals' competencies and demographics all play an important role in entrepreneurial intention (Krueger *et al.*, 2000; Nabi *et al.*, 2006).

A large and compelling idea of developing individual intention has been postulated through the result of three conceptual determinants, such as attitude towards behaviour, subjective norms, and perceived behavioural control. From these factors, perceived behavioural control plays a significant role in regard to the notion of perceived self-efficacy. In the literature, self-efficacy refers to 'people's beliefs about their capabilities to exercise control over their own activities and over events that affect their lives' (Bandura, 1991). This research has focused on the belief that perceived behavioural control is centred on the ability to perform a particular behaviour. Subjective norms are concerned with the perceived social pressures to perform the action being monitored. To this extent, the opinion of family members, close friends and other influential people, such as teachers, successful entrepreneurs and enterprise advisors, for example, are believed to shape the formation of entrepreneurial intentions. Finally, attitudes

towards behaviour is an element that has been defined by Ajzen (2002, p. 50) as ‘the degree to which person has a favourable and unfavourable evaluation or appraisal of the behaviour in question’. Owing to the need to extend the theory, the researcher follows the research line and adapts the TPB based on the relationship between EEPs variables and intentions towards entrepreneurship. The main target of this research is concerned with examining the intention of students regarding the EEPs towards target behaviour.

4.6 Development of Hypotheses

Following the researcher’s conceptualisation for the study where educated people can become more entrepreneurial, there is an increased interest in entrepreneurial careers and their greater contribution to the economic development. This idea leads to the development of intentions for initiating business activities, which are best predicted by attitudes such as attitudes towards behaviour, subjective norms and perceived behavioural control. Eventually, the development of entrepreneurial attitudes and behaviours to become self-employed can be facilitated through entrepreneurial education. Thus, there is increasing interest about entrepreneurship attitudes and intentions through entrepreneurial education. In terms of educational context, entrepreneurship education programmes have been found to influence both the current behaviour and the future intentions (Kolvereid and Moen, 1997; Tkachev and Kolvereid, 1999; Fayolle, 2002; Fayolle *et al.*, 2006). Researchers have established a positive impact and increased intention to start new businesses at some point in the future. Moreover, different attitudes and intentions have been found to be significant between students who have taken entrepreneurship courses and those who have not.

Although researchers have witnessed that people who start their own businesses have a higher level of education than those who do not (Bowen and Hisrich, 1986), more specifically some researchers have argued that nascent

entrepreneurial success is often a function of relevant entrepreneurship education (Borjas, 2000; Parker, 2004). Consequently, researchers have considerably focused on entrepreneurship education in recent years owing to the fact that entrepreneurship education has been promoted to encourage entrepreneurial behaviour (Edwards and Muir, 2005). An individual with high levels of knowledge and skills gets the high intention to start-up a new business. This researcher argues that more education regarding entrepreneurship may develop high intention to be self-employed because, as a self-employed, the individual may be aware of that the firm's profit can be made greater by virtue of his/her more positive attitude towards risk. Following the TPB perspectives, this researcher had developed hypotheses about a number of factors that support entrepreneurs in terms of developing entrepreneurial intentions and attitudes through the higher education.

4.6.1 Entrepreneurial Attitudes and Intentions

Attitude is a tendency towards favourable or unfavourable behaviour regarding the object of the attitude (Ajzen, 1991). From the belief of motivation theory, attitude has been recognised as having a positive impact on the development of behaviour (Kuratko and Hodgetts 2001). Generally, every attitude has an objective regarding a particular or general thing, person, place, activity, cognitive orientation or lifestyle, or even combinations of these categories. There is the belief that attitudes might be general or specific towards the objectives that need to be matched by measurement specificity (Ajzen and Fishbein, 1977; Ajzen and Madden, 1986). For example, attitude towards achievement in general (general objective) is not the same as attitude toward achievement in an entrepreneurial setting (specific objective). Thus, matching attitude specificity with measurement specificity accomplishes two things: first, it increases the accuracy of the measurement within the specified domain; and second, it increases the predictability of the instrument because of this increased accuracy.

Attitude has been recognised as an important determinant of an individual's success and thus it is receiving large attention in the field of entrepreneurship research. There is evidence that shows that attitude is the best determinant to establish why individuals start a business, and why some individuals are more successful in business than others are (Kirby, 2003). In response to understanding individuals' attitudes towards entrepreneurship, many researchers have interest into the attitudes of people (Kolvereid and Isaksenm 2006; Souitaris *et al.*, 2007; Kritikos, 2009; Sowmya *et al.*, 2010). Based on the proposition that attitude can be used to understand people's response towards the start-up of a business and individuals' success in entrepreneurship, this researcher examined individuals' attitudes towards entrepreneurship through increasing entrepreneurial activity and aspiration.

The overall tenet of attitude theory is that the psychological TPB is predicted by intention towards behaviour, and this theory has theoretical and practical benefits because attitudes are related to the individual's objectives, which can change from time to time and situation to situation. However, attitudes, such as attitude towards the behaviour, subjective norms and perceived behavioural control, are a source of intention. The rate of the change of attitudes therefore depends on how fundamental the attitude is to the individual's identity and experiences that influence a particular attitude. In general, the ability to change attitude-behaviour consistency, which predicts behaviours of individuals, is far from precise, but in regard to entrepreneurial attitudes and intentions towards self-employment, there is a positive relationship. Despite the lack of perfect attitude-behaviour correlation, the TPB has been empirically tested using self-employment as the target behaviour (Kolvereid, 1996a; Krueger *et al.*, 2000; Luthje and Franke, 2003; Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Rodrigues *et al.*, 2010; Goduscheit, 2011).

In the TPB, the central factor is an individual's intention, which is the cognitive representation of the individual to perform a given behaviour. The immediate

antecedent of behaviour has been claimed by three conceptual determinants as described below.

The first of these is ‘attitudes towards behaviour’, which has been described by Ajzen (1991) as the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question. Actually, this is the perception of individuals’ desirability of self-employment or organisational employment. According to Kolvereid (1996a), high attitudes towards self-employment are more in favour of self-employment than organisational employment.

The second determinant of behaviour in the TPB is ‘subjective norms’, which is related to subjects’ perceptions of other people’s opinions of the proposed behaviour, as defined by Ajzen (1991) and is considered as perceived social pressures to perform or not to perform the behaviour. The purpose of subjective norms is the perception of what the important people in the respondents’ lives think about them becoming self-employed, weighted by the strength of the motivation to comply with them (Krueger *et al.*, 2000).

Finally, ‘perceived behavioural control’ concerns the perception of whether it is difficult or easy to perform the behaviour (Ajzen, 1991). It reflects the perceived ability to become self-employed (Kolvereid, 1996a). This concept in the TPB was intended to demonstrate the increase of perceived behavioural control through the perception of opportunity. To this extent, many researchers, such as Kolvereid (1996a); Tkachev and Kolvereid (1999); Autio *et al.* (2001); Fayolle *et al.* (2006); Souitaris *et al.* (2007); Gelderen *et al.* (2008); Gird and Bagraim (2008); Engle *et al.* (2010); Ferreira *et al.* (2012) and Solesvick *et al.* (2012) have established that all three components of TPB significantly affect intention.

Reflecting on the above literature, individual collective attitudes can be measured through the TPB, which empirically confirms the relationship between attitudes i.e. attitude towards self-employment, subjective norms and perceived behavioural

control) and intention towards self-employment. However, in a few research studies, such as that of Krueger *et al.* (2000); Linan and Chen (2009) found that subjective norms had the weakest influence on the intention, which was similar to the findings of Armitage and Conner (2001); Autio *et al.*, (2001) and Gird and Bagraim (2008); thus, calling for more studies in the future. Additionally, more research has been directed towards confirming the relationship between attitudes and intention towards self-employment.

Therefore, in an attempt to replicate and confirm early results linking self-employment attitudes with intentions, which have been found in different cultures and environments, the researcher, in the context of Saudi Arabia, suggests the following hypotheses, and their hypothetical relationships are shown in figure 4-3.

H_{1a}: The intention to become self-employed (Entrepreneurial Intention) is positively related to the attitude toward self-employment.

H_{1b}: The intention to become self-employed (Entrepreneurial Intention) is positively related to the subjective norms.

H_{1c}: The intention to become self-employed (Entrepreneurial Intention) is positively related to perceived behavioural control.

Behaviour in entrepreneurship could be confirmed through entrepreneurial intentions. For the development of potential entrepreneurs' behaviours, educational programmes have a significant impact. This has been supported through the research findings that educational programmes can develop entrepreneurial intentions in terms of learning, inspiration and resources utilisation (Zhao *et al.*, 2005; Souitaris *et al.*, 2007). However, education and training have been dedicated to developing entrepreneurial intention. Since the last four decades, the role of education and teaching variables has been identified in relation to the development of perceptions surrounding the desirability and feasibility of entrepreneurial behaviour (Shapero and Sokol, 1982). The dominant focus of the TPB is on the intention through an education programme, which has

a positive impact on the antecedents of intention (Krueger and Carsrud, 1993). As an example, Krueger and Carsrud (1993, p. 327) stated that, "Teaching people about the realities of entrepreneurship may increase their entrepreneurial self-efficacy, but simultaneously decrease the perceived desirability of starting a business".

In the context of entrepreneurial set-up, self-efficacy can be developed through educational setting, which can contribute to establishing how one sees oneself, and whether or not one believes, he or she is able to become a successful entrepreneur. In the literature, intentions in the context of entrepreneurship have also been widely examined. Boyd and Vozikis (1994) argued that the intentions of creation become much stronger when the level of self-efficacy of individuals grows due to the presence of an entrepreneurial role model and the influences come from several close relatives. This suggestion has also been supported by Tkachev and Kolvereid (1999), who stated that the role model is a dominant factor for the prediction of status choice to become self-employed.

Entrepreneurship literature on nascency has reported the gestation period before venture-creation (Alsos and Kolvereid, 1998). The concept of nascence is related to the intention of the individual (who is known as an entrepreneur) with the intention to create an organisation (Katz and Gartner, 1988). Moreover, an individual who (in the process of starting up a business) is involved in activities, such as assembling resources, hiring or incorporating the company, which is a series of behavioural activities known as "the function of nascency". To this extent, many activities and assumptions are concerned with such a gestation-process towards more activities initiated or completed the closer the nascent entrepreneur gets to the start-up event (Carter *et al.*, 1996; Alsos and Kolvereid, 1998).

In the literature, a link between the antecedents of intentions and entrepreneurship behaviour are less clear. Researchers, such as Krueger and Dickson (1994), contend that the perceptions of opportunity can increase through perceived

behavioural control. Moreover, Davidsson (1995); Kolvereid (1996b); Hmieleski and Baron (2009); Fauchart and Gruber (2011) have also identified that the social influences and explicit experience may affect the intention and the decision to start a new business. However, mixed response has been found in the literature, such as the work by Katz (1990), who questioned the relationship between intention and behaviour, and also Kolvereid (1996a), who supported the call for more research regarding the relationship between intention and behaviour link.

The present study has attempted to address the belief that many students may not follow the self-employment route at the end of a programme, and hence the researcher aimed to assess the link between intention towards self-employment and nascency and start-up activities. In view of this, the researcher has hypothesised following hypotheses, and the hypothetical relationships of these hypotheses are shown in figure 4-3.

H_{2a}: After taking an EEP course, there is increased propensity to become a nascent entrepreneur.

H_{2b}: After taking an EEP course, there is a greater number of start-up activities initiated or completed.

Today, education is facing many challenges and opportunities owing to continuous social and economic changes, and the globalisation of the labour market, which have promoted new management and skill requirements. These elements have forced many graduates or job seekers to adopt innovative approaches in their search to locate suitable jobs or graduate-type career paths. A wide range of literature is witnessed that suggests that entrepreneurship and its education are related to the development of graduate careers and employability (Nabi *et al.*, 2006; Pittaway and Cope, 2007; Rae, 2007; Millman *et al.*, 2008). The importance of entrepreneurship in the context of developing graduate careers and employability is owing to the fact that education is already in crisis in relation to graduate unemployment (Tapscott, 1998).

However, entrepreneurship education has a key role to play in the context of developing attitudes and intentions through their talents and creativity to pursue their dreams, obtain independence, and the sensation of liberty. In addition, the values and norms of the entrepreneur as a professional are based on the concepts of creativity, innovation, and the opportunity for development within a dynamic environment. In addition, it is widely accepted that entrepreneurial activity is the key to innovation, improved productivity, and more effective competition in the market place (Ronstadt, 1985). Risk-taking, leadership, achievement, and an action orientation in pursuit of opportunities are recognised as important cultural components of entrepreneurship (Plaschka and Welsh, 1990).

Thus, many researchers in the domain of entrepreneurship have suggested a link between entrepreneurship education and entrepreneurial attitudes and intentions. For example, Robinson *et al.* (1991) revealed that the TPB addresses the attitude model of entrepreneurship through EEPs, much like developing individuals' attitudes and intentions. Another researcher, Dyer (1994), proposed specialised courses in entrepreneurship to start a business that may support some students to give them the confidence they need to start their own business. The strong interest in entrepreneurship education needs to develop potential entrepreneurs because of serious issues regarding the occupations or careers and perceived feasibility and desirability of self-employment by individuals. Encouraging entrepreneurial interest is beneficial even for those who do not become entrepreneurs as it promotes the entrepreneurial spirit in other lines of work and within community life. To this extent, large-scale research studies have examined entrepreneurship education for improving the perceived feasibility for entrepreneurship through increasing students' knowledge, building confidence and promoting self-efficacy (Krueger and Brazeal, 1994). Few studies have been found in the literature that showed a relationship between enterprise education and intention; however, the context of earlier studies was a sample of high school students rather than university students (Peterman and Kennedy, 2003). However, recently, Fayolle *et al.* (2006), Souitaris *et al.* (2007), Gird and Bargrain (2008) and Solesvik *et al.* (2012) found that entrepreneurial education as a whole can affect individuals'

intention. Since there are few studies testing the link between entrepreneurship education and attitudes and intentions, there is a clear need for empirical studies testing in different culture to confirm the link of entrepreneurship education and individual's attitudes and intentions. This researcher has proposed hypotheses that are described below and hypothetical relationships are illustrated in figure 4-3.

Hypothesis H3:

H_{3a}: After taking an EEP, the student's attitude toward self-employment and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.

H_{3b}: After taking an EEP, the student's subjective norms and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.

H_{3c}: After taking an EEP, the student's perceived behavioural control and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.

H_{3d}: After taking an EEP, the student's intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.

Hypothesis H4

H_{4a}: There is a difference in attitude toward self-employment and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.

H_{4b}: There is a difference in attitude toward subjective norms and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.

H_{4c}: There is a difference in attitude toward perceived behavioural control and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.

H_{4c}: There is a difference in the intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.

4.6.2 The Benefits of EEPs

In the context of entrepreneurship, entrepreneurial education has been viewed as a significant factor that increases and fosters the right mind set and skills of an individual to embrace entrepreneurship (Rae, 1997; Formica, 2002; Hannon, 2005; Li, 2006, Rae *et al.*, 2012). For this reason, entrepreneurship education is related to increasing the number of people becoming entrepreneurs. However, in entrepreneurship, entrepreneurial education provides support in terms of self-employment, perceived feasibility / behavioural control and perceived desirability (attitude) and the formation of new business (Krueger *et al.*, 2000; Keogh 2004). Hence, education is an external factor that influences individuals' attitudes and mind set.

Many researchers have reported that people who start businesses have a higher level of education than people who do not because entrepreneurs have to acquire entrepreneurial behaviour towards business (Jacobowitz and Vilder, 1982; Bowen and Hisrich, 1986; Bates, 1995). In order to foster entrepreneurship, specialist courses encourage entrepreneurial behaviour; thus, entrepreneurial education is successful in encouraging entrepreneurs to start in new businesses or otherwise improve the performance of existing businesses. Researchers have therefore focused on an enterprise education programme and its effects on perception of entrepreneurship, which is likely to affect perceptions and incorporate interactive learning, experience-based learning, role models, community and business links,

and social experiences, such as opportunities to exercise significant responsibilities, to start one's own business and to observe role models.

Fayolle *et al.* (2006) proposed the use of the TPB in entrepreneurship education to evaluate an entrepreneurship programme that can identify the impact of education on students' perception of the attractiveness of starting a business, their perception of social pressure and perception of their own ability and intention to start-up a business. Souitaris *et al.* (2007) tested the impact of entrepreneurship education on the benefits from attending entrepreneurship education and found that learning from modules and the utilisation of incubator resources did not improve the level of attitudes, intentions and behaviour. Nevertheless, students' inspirations were positively related to subjective norms and intentions. However, as the researchers stated, the few empirical studies that there are tend to have evidence in general but they do not make measurements in different cultures and environments.

Therefore, one of the aims of the present research study was to understand the benefits of entrepreneurial education theory by revealing three types of programme benefits to students such as learning from modules, inspiration and university resources and incubation, which are described below.

4.6.2.1 Learning from Modules

In the domain of entrepreneurship, entrepreneurs are made not born; thus, the emphasis on learning has been directed towards the necessity of developing skills and knowledge in terms of starting up a business, problem-solving and leadership, all through education programmes (Gorman *et al.*, 1997; Henderson and Robertson, 2000; Rae *et al.*, 2012). The concept of entrepreneurial learning is 'learning to recognise and act on opportunities, and interacting socially to initiate, organise and manage ventures' (Rae, 2005). This concept has a dual purpose, such as learning the theory, as well as learning through entrepreneurial activity. However, there might be apparent differences between enterprise education and enterprise (or entrepreneurial) learning. In the case of entrepreneurial learning through education, the literature provides intellectual and pedagogical foundations

for the development of enterprise activity through learning in conditions of change and uncertainty (Gibb, 2002). Researchers, such as Hannon (2004) and Hytti and O’Gorman (2004), have increasingly turned to a recursive theme, considering the cultural divide in education between the ‘bureaucratic-corporate and entrepreneurial’ values manifested in a polarisation between educational and enterprise learning modes, which persist in education (Gibb, 1993; 2002; Rae and Draycott, 2009). Most commonly, researchers’ focus on enterprise education has shifted towards experiential learning, learning ‘for’ rather than ‘about’ entrepreneurship (Garavan and O’Cinneide, 1994a, b; Gorman *et al.*, 1997; Hannon, 2004; Pittaway and Cope, 2005). However, the dominant focus in the literature has been made with learning as activity, as a means of sense making, connected with individual emergence and articulating and theorising from learning (Rae, 2005; Cope and Watts, 2000; Cope, 2003, 2005). In this regard, entrepreneurial education has been important in the development of entrepreneurs (Breen, 2004).

Most commonly, education is considered as a centre for learners to embrace new methods and technologies, which focus on learners’ creativity, informality, curiosity, emotion and its application to personal and real-world problems and opportunities (Penaluna and Penaluna, 2008). Prior knowledge and information might be the result of experience or education for a particular subject (Gimeno *et al.*, 1997; Venkataraman, 1997). Researchers have therefore focused on the nature and contents of EEPs for developing entrepreneurial behaviour towards opportunities (Ghosh and Block, 1993). According to Gimeno *et al.* (1997) education-derived knowledge facilitates the integration and accumulation of new knowledge, providing individuals with a large opportunity set. Since gaining knowledge is the best way of understanding entrepreneurial opportunities, it can be obtained through HEIs where growing recognition is given to learning for entrepreneurship (Matlay, 2009; Rae *et al.*, 2012).

This researcher has proposed that specific knowledge about being an entrepreneur learned during a programme may improve participants’ opportunities, ability, and

attitudes and intentions. In view of this, the researcher proposed hypotheses explained as under and shown in figure 4-3.

H_{5a}: The greater the learning from the EEPs modules, the higher the post-programme improvement in the student's attitude toward self-employment, and intention to become self-employed.

H_{5b}: The greater the learning from the EEPs modules, the higher the post-programme improvement in the student's subjective norms and intention to become self-employed.

H_{5c}: The greater the learning from the EEPs modules, the higher the post-programme improvement in the perceived behavioural control and intention to become self-employed.

H_{5d}: The greater the learning from the EEPs modules, the higher the post-programme improvement in the intention to become self-employed.

4.6.2.2 Learning from Inspiration

The inspiration concept has been widely used in different disciplines, including psychology, anthropology, management and education (Leavitt, 1997; Dessd and Picken, 2000; Tjas, Nelsen and Taylor, 1997). In the psychology literature, inspiration has been defined as the process of breathing in or inhaling in a figurative sense (Thrash and Elliot, 2003). According to the Oxford English Dictionary (p. 1036), inspiration is breathing in some idea or purpose into the mind, suggestion, awakening or the creation of some feeling or impulse—especially of an exalted kind. However, the general conceptualisation of the term inspiration implies motivation, which involves the energisation as well as the direction of individuals' behaviour (Thrash and Elliot, 2003).

From the entrepreneurship perspective, nascent entrepreneurs become visible to follow an 'inspiration, then perspiration' sequence in entrepreneurship development. Nascent entrepreneurs can gain more confidence in their abilities for

entrepreneurship after being attracted to venturing and then searching for opportunity. Moreover, this domain requires more concrete skills, planning, financing, marshalling of resources, and the implementation of day-to-day management of employees. However, inspiration can be gained through experience, with c', and making them consider becoming entrepreneurs. According to Storey (2000), through education, entrepreneurship students might be expected to be more likely to consider starting their own business because of self-selection into an entrepreneurship programme. Considering the importance of the EEP for inspiration, nascent entrepreneurs suggest that educational activities should address activities which are useful for beginning the process, such as envisioning success and identifying a new product or service idea which is being gained through inspiration.

Few studies have been found in the literature that investigated the entrepreneurial inspiration through education. A study conducted by O'Cinneide *et al.* (1994), who adopted both quantitative and qualitative research approaches, including analyses of student reports and assignments, revealed that EEPs are one of the most important ways of developing young people for intangible entrepreneurship characteristics, such as the flash of inspiration, the excitement of success, the drive to succeed and the ability to deal with failure. Moreover, Souitaris *et al.* (2007) tested the impact of entrepreneurship education or the benefits from attending entrepreneurship education and found that inspiration was positively related to subjective norms and intentions. However, the literature tends to have evidence in general, but these factors have not been measured in different cultures and environments.

Therefore, one of the aims of this researcher was to understand the benefits of entrepreneurial education theory by revealing programme benefits to students such as inspiration. Following on from Thrash and Elliot (2003), the researcher used the term 'trigger' to refer to the stimulus object that evokes inspiration (e.g., the views of a professor, an external speaker, a visiting entrepreneur, a person or an idea) and the term 'target' to refer to the object towards which the resulting

motivation is directed (e.g., a possible self, personal goal, or creative product). In view of this, the researcher proposed the following hypotheses, which are illustrated in figure 4-3.

H_{6a}: The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in attitude toward self-employment and intention to become self-employed.

H_{6b}: The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in subjective norms and intention to become self-employed.

H_{6c}: The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in perceived behavioural control and intention to become self-employed.

H_{6d}: The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in intention to become self-employed.

4.6.2.3 University Resources and Incubation

Students of entrepreneurship need to learn the necessary skills and knowledge for the start-up of a business, and they also need to solve business problems. With the support of inspiration and the availability of resources, students of EEPs can also benefit and help to evaluate their business ideas and develop them within a venture. A wide variety of resources, such as entrepreneurial-minded classmates, lecturers / academics, technology transfer officers, practitioners and others are available to get advice from for the set-up of the new business venture. The literature has supported the belief that, during taught courses, students can relate to a group of entrepreneurship minded classmates in order to build a team, use plans, compete and get advice from lecturers / academics, technology transfer officers, classmates, networking and access research resources and physical space

for meetings to test their new ventures (Souitaris *et al.*, 2007). The dominant focus of resources and incubation is to utilise resources that are available in the given circumstances. Various researchers, such as Johannisson (1991), Autio *et al.* (1997); Fayolle (2000b); Sowmya *et al.* (2010) and Rae *et al.* (2012) have shown the importance of resources for entrepreneurship such as funds, networks, entrepreneurship centres, business incubators, a broad supply of entrepreneurship programmes, entrepreneurship education programmes institutes and specialised libraries.

In an era of competition, organisations want to be innovative through the utilisation of resources, which is a view that has been linked to entrepreneurship since the early writings on the subject. The earliest researchers like Schumpeter (1934) have argued that entrepreneurs are constantly modifying and developing new markets through innovative and unrehearsed combination of resources. The control of scarce resources is an essential hurdle in entrepreneurship and less empirical research has been found to examine the relationship between the utilisation of incubation resources, attitudes and intentions to be self-employed. A study conducted by Souitaris *et al.* (2007) examined the resources and incubation offered during entrepreneurship courses towards the development of attitudes and the intention to become self-employed and their results showed that resources and incubation were not positively related to subjective norms and intentions. However, the literature tends to have evidence in general but there are no studies, which measure these factors in specific cultures and environments. In the present study, the researcher has examined effect of resources and incubation during EEPs in developing the attitudes and intentions towards being self-employed. In view of this aim, the researcher proposed three hypotheses that are described below and shown in figure 4-3.

H_{7a}: The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in attitude toward self-employment and intention to become self-employed.

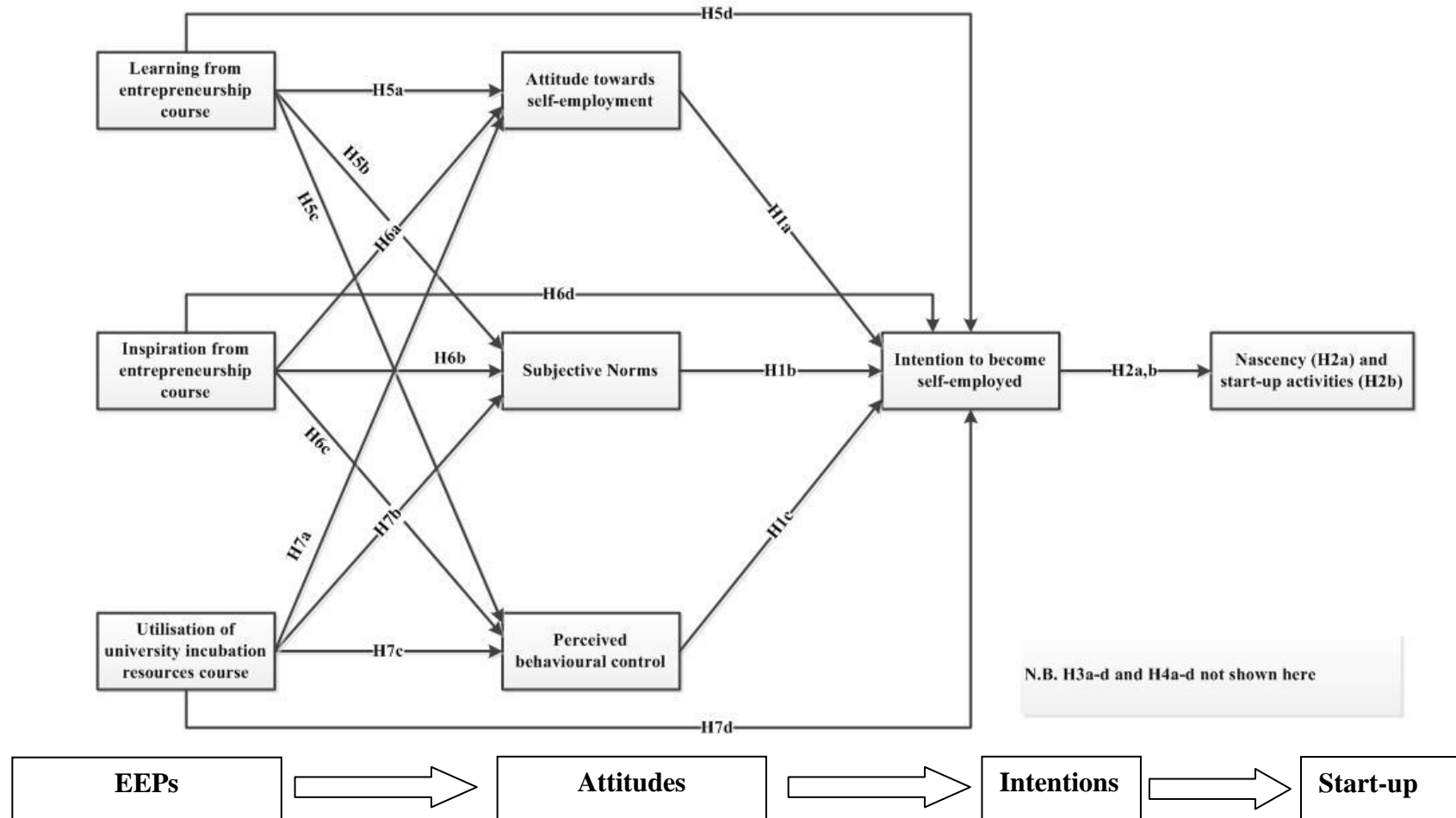
H_{7b}: The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in subjective norms and intention to become self-employed.

H_{7c}: The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in perceived behavioural control and intention to become self-employed.

H_{7d}: The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in intention to become self-employed.

Figure 4-3 shows proposed theoretical model and suggested hypotheses and hypothetical relationships illustrating all proposed hypotheses except H3a-d and H4a-d, which are not shown in this figure because they suggest comparison between pre-test and post-test for the EEP group (experimental group) (H3a-d) and between pre-test and post-test for the control group (H4a-d).

Figure 4-3 The Conceptual Model, Proposed Hypotheses and Hypothetical Relationships



4.7 Summary

This chapter has reported the conceptual approach of the present study, which is supported by the domain literature. Before developing a conceptual framework, the researcher described the domain of entrepreneurship as the engine that drives the economy and supports the creation of organisation where the entrepreneur, creates value, innovation, profit or non-profit, growth, uniqueness and the owner-manager. This concept supports the opportunity of identification, risk taking, newness, marshalling resources, and creating a business. The literature supports the idea that some combination of factors, which includes personal attributes, traits, background factors, experience and disposition and models related to individual behaviour, intentions and situational factors, has been developed and tested that influence individuals in the decision to be an entrepreneur. However, in the literature, entrepreneurship-orientated intentions and attitudes are studied by looking at various forms of education and training programmes that help in fostering of the relevant mind set and skills in individuals to embrace entrepreneurship. Based on this approach, this study was conceptualised with the link between entrepreneurship and education.

The researcher focused on investigating the impact of EEPs on the development of intentions towards self-employment with the idea that individual intentions are effective in predicting planned behaviour. With the support of the TPB, behavioural intention was hypothesised to be predicted by attitudes, such as attitudes towards entrepreneurial behaviour, subjective norms and perceived behavioural control. Indeed, intention predicts behaviour and attitudes predict intentions. In addition, the researcher argued that attitudes and beliefs predict intentions, and that intentions predict behaviours. The researcher attempted to link the development of these attributes to entrepreneurship education.

Moreover, the present research study investigated the benefits of entrepreneurial education theory by revealing three types of programme benefit for students, which included learning, inspiration and incubation. Finally, hypotheses were developed and described on the basis of the relationship of variables. The next chapter describes the methodology used in this research study.

Chapter 5: Research Methodology

5.1 Introduction

This chapter explains the research methodology in order to justify the data collection methods adopted for empirical testing of the proposed conceptual framework, which was described in the previous chapter. Research is a systematic technique whereby special tools, instruments and procedures are employed to examine a problem or to find an answer to a question. It is therefore essential to review and understand the philosophical stance for a particular research study. In fact, research starts with a problem that requires solving through the collection of appropriate data or facts from a relevant population. Data may be quantitative or qualitative and the research should seek to know not only “what” but also “how” and “why”. However, one important consideration is that research should be conducted using appropriate methods with the support of reliable and validated facts.

In research, comprehensive rationalisation is needed as to why particular methods and procedures were chosen for conducting the study. In view of the conceptual framework and the rationalisation of proposed hypotheses, the researcher is required to understand the philosophical stance of research in the domain. This will support the justification of the selected approach. However, the selection of an appropriate method with justification affects the novelty and validity of the research.

This research study investigated the effects of EEPs on the factors influencing students’ attitudes and intentions toward self-employment in the context of Saudi Arabia. Based on the research model, hypotheses were developed, as described in the previous chapter, which were examined through reliable and validated data.

This chapter is divided into 12 sections, which include the introduction; research philosophy; research design; survey questionnaires and measurement scales; research protocol; data reliability and validity; fieldwork; data collection, data analysis; hypothesis testing; ethical considerations; and summary of the chapter.

5.2 Research Philosophy

In the business and social science domain, research is an essential and well-known part of solving research problems, which may lead to progress and development. In fact, research is a search for knowledge that can be conducted through using systematic techniques and by applying special tools, instruments, procedures and a series of measures to obtain answers to specific questions. In support of the development of systematic knowledge, different methods and procedures can be considered. Given the importance of proper and systematic knowledge, it is necessary to understand the philosophical stance of research, which provides suitable and relevant information for examining the reality in the domain. Understanding the philosophical stance in a research field elucidates the primary nature of knowledge and reality in the field. Researchers believe that the choice of a research philosophy should be based on the approach that the researcher wants to adopt for enhancing the body of knowledge (Saunders *et al.*, 2003). Many approaches exist in different fields of study and it is important to know the appropriate research approach that should be adopted for a particular research problem, which may affect the research in terms of data collection and data analysis. The research philosophy thus relates to using reliable and valid procedures to gather data from society that can be statistically analysed (Gilbert, 2001). In response to the concept of a research philosophy, the importance of being aware of philosophical approaches is that this awareness facilitates researchers in understanding reality.

In scientific research, the development of a conceptual framework is imperative as it guides the assumptions about the relationships being explored. Examining the links within a framework requires the choice of an appropriate and relevant

paradigm that can support a specific line of inquiry. Many researchers have focused on four main categories of paradigms: positivism, post-positivism, critical theory, and constructivism (Guba and Lincoln, 1994). Given the great importance of choosing an appropriate method to assess the conceptual framework, researchers must understand different paradigms because they have different approaches and different effects on different areas of research.

The first paradigm is positivism and its school of thought is scientific. The positivist paradigm is arguing on objective reality, which advocates value free objective investigations. It is dominant in scientific research that supports science quantitatively as it examines independent data about a single apprehensible actuality. However, researchers like Brayman and Bell (2007) agree that for the study of social reality and beyond, researchers can use scientific methods, given that the positivist paradigm is related to exploring the facts or causes of social phenomena. This means that facts are value free and do not change because they are being observed (Hussey and Hussey, 1997). Furthermore, the purpose of the positivist approach is to define and predict phenomena in the social world through searching for regularities and causal relationships between their ingredients (Burrell and Morgan, 1979).

Positive approach can be used to understand human behaviour with the help of objective values. This is because positivist paradigm is related to the facts that can support to gain understanding of human attitudes and intentions because it reveals information about people through social phenomena. The main object of this approach is to obtain independent and neutral quantitative objective that seeks to explain and predict what happens in the social world by searching for regularities. This method supports easy understanding of people's meanings and ideas. The primary objective of this research study was to investigate the individual's (students) intentions towards entrepreneurship, which are believed to be established through the influence of perceived behavioural control, subjective norms and attitudes towards behaviour. Therefore, from an epistemological and ontological perspective, the positivist approach suits the present study.

The second paradigm is post-positivism, which relates to the context of human attitudes and behaviours. According to Henriques et al. (1998) post-positivist approaches are interpretive and this has led to an emphasis on meaning, seeing the person, experience and knowledge as ‘multiple, relational and not bounded by reason’. In this objective school of thought, the emphasis of scientific enquiry is on attempting to contradict hypotheses because contradictory evidence proves that the hypothesis is not true whereas confirmatory evidence only shows that hypothesis has not yet been contradicted but it is impossible to prove that it never will be.

The third paradigm is critical theory, which emphasises on social realities and subjectivities incorporating historically situated structures (Healy and Perry, 2000). This school of thought pays attention to subjectivism/realism, whereby social experience is dependent upon a social actor’s conceptualisation of a reality (Brayman and Bell, 2007). In this paradigm, inquiries often include long-term ethnographic and historical studies of organisational processes and structures. For this sort of research, assumptions are essentially subjective and hence knowledge is grounded in social and historical routines; it is therefore value dependent and not value free. Researchers adopt the critical theory paradigm to critique and transform social, political, cultural, economic, and ethnic and gender values (Healy and Perry, 2000).

Finally, the constructivist paradigm, which is used in social and business research, thus, this research assumes that truth is a particular belief system held in a particular context (Healy and Perry, 2000). This school of thought supports the view that social phenomena are frequently created by social actors (Brayman and Bell, 2007). Similar to the critical theory paradigm, constructivism seeks to find out about the ideologies and values that lie behind a fact, because that reality actually consists of “multiple realities” that people have in their minds (Healy and Perry, 2000).

In these research paradigms, positivism and post-positivism are objective investigations that apply deductive approaches for conducting empirical research

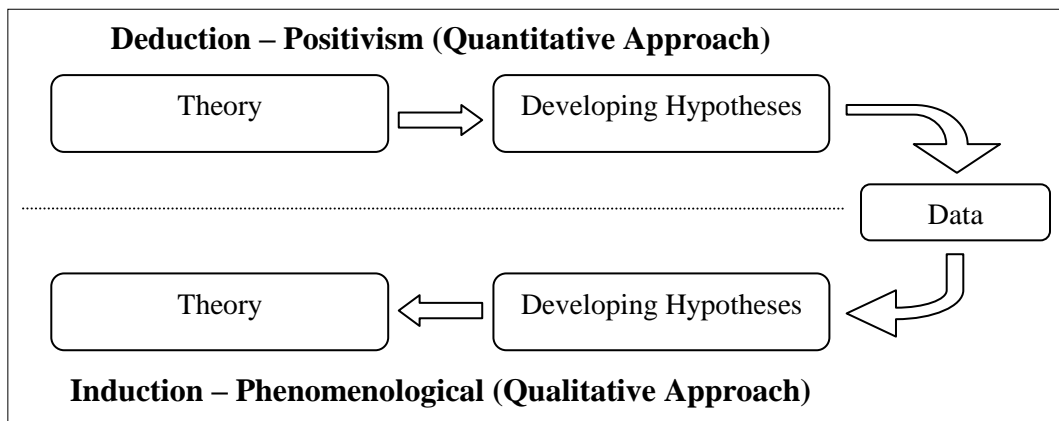
through quantitative methods (Creswell, 2003). In understanding human attitudes and behaviours through quantitative values, the positivist approach is well known (Easterby *et al.*, 1991; Bryman and Bell, 2007). Being related to quantitative facts, it deals with numbers, requiring statistical methods for analysis. The approach of this method is to use the language of theories, variables and hypotheses to predict what happens in the social world. However, this method is appropriate when searching for regularities and causal relationships between constituent elements.

Constructivism and interpretivism paradigms reflect social critical theory and social constructivism; thus, they are opposite to the scientifically based paradigms. These two schools of thought follow inductive methods of inquiry in which individuals know the subjective meanings of their experiences toward their objectives (Creswell, 2003). This is known as a phenomenological approach, whereby qualitative approaches are applied to develop theories within a specific context (Crotty, 1998). Phenomenological paradigms are related to the use of descriptive information to examine individuals' behaviours and attitudes. This approach is a well-known subjective and non-positivist approach for obtaining information related to the nature of reality. In the subjective approach, researchers try to understand human behaviours deeply through revealing individuals' values and belief systems (Cavana *et al.*, 2001). The philosophy behind this approach is to understand how and why these values and beliefs occur. According to Sarantakos (1993), the phenomenological approach is used to explain actuality using descriptive methods so as to recognise significant human action.

Researchers classify research philosophies using three basic factors: epistemology, ontology and methodology (Guba and Lincoln, 1994), which are briefly described below. The epistemology is the set of assumptions which the researcher makes about how things can be known about the world, the ontology is a set of assumptions which the researcher makes about the nature of reality whereas the methodology is the techniques and questions related to collecting and validating empirical evidence, which need to be consistent with the researcher's epistemology and ontology.

Both philosophies of research have been explored in their pure forms in the following figure (5.1). From a philosophical stance, a positivist paradigm uses deduction: beginning with a theory, hypotheses are developed and data is collected. The phenomenological approach uses induction: a case is found, relationships are observed and finally a general theory is constructed to cover all cases. As shown in Figure 5.1, the phenomenological research method starts from observing phenomena, analysing patterns and themes, formulating relationships and then developing a theory, support for the theory, and hypotheses (Gilbert, 2001).

Figure 5-1: Deductive and Inductive Approaches



Source: Developed by researcher based on Gilbert (2001)

5.2.1 Research Approach

This research focused on examining the effects of EEPs on the development of entrepreneurial attitudes and intentions of students in HEIs in Saudi Arabia. Data was collected from students of public- and private-sector universities. The students who were taught entrepreneurship courses and those who were not taught entrepreneurship courses were considered to be the participants of the study. Two times were selected for the data collection: at the start of the course and after completion of the course.

In developing this research study, the researcher adopted the positivist is initiated by using a literature review to find the research gap (Hussey and Hussey, 1997, p.55). The researcher started with review of relevant literature and discovered a research gap. The literature review was followed by the development of a conceptual framework with the support of appropriate theories such as the TPB. The researcher then developed hypotheses and posited a set of links between different variables to understand the students' attitudes and intentions regarding entrepreneurship.

In this study, a quantitative approach was chosen for data collection for the following reasons. This research was developed to measure the relationships between independent variables and dependent variables. The examination of this real position required the collection of social facts. Thus, the ontological position adopted in this study supported this approach that requires social facts. Additionally, the epistemological position adopted in this study supported collection of independently observable facts in the society. Finally, appropriate and suitable procedures and methods were used to design the methodological approach relating to measurement and identification of underlying themes in this study. This approach is objective because it is characterised by procedures and methods which are designed to discover general laws - this approach is referred to as "nomothetic". The approach and philosophy used in the present study has been used in this field by well-known researchers such as Kolvereid (1996), Alsos and Kolvereid, (1999), Fayolle *et al.* (2006), Souitaris *et al.* (2007), Brush *et al.* (2009) and Nabi *et al.* (2010).

5.2.2 Justification for Quantitative Approach

For research studies in business and social sciences, researchers mainly consider the epistemology and ontology for human facts and causes. In order to choose a particular approach based on the nature of the research framework, this study adopted the positivist approach. This was justified in line with earlier studies like

that of Orlikowski and Baroudi (1991, p. 5), who defined positivism as based on prior, fixed relationships, using quantifiable measures of variables; testing hypotheses and drawing inferences about phenomena from a sample of a population. However, the selection of the right research approach depends upon the research itself, its nature, the research question(s) and the adopted research philosophy. In view of this, researchers like Saunders *et al.* (2003) argued that there are three reasons that make choosing the right research approach important. First, it enables the researcher to make a more informed decision about the research design. Second, it helps the researcher to think about the research approaches that will work for the study and, crucially, those that will not. Third, knowledge of the different research traditions enables a researcher to adopt the research design to cater for constraints.

Thus, understanding individual behaviours and attitudes requires a more contextually oriented study perspective. Following the positivist philosophy, this study proposed to investigate students' attitudes and intentions as affected by EEPs. The researcher therefore adopted the deductive approach because it follows five sequential stages, reported by Robson (1993, p. 19) as follows:

- i. Deducing a hypothesis (a testable proposition about the relationship between two or more events or concepts) from the theory.
- ii. Expressing the hypothesis in operational terms (that is, ones indicating exactly how the variables are to be measured), which propose a relationship between two specific variables.
- iii. Testing this operational hypothesis (this will involve any form of empirical inquiry).
- iv. Examining the specific outcome of the inquiry (it will tend to either confirm the theory or indicate the need for its modification).
- v. If necessary, modifying the theory in the light of the findings.

Another reason to adopt the deductive approach was that, it enjoys three main characteristics (Saunders *et al.*, 2003). First, it involves a search to explain the causal relationships between variables. Second, the concepts need to be

‘operationalised’ in a way that enables facts to be measured quantitatively. Third, the deductive approach requires samples of sufficient numerical size to allow for generalisations to be made. These three characteristics increase the validity and accuracy of the findings of research. Thus, adopting the deductive approach, and following the literature, this study was developed on the basis of the causal relationships between the variables.

5.2.3 Rationale for Quantitative Approach

The main reason for selecting a particular approach is to conduct an inquiry in a systematic way to answer a question or to explore realities in a problematic research area. However, selecting between these approaches depends on the nature of the problem and the way the researcher addresses the problem with the support of literature in the domain. Many researchers, like Hussey and Hussey (1997) and Saunders *et al.* (2003), identified the positivist and interpretive methods as dominant methods because they have been applied to investigate the facts predicting and explaining what is happening in the social world. As discussed above, to assess human attitudes and behaviours, the positivist and phenomenological approaches can be used.

Many weakness and strengths of the different research approaches and methods have been reported in the literature. The positivist approach is more economical, faster and can cover a large population. However, its data collection method is rigid. In the phenomenological approach, data collection is more natural than artificial because the researcher interacts directly with the participant and the method involves understanding of the participants’ point of view. However, this requires more sources for data collection; the data collected is also more difficult to analyse and interpret compared to data collected using the positivist approach.

Thus adopting the positivist approach, the aim of this study was to examine the effect of EEPs on entrepreneurial attitudes and intentions. The researcher

attempted to investigate the role of HEIs in entrepreneurship education and development. The researcher proposed the following research questions:

1. Do EEPs raise the entrepreneurial attitudes and intentions of students of HEIs in Saudi Arabia?
2. Which programme-derived benefits raise the entrepreneurial attitudes and intentions of students of HEIs in Saudi Arabia?
3. What is the degree of acceptability of the proposed conceptual framework in supporting and assisting the efficient performance of Saudi entrepreneurship?

In line with the above questions, this study examined the effects of three proposed programmes i.e. learning from modules, learning from inspiration and university incubation resources. This study analysed how different sets of variables influence the attitudes and intentions of entrepreneurship at different times. In addition, this research investigated to what extent individual student benefit from the module learning, inspiration and resources of such programmes in terms of enhancing their attitudes and intentions toward self-employment. Thus, it is anticipated that this study will provide a guide for private and public higher educational institutions in Saudi Arabia on how they can effectively launch entrepreneurship programmes to increase self-employment in the state.

The positivist literature such as Cabana *et al.* (2001) and Hussey and Hussey (1997) suggested the positivist approach starts from the literature review, followed by developing hypotheses, then, collecting and analysing data and finally accepting or rejecting these hypotheses. In conducting the proposed inquiry, the researcher used the positivism paradigm and followed the steps of the positivist approach which included initially reviewing the literature, identifying research problem, developing a conceptual framework leading to developing of hypotheses with the support of relationships between independent and dependent variables and finally collecting data for testing of the hypotheses.

In summary, to carry out this study researcher adopted the positivist approach and used the hypothetic-deductive methodology. This study followed the procedure that started with literature review to find out the research gap. Based on that gap the researcher developed a conceptual framework where a set of links were suggested between a number of variables through hypotheses and finally for assessing these relationships data were collected and analysed through appropriate methodology for validating or rejecting the relationships between variables suggested in the hypotheses..

5.3 Research Design

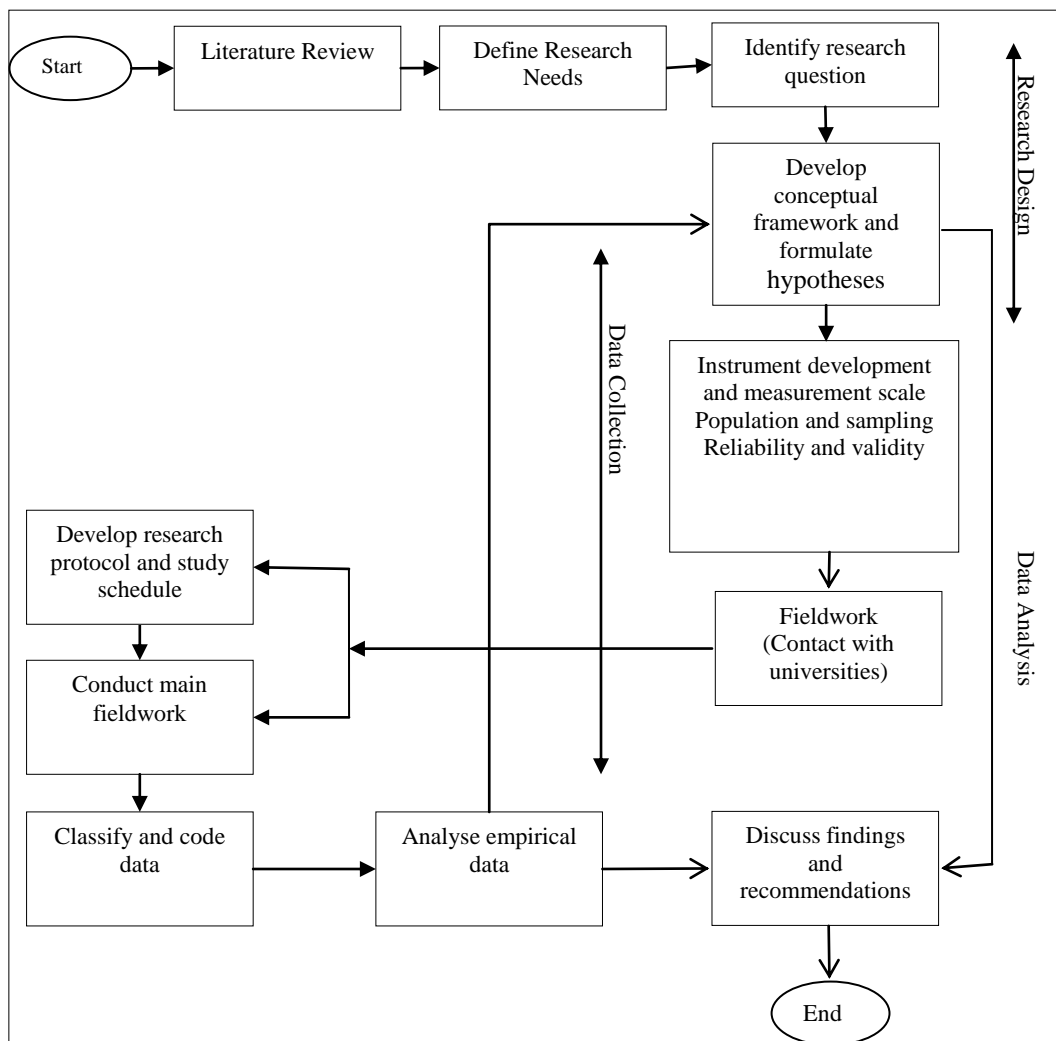
Developing a considered research design allows research to be conducted smoothly, as it can follow a sequence of steps. Many researchers have conceptualised that research design is like a model that is connected with a sequence of steps that are closely related, whereby the next step is dependent on the completion of the former step (Sarantakos, 1993). Research design is thus connected with a supporting model that it follows in a systematic way, in order to complete the research task successfully. In addition, research design formulates the process of identifying: research problems; the context of the study; the procedures for the collection and analysis of data; ethical requirements; and the researcher's role while conducting the study (Hussey and Hussey, 1997).

In this study, the researcher used the positivist approach, which is a well-known scientific research approach. Following this, a co-relational study was used to examine human attitudes and behaviours through objective values (Easterby *et al.*, 1991; Bryman and Bell, 2007). In view of the proposed approach, the researcher developed a research design on the basis of the hypothetico-deductive methods used for this study. Researchers like Neuman (1995) and Sekaran (2006) suggested that research design should start from a literature review. Following this, a theoretical framework should be developed, hypotheses should be formulated and the procedures for data collection and analysis should be

explained. The idea behind having a systematic research design is that it enables the researcher to follow the investigation properly and accurately.

The researcher thus developed the following research design that comprised several activities connected in a step-by-step process, as shown in Figure 5.2.

Figure 5-2: Research Design



Source: Developed by researcher

Different researchers have proposed different approaches for developing a research design, for example, Sekaran (2000) proposed six steps : deciding the

purpose of the study, setting the study, identifying the type of study, defining the researcher's involvement in the study, defining the time horizon and analysing the research context. In this study, these six steps were followed as summarised in Table 5.1.

Table 5-1: Steps for Research Design Proposed by Sekaran (2000)

Research steps	Choice of the researcher
Purpose of the study	Hypotheses testing
Investigation type	Correlation
Research Extent	Researcher's minimal interference
Setting of the study	Non contrived
Analysis Unit	Individuals
Time horizon	Cross-sectional

Source: Developed by researcher, adapted from Sekran (2000)

In addition, Sekaran (2000) proposed exploratory, descriptive and hypotheses testing. The exploratory method is preferred when new areas need to be investigated. This study used exploratory testing to examine the relationships between the variables in public and private sector universities. Following the correlational approach, which describes or identifies established relationships, the researcher developed hypotheses to investigate the relationships between the variables. To test the proposed hypotheses, the researcher used an appropriate sample of the population (students) and used face-to-face meetings at different time intervals (before the participants started their entrepreneurship courses and after they had completed them). The participants also completed survey questionnaires, with no interventions from the researcher.

5.3.1 Pre-Post Experimental Design

Initially the researcher started with screening all universities. In Saudi Arabia and reviewed their courses, based on this the researcher determined that there were only five universities i.e. KSU, KAU, KFUPM, UBT and PMU that offer entrepreneurship education courses in the form of three credits hours for those students who are studying in economic, administration and engineering colleges. By reviewing the contents of these courses across the above mentioned five universities, the researcher found that the content of all courses was identical and relevant to entrepreneurship education for developing individual's attitudes and intentions for self-employment (King Saud University, 2010; King Abdul-Aziz University, 2010; King Fahad University of Petroleum and Minerals, 2010; University of Business and Technology, 2010 and University of Prince Mohammed Bin Fahd, 2010). EEPs in these five Saudi universities followed similar standards in line with the recommendations set out by the Ministry of Higher Education. Lecturers in all universities were highly qualified, usually PhD holders; the universities taught EEPs on a weekly basis for 3 hours and the course materials was also similar (based on the researcher's review of EEPs modules in all Saudi universities and subsequent visits). Based on this evidence it was concluded that the EEPs were similar across all participating universities.

In addition, all these universities provided incubation resources facilities to the students which can help them to assess their business ideas in order to create a venture. In addition, the universities arranged for external speakers and entrepreneurs to share their experience and transfer knowledge to the students. All these efforts were aimed to improve the students' attitudes and intentions to become self-employed rather than looking for jobs.

In summary, this researcher followed an experimental research design in this study that assessed the impact of EEPs on students' attitudes and intentions. To measure that the researcher adopted the Pre-Post treatment between groups design. One group (the experimental group) received treatment i.e. EEPs and the

other group (the control group) received no treatment. The treatment (intervention) was an entrepreneurship course delivered to the experimental group only. Participants were assessed at time-1 (pre-test) and then at time-2 (post-test). At the time 1 both groups had similar scores across the main dependent variables i.e. attitudes, subjective norms, perceived behaviour control and intentions, which allowed the researcher to measure the effect of entrepreneurship course. In addition, in this research, the researcher investigated the range of difference within groups i.e. the differences between scores pre and post treatment for the EEP group and control group separately.

5.4 Survey Questionnaire & Measurement Scale

This empirical research was conducted in Saudi Arabia where data was collected from students of HEIs in both public and private sectors. A survey questionnaire was adapted and applied for data collection. A survey questionnaire one of the most important and economical tools for data collection; however, designing and selecting a relevant type of survey is essential in order to achieve the research objectives (Zikmund, 2003). In addition, the survey should be easy to understand and the participants should be capable of answering the questions. Moreover, survey questionnaire should be based on the kind of information needed. The main purpose of the survey instrument is to find out what individuals think, feel or do. Thus, questionnaire survey can provide insights into individuals' perceptions and attitudes. Furthermore, a variety of options using Likert scales should be presented in a survey for permitting a greater range of answers by participants. Additional advantage of questionnaire survey is possibility of targeting a large number of respondents who can be approached one time or more as well as with or without, and before and after, any specific intervention. A survey questionnaire can be developed in house based on a review of relevant literature, or it can be adapted from published research studies.

5.4.1 Developing the Survey Questionnaire

The design of a questionnaire has a significant impact on the accuracy and reliability of collected data (Cavana *et al.*, 2001). Having a well-developed questionnaire is thus imperative when gathering research information from a large group of people. Researchers have suggested that the questionnaires must look professional and well organised and they can be printing in a booklet form (Dane, 1990).

Numerous approaches have been taken regarding designing questionnaires for investigative studies. Oppenheim (2000a) stated that a survey questionnaire should start with the respondent's demographic background and then follow with specific questions about the variables of interest. In addition, the first page of the questionnaire should explain the objectives of the study and the participant's right to confidentiality and voluntary participation in the study. The objective of this general information is to help participants decide whether they want to participate in the study and complete the survey. Moreover, the language of the questionnaire is important and the questionnaire should be in the participants' native language so they can understand the objectives of the study and the questions included in the survey instrument (Lewin, 1990).

In line with experts in the domain, the researcher of this study developed a survey questionnaire with demographic questions first, followed by questions regarding the variables of interest. In this study, a letter accompanied the survey questionnaire to inform the participants about the objectives of the study. The style of questions was closed, with rating scales in which the researcher provided a range of answers for each question. From the language point of view, this study was conducted in HEIs in Saudi Arabia where the native language is Arabic; however, it is worth noting that English is the second most common language after Arabic in the country. Therefore, following Lewin (1990), the survey questionnaire initially prepared in the English language was translated into the Arabic language and then back-translated into English (Appendix-1). To ensure

the accuracy of the Arabic questionnaire, it was reviewed by two native speakers who were experts in the language. One of the reviewers was a doctoral degree holder and was working as a professor in the Arabic language studies while the second reviewer was Head of the Department of Arabic Language Studies at the King Abdulaziz University. The survey questionnaire (Table 5.2) for this study was divided into ten sections as follows:

- Section A: Demographic characteristics and family background
- Section B: Reasons for becoming an employee of an organisation
- Section C: Reasons for becoming a full-time self-employed person
- Section D: Subjective norms
- Section E: Perceived behavioural control
- Section F: Occupation status choice intentions
- Section G: Learning from modules
- Section H: Learning from inspiration
- Section I: University incubation resources
- Section J: Start-up activities

Each of the above sections comprised different questions and for answering each question different choices were provided and for most of the questions the options were measured on likert scales, as described below.

5.4.2 Measurement Scale

In developing the survey instrument, different scaling techniques were used in order to provide a variety of options to measure the participants' attitudes and intentions. This notion is supported in the literature and is frequently applied in survey studies (Scott and Fisher, 2001). From the point of view of reliability and validity, the researcher applied a variety of Likert scales, which can illustrate the intensity of respondents' feelings on a subject (Wiseman 1999). As this was a longitudinal study in which data was collected for two groups at two different

points in time. The questionnaire at Pre-test (t1) measured attitudes; subjective norms; perceived behavioural control; and intentions toward self-employment before the students entered the programmes. At Post-test (t2), the questionnaire measured the attitudes; subjective norms; perceived behavioural control; intentions toward self-employment; learning from modules, learning from inspiration and university incubation resources; start-up activities; and nascency at the end of the programme, when the students had finished their studies. This data was collected from two groups i.e. a treatment group (students who attended the entrepreneurship education programme courses known as the EEPs group) and a control group (who did not attend the entrepreneurship education courses – known as the control Group). The researcher adapted different pools of question items from the literature to measure the variables. Details of the measurement scales are given in the following sections.

Table 5-2: Summary of the Questionnaire

Section	Question / Item number	Variables (code name)	Source / reference
Section A: Demographic characteristics and family background: This section included information about the participant's institution, sex, age, college, and course type and course selection.	1-10	Demographic (DEMG)	Din (1992)
Section B: Reasons are factors for becoming an employee for an organisation: This section comprised questions that measured respondents' future career decisions to be employee for an organisation.	11-24	Reasons for becoming organisationally employed (OEMP)	Koleverid (1996) and Souitaris <i>et al.</i> , (2007)
Section C: Reasons are factors for becoming self-employed with a full-time: This section included questions that measured respondents' future career decisions to become self-employed.	25-43	Reasons for becoming self-employed (SEMP)	Koleverid (1996) and Souitaris <i>et al.</i> , (2007)
Section D: Subjective Norms: This section included questions of what important people in the	44-49	Subjective Norms (SUNO)	Koleverid (1996) and Souitaris <i>et al.</i> ,

respondents' lives think about them to become self-employed.			(2007)
Section E: Perceived Behavioural Control: Questions included in this section asked about the perceived ability to become self-employed.	50-55	Perceived Behavioural Control (PEBC)	Koleverid (1996) and Souitaris <i>et al.</i> , (2007)
Section F: Occupation Status Intention: This section asked questions about the research participants' attention and action to become self-employed.	56-58	Occupation Status Intention (OSCI)	Koleverid (1996) and Souitaris <i>et al.</i> , (2007)
Section G: Learning from Module: In this section questions were about the learning from entrepreneurship education development programmes that raised the participants' entrepreneurial attitudes and intentions to become self-employed and in helping to start a business).	59-63	Learning from Module (LEMO)	Johannisson (1991) and Souitaris <i>et al.</i> , (2007)
Section H: Learning from Inspiration: This section of the questionnaire included questions about the events or input during EEPs that raised the participants' entrepreneurial attitudes and intentions to become self-employed and in helping to start a business.	64-65	Inspiration (INSP)	Souitaris <i>et al.</i> , (2007)
Section I: University Incubation Resources: Questions in this section were about utilisation of incubator resources available in the university during EEPs that raised the participants' entrepreneurial attitudes and intentions to become self-employed and in helping to start a business.	66-76	University Incubation Resources (UPRI)	Zahra (1993) and Souitaris <i>et al.</i> , (2007)
Section J: Start-up Activities: (questions asked were about evaluating new business and starting a business)	77-97	Start-up Activities for Nascence- (STBU)	Alsos and Koleverid (1998) and Souitaris <i>et al.</i> (2007).

Source: Developed by the Researcher

Section A: Demographic characteristics and family background: This section requested personal information from the participant. In this section, 10 items were

used (question numbers 1 to 10). The items were related to the participant's gender, age range, area of study and highest educational level. Collecting this type of demographic information was supported by the literature (Weber and Weber, 2001 and Madsen *et al.*, 2005).

Section B: Reasons for becoming an employee of an organisation: Five items were used to measure the 'reasons to be an employee of an organisation' factor. These factors were adapted from Kolvereid (1996a) and Souitaris *et al.* (2007). All these factors were measured with five-point Likert scales from 1=Strongly Disagree to 5=Strongly Agree. Acceptable Cronbach's alpha reliability for all these items was set at ≥ 0.70 as suggested in the literature (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section C: Reasons for becoming a full-time self-employed person: Six factors were used to measure reasons to become self-employed. These factors were adapted from Kolvereid (1996a) and Souitaris *et al.* (2007). All these factors were measured with five-point Likert scales from 1=Strongly Disagree to 5=Strongly Agree and the minimum acceptable Cronbach's alpha reliability for these items was set at ≥ 0.70 (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section D: Subjective norms: Subjective norms were measured with six items using five-point Likert scales (from Strongly Disagree (1) to Strongly Agree (5)). These items were adapted from Kolvereid (1996a) and Souitaris *et al.* (2007) and ≥ 0.70 value of Cronbach's alpha was set as acceptable for these items (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section E: Perceived behavioural control: Perceived behavioural control was measured via six items, as developed by Kolvereid (1996a) and Souitaris *et al.* (2007). The respondents answered on a five-point Likert scale for each of these items, for which reliability was checked with setting Cronbach's alpha level at ≥ 0.70 (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section F: Occupation status choice intentions: The occupation status choice intentions factor was measured with three items that were originally proposed by

Kolvereid (1996a) and applied by Souitaris *et al.* (2007). This factor relates to the intentions of an individual to start their own business. The respondents answered via five-point Likert scales (from Strongly Disagree to Strongly Agree) to rate their agreement with the questions. The reliability of these items was determined by Cronbach's alpha which was set at ≥ 0.70 for acceptability (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section G: Learning from modules: This factor comprised five items adapted from Johannisson's (1991) conceptual classification of learning from entrepreneurship programmes and used by Souitaris *et al.* (2007). The students were asked five questions at the end of the course (Post-test) via five-point Likert scales (ranging from 'Not at All' to 'To a Large Extent'). The reliability of these items was considered as acceptable when Cronbach's alpha was ≥ 0.70 (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section H: Learning from inspiration: The inspiration factor was assessed with two items that were originally developed and used by Souitaris *et al.* (2007). The students were asked these two questions at the end of the course (Post-test) using five-point Likert scales (ranging from 'Not at All' to 'To a Large Extent'). The Cronbach's alpha reliability of these items was also set at ≥ 0.70 for acceptability of the item reliability (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section I: University incubation resources: The incubation factor was measured through 11 items developed by Souitaris *et al.* (2007) based on work by Zahra (1993). At the end of the entrepreneurship education programmes (Post-test), the students were asked to indicate the extent to which they had used each of the resources mentioned in these 11 items. Participants' answers to these questions were measured using five-point Likert scales, which ranged from the 'Minimal Utilisation' to the 'Extensive Utilisation'. All these items were considered reliable when their Cronbach's alpha was ≥ 0.70 (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

Section J: Start-up activities: The last factor ‘start-up activities’ was measured with 20 items originally developed by Souitaris *et al.* (2007), based on Carter *et al.* (1996) and Alsos and Koleverid (1998). All these 20 items were binary questions, which were answered as either ‘Yes’ or ‘No’ by the research participants. For these 20 items, Cronbach’s alpha was set ≥ 0.70 for acceptance of their reliabilities (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007).

5.5 Research Protocol and Study Schedule

The research protocol is one of the most important tools used to describe the procedures and general rules followed for data collection in a research study. It is a primary instrument that is related to the systematic review and originality of a study. By following the protocol, the smoothness and chance of success of a study are improved. Many researchers like Remenyi *et al.* (1998) and Holloway and Mooney (2004) suggested that a research protocol is an easy way of gathering reliable data, which is important to increase the consistency of data collection and to focus the process of data collection. For developing a research protocol, Holloway and Mooney (2004) described several stages, including: defining the aims and objectives of the study; setting hypotheses; calculating the sample size; defining the research methodology and design; defining the methods for statistical analysis and deciding the study schedule. Following these suggestions for a research protocol by Holloway and Mooney (2004), the researcher developed and applied the following schedule (Table 5.3) for the present study.

Table 5-3: Time Schedule for Empirical Fieldwork

Activities	Duration
Apply for ethical approval	March, 2010
Contact researcher's university to send official letter to other universities for permission to the field work	March, 2010
Contact all universities participating in the study to allow field work	March, 2010
Send the survey instrument to field experts	March, 2010
Visit KAU to distribute the survey instrument to students	April, 2010- Pre-test July, 2010-Post-test
Visit KSU to distribute the survey instrument to students	April, 2010- Pre-test July, 2010- Post-test
Visit KFUPM to distribute the survey instrument to students	April, 2010- Pre-test July, 2010- Post-test
Visit CBA to distribute the survey instrument to students	April, 2010- Pre-test July, 2010- Post-test
Visit PMU to distribute the survey instrument to students	April, 2010- Pre-test July, 2010- Post-test
Process data (coding, entry, cleaning and analysis) (Post-Fieldwork)	August, 2010 - March, 2011
Write main study results and conclusions (Post-Fieldwork)	April, 2011 -July,2011

5.6 Reliability and Validity

The survey questionnaire has been frequently applied to collect data in business and social science studies. However, data reliability and data validity are two most important issues in data collection through surveys. This section elucidates the reliability and validity of the survey to confirm the accuracy of the data. Reliability in research studies involves producing results that are repeatable and consistent over time, which demonstrates the accuracy of the measurements and procedures used and the ability to repeat the research. If the same procedure is applied again, the findings must be the same. In business research, the extent to

which the research is replicable and the research findings can be repeated determines the reliability of the research (Yen, 1994).

Testing reliability involves measuring the internal consistency of the items of the survey instrument (Hussey and Hussey, 1997), which can be done by different methods as follows. Cronbach alpha coefficient is proposed in the literature for measuring reliability, which was checked in this study by determining the Cronbach's alpha level that was considered acceptable when ≥ 0.70 (Nunnally, 1978; De Vaus, 2002; Tabachnick and Fidell, 2007). Additionally, the survey questionnaires were assessed by senior experts, which is also a well-known method applied to measure the internal consistency of a survey questionnaire. All the research participants were well qualified because the sample consisted of students in their final year of studies. Researcher's contact address and telephone and mobile phone numbers were given in the covering letter for contacting the researcher if the participants encountered any problems.

According to Christians (2000) minimum ethical considerations including consent form that showed privacy and confidentiality, and anonymity. This is because of the problem of revealing personal, social and sensitive data. The participants were assured that their data would be kept confidential and anonymous in order to maintain the ethical guarantee and reduce the chances of participants' non-response bias. The validity is concerned with the extent to which research findings show what is actually happening (Collis and Hussey 2003). Both internal and external validity can be assessed to establish the validity of a survey questionnaire. In terms of internal validity, the researcher establishes the phenomena and develops the confidence with which inferences about real-life experiences can be made (Reige, 2003). External validity is concerned with the generalisability of certain findings. According to Hussey and Hussey (1997), generalisability is the extent to which conclusions can be made about one thing based on information about another. For this approach, replication logic is used for the questionnaire survey. By means of replication, a theory can be tested again and the same results should occur (Lincoln and Guba, 1985, p.291; Yin, 1994,

p.35). The information is said to be of low validity if a question can be misunderstood. According to Cresswell (2003, p.171), external validity threats occur when the experimenter draws incorrect inferences from the sample data about other persons, other settings, and past or future situations. The construct validity establishes measures for the theoretical concepts adopted by the researcher, whereby the researcher assesses whether the constructs are closely aligned to their real-life contexts (Yin, 1994).

For this study, the researcher used two ways to confirm the validity of the survey questionnaire, in line with Belson (1986, pp. 534-535). First, the researcher assessed whether the respondents had completed the questionnaires accurately. Second, the researcher assessed whether those who failed to return their questionnaires would have had the same distribution of answers as the returnees. In the positivist paradigm, validity remains in danger of being low (as compared to the phenomenological paradigm) because it focuses on the precision of measurement (Hussey and Hussey, 1997). The danger of low validity in this research was constrained due to the methods and theories used, which have been tested frequently by prominent researchers (Kolvereid, 1996; Alsos and Kolvereid, 1999; Souitaris *et al.*, 2007; Brush *et al.*, 2009; Nabi *et al.*, 2010).

5.7 Fieldwork

The main study was conducted in public and private HEIs in Saudi Arabia. The researcher conceptualised this study through the literature review. A survey instrument was applied to collect the data, which was collected from two groups of participants. One group consisted of participants who were engaged in taking entrepreneurship education programmes at degree level, known as the EEPs or treatment group (Group A). The other group consisted of students who were not taking any entrepreneurship education courses during their studies, known as the control group (Control B). The main study data was collected at two different points in time: Pre-test (for both groups) i.e. before the students started their courses, and Post-test (for both groups), when students had finished their studies.

5.7.1 Population and Sampling

The population of the study is one of the important issues to be defined in the selection of the sample (Le Roux, 2003). A population is defined as “the universe of units from which the sample is to be selected. The term ‘unit’ is employed because it is not necessarily people who are being sampled. The researcher may want to sample from a universe of nations, cities, regions, firms, etc. Thus, ‘population’ has much broader meaning than the everyday use of the term, whereby it tends to be associated with a nation’s entire population (Bryman and Bell, 2007, p. 182).

The research context relates to the context in which the data is to be collected. The testing of hypotheses requires the selection of participants who represent the whole targeted population. In this study, the total population was those students who were interested in entrepreneurial courses in their final year of studies at HEIs in Saudi Arabia in order to better understanding their potential careers (Super, 1990). After the completion of their studies, these students might be potential candidates for self-employment, so it was important to examine the impact of education relevant to entrepreneurship in reference to their attitudes and intentions towards self-employment.

According to Bryman and Bell (2007, p.182), “The segment of population that is selected for investigation is defined as the sample”. Samples should be representative of the whole target population. In the positivist approach, sampling is important for an empirical study because the researcher can rarely cover the whole population (Hussey and Hussey, 1997). Sampling uses a fraction of subjects drawn from a population. This study applied random sampling of those students who were engaged in entrepreneurship education and those who were not taking entrepreneurship courses.

The advantages of random sampling include representativeness, freedom from human bias, classification errors, and ease of sampling and analysis while its

limitations include errors in sampling, and need for more time and high labour (Fowler, 2009).

In addition, according to Saunders et al. (2007), data can be biased when sample does not represent the whole population. Therefore, one of the important aspects is to ensure that sample collected represents the whole population of interest. Keeping in mind the issue of representation of the total eligible population, a random sample was selected from students belonging to different regions of the country so as to reduce the representation bias in the data.

In positivist approach, the problem of non-response bias is common, which occurs when respondents differ in meaningful way from non-respondents (Churchill, 1979). Additionally, non-response can be due to unexpected refusal or ineligibility of sample responses, which can reduce the validity of sample data.

Potential non-response bias can be studied by different methods such as by examining and comparing the response rates across subgroups, response rate over time, and comparing correspondents and respondents across time (Groves, 2006; Lineback and Thompson, 2010). Any potential non-response bias can be assessed by undertaking specific tests such as comparing responses of the early (t1) and the late (t2) respondents (Armstrong and Overton, 1977), which can be done by Mann-Whitney-U-test (Kortmann, 2012).

Nevertheless, survey researchers such as Alreck and Settle (1995, p. 184) have suggested that it is important to reduce non-response as much as possible as well as encourage an adequate response rate. According to Babbie (2007), “50% response rate is considered adequate, 60% response rate is good and 70% response rate is very good for analysis and reporting. In the present study, the response rate from participants taking EEP courses (group 1) was very high i.e. about 82% and 83% at the pre-test (t1) and post-test (t2) respectively. Similarly, the response rate for participants Not taking EEP courses was 67% at both the pre-test (t1) and post-test (t2) respectively. Thus, given the high response in the present study, the researcher did not undertake any particular statistical tests for assessing the non-

response bias because the survey estimates are not altered due to changes in nonresponse rates (Groves, 2006).

5.7.2 Targeted Sample

After identification of HEIs that provide EEPS in Saudi Arabia, a random sample of final year students from three public and two private Saudi universities was selected. The main reasons for selecting these HEIs were that they offered entrepreneurship courses with excellent reputations for business and engineering fields and that large number of students were enrolled there.

The researcher considered a regional balance when selecting students in these institutions so as to cover almost all regions of the country. A random sample of students who were taught entrepreneurship courses was recruited and considered as the EEPs group (Group A) and a random sample of students who were not taking any entrepreneurship courses was also recruited and considered as the control group (Control B). The participating students were studying in the business, home economics, engineering, and industrial management fields. However, this study existed sample limitations because of the sample was based on a few selected public and private business and engineering schools in the country.

5.8 Data Collection

Data collection is one of the most vital parts of any research study (Sekaran, 2000). The researcher employed the self-administered survey method for data collection. A full research protocol was adopted; before collecting the data, proper permission was received from the authorities of the participating universities, after submitting official letters from the researcher's supervisor and from the vice-president of the researcher's university. After getting permission from the respective universities, the researcher contacted the teaching staff. After this, the

questionnaires were hand-delivered personally by the researcher to them at their offices. The questionnaires were then distributed with the help of the teaching staff to the selected classes at the beginning of the semester (Pre-test; April 2010) and at the end of the semester (Post-test; July 2010). The teaching staff instructed students to finish the questionnaires during class sessions and place them in a box at the reception desk located at the dean's office. The returned surveys were then handed over to the researcher by the deans' offices. The method employed was similar to that in the study conducted by Lee *et al.* (2006) and one of the objectives in choosing this method was to get a higher response rate from a sample of students (Ibid).

The students were provided with information and instructions in the covering letter approved and signed by the supervisor of the study. The letter briefly explained the purposes of the study, the voluntary nature of students' participation in the study and assurance that their views would not affect their grades. It was clearly explained to the students that the survey was for research purposes only and that the research intended to explore the effect of entrepreneurship education on university students' entrepreneurial attitudes and intentions. Before proceeding with distribution and completion of the survey questionnaire, the researcher verbally confirmed participants' willingness to take part in the study.

Survey questionnaires were used at two time intervals for the both groups of students. For the group of students who received the EEP course for their degree, at the pre-test time (t1), 632 students were found who had just joined EE course. The same survey questionnaires were distributed to all these students (n=632) at both the pre-test (t1) i.e. prior to the start of EEP course and at the post-test time (t2) i.e. after the completion of the EEPs (at the end of the course). For the group who did not choose EE course for their degrees, the researcher identified 312 students and data were collected for these students at both times i.e. pre-test (t1) and post-test (t2) i.e. before starting and after ending the semester, respectively.

The researcher faced several constraints while collecting data in this study. For instance, receiving approval from the universities to distribute questionnaires took

a long time. In addition, the wide geographic spread of the participating universities confined the researcher to collecting the surveys through personal visits. The participating HEIs were King Abdulaziz University (KAU) and University of Business and Technology (UBT) in the western region, King Saud University (KSU) in the central region, King Fahd University of Petroleum and Minerals (KFUPM), and Prince Mohammad Bin Fahd University (PMU) in the eastern region). Collecting the surveys at the two different time points from across the five universities located in different regions of the country took quite a long time. However, the response rate was above 60 per cent, which is satisfactory for the research. The researcher closed the survey 16 weeks after the first distribution of survey questionnaires.

5.8.1 Data Coding, Cleaning and Entry

The recording of data is concerned with transferring information from questionnaires or code sheets to computer files for processing purposes, using letters or numbers to represent responses. This way, findings from the data can be easily found. The researcher has to be sure to avoid errors during data processing; however, human error cannot be avoided. Thus, when there is a large amount of data, there is a greater probability of human error. However, data can be cleaned through double checking the data entries in the computer files.

In addition, before inferring the output of data, it is necessary to follow proper procedures to obtain accurate results. In view of this, after collection of all the completed survey questionnaires, responses to survey questions were coded for data entry into the Statistical Package for Social Sciences (SPSS) for Windows, version 19.0. Prior to entering the data, all the questionnaires returned by the respondents were strictly checked and filtered to ensure that the respondents met the research criteria: namely, the completion of at least one entrepreneurship course at the university. There was also a check for mismatched questionnaires, missing responses or incomplete questionnaires. This followed coding of

participants' responses to survey questions and then data were entered into SPSS. Thereafter, data were analysed as explained in the next section.

5.9 Data Analysis Techniques

Data analysis is a key step after the research design and data collection. For this purpose, the researcher used SPSS for Windows, version 19.0. The researcher analysed data in two stages: preliminary data analysis (descriptive analysis, exploratory factor analysis, correlations, multiple hierarchical regression and T-test) and hypotheses testing, which are explained below.

5.9.1 Descriptive Analysis

After completion of the data collection phase, the first part of the data analysis deals with the treatment of missing data, exploring descriptive statistics and examining outlier data, as well as tests for linearity, normality homoscedasticity, and reliability of data (Tabachnick and Fidell, 2007; Hair *et al.*, 2010). This part of the data analysis provides general information about the respondents and their responses and the procedure has been accredited by many scholars, like Field (2006) and Tabachnick and Fidell (2007). The descriptive statistics provide an overview of the sample and in descriptive statistics the mean and standard deviations are calculated to demonstrate the centrality and dispersion of variables. In this study, skewness and kurtosis tests and the Kolmogorov and Shapiro tests were conducted to assess the normality of data distribution (Field, 2006; Tabachnick and Fidell, 2007; Hair *et al.*, 2010).

5.9.2 Exploratory Factor Analysis

Before examining their hypotheses, a researcher must consider factor loading, which is a way of extracting variables into groups underlying latent factors.

Through this technique, information can be reduced for measurement of variables. According to Hair *et al.* (2010, p. 104), factor loading is a technique used for “take what the data gives you” and involves grouping variables together on a factor or a precise number of factors. This technique considers a set of new, latent composite factors that identify groups or clusters of items of variables, which can be used to further examining the measurement scales. Reducing the number of items for measurement scales has different purposes; Field (2006, p. 619) described factor analysis as being used to understand the structure of a set of variables, to construct a questionnaire to measure any underlying variables and, finally, to reduce a data set to a more manageable size while retaining as much of the original information as possible. However, researchers like Hair *et al.* (2010) define factor loading as having two purposes: specifying the unit of analysis, and summarising and reducing data. It is often used for the investigation of construct validity.

In quantitative data, factor analysis is important in looking for variables that correlate highly with a group of other variables. Different techniques are used to structure clusters of variable items and reduce the data.

Exploratory factor analysis (EFA) is one of the most important techniques that are applied for showing the relationship of question items with respective factors. This research applied exploratory factor analysis techniques to take data in groups for identify latent factors. For these tests, the researcher followed the literature and used Kaiser–Meyer–Olkin (KMO) and Barlett Test of Sphericity (BTS) tests. According to Tabachnick and Fidell (2007), a KMO value greater than 0.6 suggests statistical significance between the measurement variables and its suitability for factor loading to provide parsimonious sets of factors. Hair *et al.* (2010) recommend a BTS value higher than 0.3 acceptable for the EFA.

To assess the adequacy of extraction and the number of factors to be retained, the researcher used eigenvalues and scree plots. A component with an eigenvalue less than 1 is not important; however, factors with eigenvalues greater than 1 are significant. By applying the Principal Component Extraction method, this study

found the factors that had eigenvalues greater than 1. A scree plot is one of the criteria used to determine the number of factors. It is used to extract factors by plotting. According to Hair *et al.* (2010), a scree plot test is derived by plotting the latent roots against the number of factors in their order of extraction, and the shape of the resulting curve is used to evaluate the cut-off point. The shape of the plot should negatively decrease and it should look like an elbow shape. The eigenvalue is highest for the first factor and moderate but decreasing for the next few factors before reaching a small value for the last few factors (Tabachnick and Fidell, 2007, p. 644). Before this, communality was observed, which described the total amount of variance that the original variables share with all other variables included in the analysis. According to Field (2006, p. 630), a variable that has no specific variance (or random variance) has a communality of 1 and a variable that shares nothing with all other variables has a communality of 0. This study followed the literature and applied variables with communality values above 0.5 (Hair *et al.*, 2010).

After extracting the latent factors, it is important to know the degree of variable loaded onto these factors. The orthogonal rotation techniques, such as Varimax rotation, are very commonly used in rotation of measured items and are required when variables are independent means factor rotated. This method makes it very easy to describe, interpret and report results. Tabachnick and Fidell (2007, p.620) described that the goal of varimax rotation is to maximise the variance of factor loading by making high loadings higher and low ones lower for each factor. Factor loadings above ± 0.50 were considered practically significant (Hair *et al.*, 2010).

5.9.3 Correlations

After extracting the factors, the measurement of correlation between variables is important for co-relational studies where survey questionnaires are used to find out the relationships between the factors. Correlations refer to the relationships

between variables in terms of the levels among the variables. According to Hair *et al.* (2010), the implicit assumption of all multivariate techniques is based on identifying linearity through correlations, multiple regression, logistic regression, factor analysis and structural equation modelling. To examine the correlations of variables, researchers like Field (2006), Tabachnick and Fidell (2007) and Hair *et al.* (2010) have used Pearson's correlations r . The researcher used these correlations in this study. The values of a correlation coefficient range from 0 to 1 with its direction specified by a plus (+) sign or a minus (-) sign, indicating positive and negative relationships, respectively. Researchers like Pallant (2007, p. 132) provide guidelines for the range of correlation results as small (r values from .10 to .29), medium ($r = .30$ to .49) and large ($r = .50$ to 1.0).

5.9.4 Multiple Hierarchical Regression

Multiple regression is one of the multivariate statistical techniques used in this study to examine the relationship between EEPs and intentions toward being self-employed. The reason for selecting multiple regression was because it allows the investigation of the relationship between several independent variables and a dependent variable at the same time (Hair *et al.*, 1998; Pallant, 2007). Therefore, multiple regression was used to investigate the effects of the independent variables on the dependent variable. The multiple regression correlation coefficient (r) ranges between 0 and 1, represents the strength of the relationship (Hinton *et al.*, 2004). Meanwhile, r^2 represents the percentages of variance in the dependent variable that can be explained by the independent variables. Beta coefficients (β), on the other hand, allow the researcher to compare the relative importance of each independent variable. According to Field (2000), the larger the value of β coefficient of a predictor variable, the greater the importance of the variable in terms of explaining the dependent variable. A critical level of significance, a priori, at 0.05 was set as the benchmark for the accepted level for all the hypotheses developed in this study. This criterion was selected based on the proposal made by Burns (1997), who asserted that in education, a five per cent

level of significance is conventionally used to reject the null hypothesis. In rejecting or accepting the hypotheses developed in the study, the null hypothesis was rejected if the level of significance, the p value, was less than 0.05 and accepted if the p value was equal to or higher than 0.05.

5.9.5 Independent Sample T-test

Researchers also use independent-sample t-tests, which are important when the researcher use two time points for data collection from two groups of populations to compare and has to assess whether the differences between the mean of the population from which the sample is drawn is the same as the hypothesised mean. Using an independent sample t-test, the differences between the sample mean and the hypothesised mean can be determined by referring to the two-tailed significance. If the two-tailed significance was less than 0.05, then the difference between the two means was considered as significant (Hair *et al.*, 1998; Field, 2000).

5.10 Hypothesis Testing

Hypothesis testing is the final step in inferential data analysis. According to Sekaran (2003, p. 418), a hypothesis is “an educated conjecture about the logically developed relationship between two or more variables, expressed in the form of testable statements.” This study tested hypotheses by employing the methods suggested by Souitaris *et al.* (2007) as follows. First, correlation and regression tests were conducted to examine the relationships between the attitudes and intentions of university students before and after they had taken EEPs at the university level. Second, to measure the effects of the EEPs on the university students’ attitudes and intentions, the researcher conducted t-tests on the difference scores (of the total sample), with group membership (EEPs versus Control) as the independent variable. Finally, to examine the association between differences in attitudes and intentions and the predictor variables related to the

EEPs (learning from modules, learning inspiration and university incubation resources), the researcher used correlations and hierarchical regression. For the regression models, control and predictor variables were entered in consecutive steps and the variables were standardised, since the researcher employed a number of different scales.

5.11 Ethical Considerations

Research in which human subjects are involved requires adherence to ethical issues. In social science and business studies, ethical issues play an important role due to the usage of human subjects. Requirements like privacy, confidentiality, accuracy and informed consent throughout all phases of research are related to ethics. Many researchers support and explain that researchers must protect human rights, guide them and supervise the interests of people (Neuman, 1995). This should be considered in conducting research with human subjects. According to Sekaran (2000, p-260-261), the researcher's goals in protecting human rights should be as follows:

- i. To assure respondents that their information will be kept strictly confident.
- ii. To assure respondents that their personal information will not be solicited.
- iii. To assure respondents that their information will not be misrepresented or distorted during the study.
- iv. The researcher should clearly define the purpose of the study without any misrepresentation of the goals.
- v. The researcher should never violate the self-esteem and self-respect of the respondents.
- vi. The researcher should get consent prior to collecting of the data and should not force respondents to become a part of the survey.

For this research, all ethical requirements were followed throughout all phases of the research. Permission from the HEIs from which the data was collected was granted to the researcher. Through personal visits to these HEIs, the participants in this study were asked to participate voluntarily and there was no recording of

names or any other personal information that could reveal their identities. All participants were assured that the anonymity and confidentiality of their responses will be guaranteed.

In terms of ethical behaviour, the researcher observed Brunel University Ethics Committee guidelines and all issues in this study adhered to the expectations of the Ethics Committee. According to the Ethics Committee guidelines, a Brunel Business School Research Ethics Form must be signed by the researcher and followed by the research supervisor. Before going to collect data for this study, the Ethics form was signed by the researcher and the supervisor and submitted to the academic programme office. Moreover, a consent form was attached to the questionnaires, describing the title of the research study, the name of researcher and the school and university, the purpose of the research and what was involved in participation in a way that could be clearly understood by the respondents prior to their completion of the survey questionnaire (Appendix-1).

5.12 Summary

After the literature review, a conceptual framework was produced to link a set of variables and the hypotheses were developed. Examining these hypotheses needed a methodology; it is considered essential for a researcher to provide the rationale behind the selection of the research approach. This study explored two important research paradigms: the positivist approach that predicts phenomena in the social world to assess human attitudes and behaviours through quantitative values and the phenomenological approach also known as an inductive method of inquiry in which individuals know the subjective meanings of their experiences. From the methodological perspective, this study selected the quantitative paradigm with a survey instrument for data collection. This was supported by the literature and many researchers in the domain have applied a positivist approach. The selection of the right research approach depends upon the research itself, its nature, the research question(s) and the adopted research philosophy. Understanding individual behaviours and attitudes requires more contextually oriented study; this study therefore followed the positivist philosophy to investigate the students' attitudes and intentions as affected by EEPs. Given the importance of EEPs, a research design was formulated for processing of defined research problems, the context of the study, the procedures for data collection, the methods for data analysis and the ethical requirements.

The researcher selected samples of students i.e. 360 from the public and 270 from the private (n=270) HEIs in Saudi Arabia. For data collection, a survey instrument was adapted that consisted of the following sections: demographic background; occupational status choice (reasons to be an organisation's employee and reasons to be self-employed); learning from modules, learning from inspiration and university incubation resources; and start-up activities (nascency, business planning, financing the new firm and interacting with the external environment). All details relating to practical considerations (such as sampling, participation, measurement scales and data analysis procedures) were discussed in this chapter.

After data collection, the data were cleaned, coded and entered into SPSS (for Windows, v. 19.0). Analytical techniques including descriptive statistics and exploratory factor loading were conducted. This researcher tested the hypotheses by employing Pearson's correlations and multiple hierarchical regression tests. To measure the effects of the EEPs on the university students' attitudes and intentions, the researcher conducted t-tests on the difference scores (of the total sample), with group membership (EEPs Group versus Control Group) as the independent variable. The results of the data analysis are presented in the next chapter.

Chapter 6: Data Analysis

6.1 Introduction

This research examined the impact of EEPs provided by HEIs in Saudi Arabia on individuals' intentions and attitudes toward entrepreneurship. The aim of this study was to examine and confirm the factors that motivate Saudi students' attitudes and intentions toward becoming self-employed. The researcher attempted to test and confirm whether entrepreneurship education increased the students' intentions toward self-employment. The major objectives were: to explore the relationship between EEPs factors and students' intentions toward self-employment in the context of Saudi Arabia, to identify the EEPs variables that significantly affect students' intentions toward becoming self-employed, and to explore the interaction between the factors and students' educational preferences, as well as skills and competence acquisition tendencies. In order to achieve the main objectives of this study, the researcher collected primary data as described in the methodology chapter. The data collected was then screened, followed by exploratory factor analysis and hypothesis testing. Various statistical tools were used to analyse the data in the light of the given objectives and hypotheses. All of these activities are described in detail in this chapter.

Following a multi-stage procedure to infer results from the data, the researcher adapted a survey questionnaire, which was given to two groups. The first group, known as the EEPs or Treatment Group, consisted of participants who were engaged in taking entrepreneurship courses at degree level. The second group, known as the Control Group, consisted of students who were not taking any entrepreneurship courses during their studies. Data were collected at two different times: Pre-test (t1) (for both groups), when the students started their courses, and Post-test (t2) (for both groups), when students had finished their studies.

6.2 Data Collection Process

Following the conceptual framework and measurement scales, the researcher developed a questionnaire (Appendix-1) for collecting necessary data to investigate the proposed hypotheses of the study. After personally visiting three major public and two private universities in Saudi Arabia, the researcher distributed the survey questionnaires to the respondents. There were two main reasons for selecting these institutions. First, they were offering entrepreneurship courses with same content with excellent reputations for business and engineering and a large number of students was enrolled there. Second, they were selected in order to achieve a regional balance and to cover almost all regions of the country. The researcher considered both public and private HEIs, which included the King Abdulaziz University (KAU), Jeddah (west region of Saudi Arabia); King Saud University (KSU), Riyadh (middle region of Saudi Arabia); King Fahd University of Petroleum and Minerals (KFUPM), Dhahran (east region of Saudi Arabia); the University of Business and Technology (UBT), Jeddah (west region of Saudi Arabia); and Prince Mohammad Bin Fahd University (PMU), Dammam (east region of Saudi Arabia).

Before collecting the data, proper permission was granted by the authorities of the above mentioned five universities, after official letters from the vice-president of the researcher's university had been submitted (Appendix-1). After obtaining the permissions, a briefing session was organised for the respondents of the respective universities, lasting around 50 minutes each. After the briefing and clearing the doubts of the participants the questionnaires were distributed to them. Before issuing the survey questionnaires, the researcher confirmed the willingness of the participants, the voluntary nature of their participation and the fact their views would not affect their grades. This procedure lasted for four months, starting from the beginning of the semester in April 2010.

6.3 Data Screening

Before screening, the data was recorded with the support of coding (Appendix-2). To infer results, statisticians like Hair *et al.* (2010) suggested screening out the data in order to build confidence regarding the correctness of the data entered. The researcher also looked into the normal distribution of the variables and the accuracy of the data prior to investigating the responses. Regarding data screening, researchers like Tabachnick and Fidell (2007) and Hair *et al.* (2010) suggested addressing issues of any missing data, outliers, linearity, normality and homoscedasticity because all these issues affect the inference of true results for the relationships and outcomes of the variables. They stated that the main objective of data screening is to reveal what is not apparent and thereby facilitating the portrayal of the actual data.

6.3.1 Treatment of Missing Data

Missing data causes problems in data analysis and requires prior consideration. It can cause the results to deviate from the truth. Thus, dealing with missing data is essential and various ideas for dealing with missing data have been contributed. Hair *et al.* (2010, p. 42) identified that missing data is due to errors or failures in data entry. Missing data causes many problems, like reducing the sample size and causing large variance, which may also lead to bias and affect the generalisability of the results. In that situation, researchers like Stevens (1992) suggested applying the means of the scores on the variance. Norusis (1995) supported the idea of removing the respondents who have not given proper responses from the sample. However, Tabachnick and Fidell (2007, p. 63) suggested that if only a few data points (for example about 5 percent or less) are missing in a random pattern from a large data set, the problem is less serious and almost any procedure for handling missing values yields similar results.

Following the above, the researcher used the SPSS (19.0 version) software to find out the missing values. The results showed less than 5 percent missing data from the total data (Appendix-3) in all four types of data collected at the two different times. At the Pre-test (t1), 13 missing samples were found for the EEPs Group and 12 samples for the Control Group. Removal of the missing items resulted in 503 samples from the EEPs Group and 198 samples from the Control Group, which may not have caused problems with the results of the data analysis. At Post-test (t2), 15 missing samples were found for the EEPs Group and 11 for the Control Group. After removal of the missing items, the final figures were 508 samples for the EEPs Group at t2 and 198 samples for the Control Group at t2 (post-time), which may not have caused problems with the results of the data analysis.

6.3.2 Outliers

The concept of outliers in data analysis is a score that differs from the rest of the data. Three important types of outliers are described by Field (2006): univariate (a case of an intense value on a single variable), bivariate (a case of an intense value on two variables) and multivariate (a case of an intense value on three variables). Outliers cannot be categorically characterised as either beneficial or problematic but they can bias the mean and inflate the standard deviation (Field and Hole, 2003; Hair *et al.*, 2010). If outliers are located in a data set, the researcher must behave accordingly to ensure they have no effect on the statistical inferences.

In fact, outliers are distinct from other observations that can misrepresent statistical inferences or can affect the normality. Researchers like Hair *et al.* (2010, p.65) and Tabachnick and Fidell (2007, p. 73) described four reasons for the presence of outliers within data:

- i. Indirect data entry.
- ii. Failure to specify codes for missing values that might be treated as real data.

- iii. Entering observations that are not part of the population from which the sample was extracted.
- iv. Including observations from the population but where the distribution for the variable in the population has extreme values, rather than normal distribution.

In the literature, no accepted rule is available to detect outliers. However, a widely accepted rule of thumb is suggested by Hair *et al.* (2010, p. 70) states that if the standard score for a small sample (80 respondents or fewer) is +2.5 or beyond, or +3.0 for a large sample, standard deviations away from the mean are regarded as outliers.

Researchers have applied graphical methods for detecting univariate outliers. Mahalanobis distance D^2 case has been applied in research to detect multivariate outliers, as proposed by Tabachnick and Fidell (2007) and Hair *et al.* (2010), to confirm their effects on the objectives of a study.

At the Pre-test (t1), the researcher found six univariate outliers from the EEPs Group data and three cases from the Control Group data, which were marked with an asterisk with a number attached that represented the ID number of the case (Palled, 2005; Hair *et al.*, 2010). The researcher also confirmed the number of multivariate outliers by using Mahalanobis distance (D^2) tests (Tables 6.1 and 6.2). Thus, all cases that exceeded their limit i.e. standard scores $\geq \pm 2.5$ were declared as univariate outliers and D^2/df value >2.5 were identified as multivariate outliers according to literature (Hair *et al.*, 2010, p. 67). After deletion of these univariate and multivariate extreme (outliers) cases, the remaining data were valid and used for further investigation.

Table 6-1: Univariate and Multivariate Outlier for the EEPs Group at Pre-test

Univariate Outliers		Multivariate Outliers		
Case with standard values exceeding ± 2.5		Case with a value of D^2/df Greater than 2.5 (df = 14) ^a		
		Case	D^2	D^2/df
SECU	No cases	85	37.06	2.65
WOLO	No cases	179	41.97	2.99
SOEN	No cases	346	38.54	2.75
AVRE	No cases	354	41.92	2.99
CARE	430	430	43.88	3.13
ECOP	346, 436	436	45.9	3.28
CHAL	430, 346			
AUTO	85, 430, 354			
AUTH	No cases			
SERE	346, 354, 179			
PAPR	No cases			
SUNO	No cases			
PEBC	No cases			
OSCI	No cases			

a. Mahalanobis D^2 value based on the 14 variable perceptions.

Note: SECU = Security, WOLO = Workload, SOEN = Social environment, AVRE = Avoid responsibility, CARE = Career, ECOP = Economic opportunities, CHAL = Challenge, AUTO = Autonomy, AUTH = Authority, SERE = Self-realisation, PAPR = Participate in the whole process, SUNO = Subjective norms, PEBC = Perceived behavioural control and OSCI = Occupational status choice intention.

Table 6-2: Univariate and Multivariate Outlier for the Control Group at Pre-test

Univariate Outliers		Multivariate Outliers		
Case with standard values exceeding ± 2.5		Case with a value of D^2/df Greater than 2.5 (df = 14) ^a		
		Case	D^2	D^2/df
SECU	146	86	35.02	2.50
WOLO	146	146	36.70	2.62
SOEN	146, 149	149	40.87	2.92
AVRE	149			
CARE	No cases			
ECOP	No cases			
CHAL	No cases			
AUTO	86			
AUTH	No cases			
SERE	No cases			
PAPR	No cases			
SUNO	No cases			
PEBC	No cases			
OSCI	No cases			

a. Mahalanobis D^2 value based on the 14 variable perceptions.

Note: SECU = Security, WOLO = Workload, SOEN = Social environment, AVRE = Avoid responsibility, CARE = Career, ECOP = Economic opportunity, CHAL = Challenge, AUTO = Autonomy, AUTH = Authority, SERE = Self-realisation, PAPR = Participate in the whole process, SUNO = Subjective norms, PEBC = Perceived behavioural control and OSCI = Occupational status choice intention.

Similarly, at the Post-test (t2), the researcher found five univariate outliers from the EEPs Group data and four cases from the Control Group data, which were marked with an asterisk with a number attached that represented the ID number of the case (Palled, 2005; Hair *et al.*, 2010). The researcher also confirmed the

number of multivariate outliers by using the Mahalanobis distance (D^2) tests (Tables 6.3 and 6.4). Thus, all cases that exceeded their limit i.e. standard scores $\geq \pm 2.5$ were declared as univariate outliers and D^2/df value >2.5 were identified as multivariate outliers according to literature (Hair et al., 2010, p. 67). After deletion of these univariate and multivariate extreme (outliers) cases, the remaining data were valid and used for further investigation.

Overall, after taking out both the univariate and the multivariate outlier cases from the data, the researcher was left with 497 samples for the EEPs Group and 195 for the Control Group at Pre-test, and 503 for the EEPs Group and 194 for the Control Group at Post-test, which were used for further multivariate analyses, reported.

Table 6-3: Univariate and Multivariate Outlier for EEPs Group at Post-test

Univariate Outliers		Multivariate Outliers		
Case with standard values exceeding + 2.5		Case with a value of D^2/df Greater than 2.5 (df = 17) ^a		
		Case	D^2	D^2/df
SECU	No cases	369	45.81	2.69
WOLO	No cases	373	66.35	3.90
SOEN	No cases	404	66.87	3.93
AVRE	No cases	414	59.92	3.52
CARE	431	431	43.55	2.56
ECOP	431			
CHAL	404			
AUTO	No cases			
AUTH	414			
SERE	No cases			
PAPR	373, 369, 404			
SUNO	404			
PEBC	414			
OSCI	No cases			
LEMO	No cases			
INSP	431			
UPRI	No cases			

a. Mahalanobis D^2 value based on the 17 variable perceptions.

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

In addition, it is imperative to report that the researcher matched the participants both groups at the Pre-test with those of the Post-test.

For the EEPs Group, the researcher found six participants in the Pre-test data who did not participate at Post-test. At Post-test, the researcher found 12 respondents

who did not participate at Pre-test. Thus, these participants were excluded from data analysis in the study.

Table 6-4: Univariate and Multivariate Outlier for Control Group at Post-test

Univariate Outliers		Multivariate Outliers		
Case with standard values exceeding + 2.5		Case with a value of D^2/df Greater than 2.5 (df = 17) ^a		
		Case	D^2	D^2/df
SECU	No cases	141	45.37	2.67
WOLO	141, 144	116	55.67	3.27
SOEN	No cases	144	57.34	3.37
AVRE	144, 177	177	66.71	3.92
CARE	No cases			
ECOP	No cases			
CHAL	No cases			
AUTO	No cases			
AUTH	No cases			
SERE	No cases			
PAPR	No cases			
SUNO	No cases			
PEBC	No cases			
OSCI	116			
LEMO	116,114			
INSP	No cases			
UPRI	No cases			

a. Mahalanobis D^2 value based on the 17 variable perceptions.

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

For the Control Group, the researcher found 11 participants in the Pre-test data who did not participate at Post-test. At Post-test, the researcher found 10 participants who did not participate at Pre-test. Thus, these respondents were also not included in further analysis in the study.

Finally, the researcher was left with data from 491 participants for the EEPs Group at both the Pre-test and Post-test, and a total of 184 participants for the Control Group at both the Pre-test and Post-test. The following section deals with the normal distribution of the data.

6.3.3 Normality of Data

After eliminating the missing items and discovering the outliers from the data, the next step was to confirm the normal distribution of data. For this study, the researcher focused on the variation of and relationships between variables, which are fundamental for multivariate statistical analysis. According to Hair *et al.*, (2010, p.71), if the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid, as normality is required to use the F and t statistics. In statistical literature, normality of data can be inspected through Kurtosis and Skewness statistics and the Kolmogorov-Smirnov and Shapiro-Wilk method (Field, 2006; Tabachnick and Fidell, 2007; Hair *et al.*, 2010). Kurtosis and Skewness tests compare the data distribution and normal distribution. The Kurtosis test provides an indication of the height of the distribution, like its “peakness” or “flatness”, and the skewness test provides an indication of the balance and symmetry of the distribution. In this regard, Hair *et al.* (2010, pp. 71-73) stated that positive kurtosis values indicate peaked distribution, and negative kurtosis values suggest flatter distribution. For skewness, if the distribution has positively skewed values clustered to the left of the distribution at low values, which indicates positive skew. However, negative skewness values indicate negative skew with scores closer to the right at high values.

For the normality test, the researcher used SPSS and found all the variables to be reasonably normally distributed for the Pre-test (for both the EEPs Group and Control Group) and for Post-test (for both the EEPs Group and Control Group). At the Pre-test, the researcher found mixed responses for the EEPs Group and the Control Group. The researcher found the skewness values to be mostly negative and under the required limits; the kurtosis values were almost positive and under the required limits.

The data are considered normally distributed if the values of the skewness and kurtosis lie between -1 and +1. However many researchers considered skewness and kurtosis values within the range of ± 2 to be acceptable (Pallant, 2001; George

and Mallery, 2005; Terrell, 2012). Furthermore, researchers (like Tabachnick and Fidell, (2001) Field (2009), Hair et al.(2010) and Pallant (2011) have suggested that there is no need to examine normality of the data when the sample involved in the research is bigger than 200. They also argued that big sample are good reflection of the normal population without the need for normality tests which could be sensitive to high number of cases like 491 for the EEPs group in this study. Keeping in mind such suggestion and conclusions made by statisticians and researchers (Ibid), the researcher considered that the data in this research was not significantly deviated from normal distribution and hence met the normality assumption.

Tables (6.5, 6.6, 6.7 and 6.8) show the descriptive analysis of the EEPs and the Control Group at Pre-test and Post-test. In the outputs presented in Tables 6.5 and 6.6, all the variables at Pre-test were considered normal due to the skewness and kurtosis values. All the variables were slightly negatively skewed; however, the scores were not high enough to be considered non-normal. They ranged between -1.264 and .752 for EEPs Group and from -1.352 to .783 for Control Group. The range of kurtosis values was between -.234 and 1.85 for the EEPs Group and from -.103 to 1.891 for the Control Group. Tables 6.5 and 6.6 clearly demonstrated that data for EEPs and Control group were within the range of acceptable limits of normal distribution. For Post-test, the researcher found similar results, with mixed responses for the EEPs Group and the Control Group. In this test, the skewness values were found to be mostly negative and within the required limits and the kurtosis values were almost positive and within the required limits. From the outputs shown in Tables (6.7 and 6.8) at Post-test, all the variables were considered normal due to the skewness and kurtosis values. Again, all the variables were slightly negatively skewed; however, the scores were not high enough to be considered non-normal, ranging between -1.219 and .839 for EEPs Group and from -1.136 to .851 for the Control Group. On the other hand, at Post-test, the kurtosis values ranged between -1.000 and 2.193 for the EEPs Group and from -1.558 to 1.131 for the Control Group.

Tables 6-5, 6-6, 6-7 and 6-8 provides the descriptive statistics for 14 summated variables / constructs for the EEP group at pre-test, control group at pre-test, EEP group at post-test, control group at post-test respectively. These summated variables were created by summation of participants' scores for all measured items for each of these constructs / summated variables. All extreme univariate outliers and multivariate outliers were identified and excluded from further data analysis. The z-values (static values) for skewness and kurtosis were calculated

using the suggested formulae i.e. $\frac{Skewness}{\frac{\sqrt{6}}{n}}$ and $\frac{Kurtosis}{\frac{\sqrt{24}}{n}}$ for skewness and kurtosis, respectively, suggested by Hair et al. (2010, pp. 72-73), which showed that z-values for skewness or kurtosis for some of the summated variables exceeded the limit of ± 2.58 values (sig level $p=.01$) suggesting deviation from the perfect (100%) normality. However, Hair et al. (2010, p. 72) have suggested that in the case of larger sample size i.e. ≥ 200 , the effect of departure from normality is negligible. It is imperative to note that the sample size was 490 in the present study and the extreme outliers both univariate and multivariate were identified and excluded from data analysis. In addition, Hair et al, (2010, p. 67) have suggested that "The researchers must refrain from designating too many observations as outliers and not succumb to the temptation of eliminating those cases not consistent with the remaining cases just because they are different".

The researcher identified and removed extreme univariate and multivariate outliers for both groups of participants at pre-test and post-test, as per above mentioned suggestions by Hair et al (2010). In addition, as suggested by Field (2009, pp. 144-148) and Hair et al. (2010, p.73), data normality was checked with the Kolmogorov-Smirnov test and Shapiro-Wilks test (Appendix-5). Based on the above actions and remedies, the researcher was content that the data did not significantly deviated from assumptions of normal distribution. It is however stated that after the EFA, the researcher created another set of summated variables based on the factor loadings in the EFA or checking data normality of the identified latent variables / constructs.

Table 6-5: Descriptive Statistics for EEPs Group at Pre-test

Constructs	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SECU	491	2.00	10.00	8.3401	1.58835	-1.021	.110	1.223	.220
WOLO	491	5.00	25.00	17.4318	4.00675	-.439	.110	.181	.220
SOEN	491	2.00	10.00	7.6986	2.04210	-.920	.110	.231	.220
AVRE	491	3.00	15.00	10.0848	2.78732	-.389	.110	-.234	.220
CARE	491	2.00	10.00	7.9287	2.21060	-.974	.110	.057	.220
ECOP	491	3.00	15.00	12.1527	2.44847	-.964	.110	.940	.220
CHAL	491	4.00	20.00	16.3035	2.88267	-1.137	.110	1.854	.220
AUTO	491	4.00	20.00	16.7454	3.07431	-1.117	.110	1.297	.220
AUTH	491	2.00	10.00	7.5927	1.91052	-.801	.110	.348	.220
SERE	491	4.00	20.00	16.5112	3.37236	-1.264	.110	1.274	.220
PAPR	491	2.00	10.00	7.9898	1.62314	-.717	.110	.316	.220
SUNO	491	6.00	30.00	21.5784	4.33018	-.65	.110	.714	.220
PEBC	491	8.00	29.00	15.5988	4.71904	.752	.110	-.130	.220
OSCI	491	3.00	15.00	10.8147	2.83280	-.863	.110	.070	.220

Valid N: 491 (list wise)

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunities, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control and **OSCI**= Occupational status choice intention.

Table 6-6: Descriptive Statistics for Control Group at Pre-test

Constructs	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SECU	184	2.00	10.00	7.8478	2.25643	-1.142	.179	.633	.356
WOLO	184	5.00	25.00	18.1902	4.19103	-.544	.179	.484	.356
SOEN	184	2.00	10.00	7.9543	2.07738	-.910	.179	.372	.356
AVRE	184	3.00	15.00	9.9891	2.81096	-.665	.179	.353	.356
CARE	184	2.00	10.00	7.8152	2.28767	-.991	.179	.183	.356
ECOP	184	3.00	15.00	12.3043	2.73907	-1.352	.179	1.891	.356
CHAL	184	4.00	20.00	15.4674	3.62731	-.782	.179	.133	.356
AUTO	184	5.00	20.00	16.0707	3.61998	-.991	.179	.665	.356
AUTH	184	2.00	10.00	7.0815	2.46481	-.626	.179	-.735	.356
SERE	184	6.00	20.00	16.9511	2.97031	-.992	.179	.732	.356
PAPR	184	3.00	10.00	7.7228	1.86844	-.698	.179	-.138	.356
SUNO	184	9.00	30.00	21.1250	4.51235	-.425	.179	-.059	.356
PEBC	184	7.00	30.00	15.6304	4.88271	.783	.179	-.086	.356
OSCI	184	3.00	15.00	8.9402	3.27963	-.023	.179	-1.103	.356

Valid N: 184 (list wise)

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunities, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control and **OSCI**= Occupational status choice intention.

Table 6-7: Skewness and Kurtosis Values for EEPs Group at Post-test

Constructs	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SECU	491	2.00	10.00	8.3890	1.71589	-1.174	.110	1.251	.220
WOLO	491	5.00	25.00	17.4235	4.34151	-.438	.110	.183	.220
SOEN	491	2.00	10.00	8.0509	1.74597	-.912	.110	.599	.220
AVRE	491	3.00	15.00	10.3259	2.67103	-.368	.110	.102	.220
CARE	491	2.00	10.00	8.0428	2.09961	-1.080	.110	.520	.220
ECOP	491	3.00	15.00	12.4216	2.36459	-1.000	.110	1.084	.220
CHAL	491	4.00	20.00	16.8004	2.88573	-1.181	.110	2.193	.220
AUTO	491	7.00	20.00	16.9939	2.79832	-.852	.110	.388	.220
AUTH	491	2.00	10.00	7.9491	1.73071	-.758	.110	.455	.220
SERE	491	4.00	20.00	17.3646	2.69835	-1.219	.110	1.828	.220
PAPR	491	2.00	10.00	8.0855	1.70857	-.927	.110	.922	.220
SUNO	491	6.00	30.00	21.5988	4.80560	-.709	.110	.923	.220
PEBC	491	8.00	29.00	15.7413	4.54190	.839	.110	.314	.220
OSCI	491	3.00	15.00	11.0285	2.77511	-1.013	.110	.886	.220
LEMO	491	5.00	25.00	19.2057	4.25086	-.772	.110	.386	.220
INSP	491	2.00	10.00	6.8941	2.28325	-.601	.110	-1.000	.220
UPRI	491	12.00	60.00	35.1466	9.20220	-.100	.110	-.169	.220

Valid N: 491 (list wise)

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

Table 6-8: Skewness and Kurtosis Values for Control Group at Post-test

Constructs	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
							Statistic	Std. Error	Statistic
SECU	184	2.00	10.00	7.1304	2.37343	-.630	.179	-.605	.356
WOLO	184	5.00	25.00	17.8152	4.31525	-.551	.179	.244	.356
SOEN	184	2.00	10.00	7.4728	2.09848	-.776	.179	1.131	.356
AVRE	184	3.00	15.00	10.2609	2.66682	-.951	.179	.839	.356
CARE	184	2.00	10.00	7.6685	2.13580	-.795	.179	.126	.356
ECOP	184	3.00	15.00	11.9891	3.03529	-1.136	.179	.829	.356
CHAL	184	6.00	20.00	16.2880	3.12380	-.666	.179	.161	.356
AUTO	184	5.00	20.00	15.3533	3.42925	-.541	.179	-.334	.356
AUTH	184	2.00	10.00	7.5815	1.97079	-.878	.179	.635	.356
SERE	184	5.00	20.00	15.9946	3.42523	-.713	.179	-.031	.356
PAPR	184	2.00	10.00	7.1196	2.20453	-.562	.179	-.361	.356
SUNO	184	9.00	30.00	21.1250	4.50023	-.427	.179	-.119	.356
PEBC	184	8.00	29.00	15.9511	5.06815	.851	.179	-.220	.356
OSCI	184	3.00	15.00	10.9076	2.88337	-.982	.179	.547	.356
LEMO	184	5.00	25.00	16.8696	5.11233	-.627	.179	-.130	.356
INSP	184	2.00	10.00	6.2880	2.53471	-.149	.179	-1.535	.356
UPRI	184	12.00	57.00	33.6033	8.37836	.379	.179	-1.558	.356

Valid N: 184 (list wise)

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources

6.3.4 Linearity

Linearity refers to the correlations between variables, knowledge of which is essential to know the levels of the relationships among the variables. According to Hair *et al.* (2010, p.71), an implicit assumption of all multivariate techniques based on co-relational measures of association (including multiple regression, logistic regression, factor analysis and structural equation modelling) is the linearity. To examine the linearity of variables, researchers like Field (2006), Tabachnick and Fidell (2007) and Hair *et al.* (2010) proposed using the Pearson's correlations.

To test the linearity of the relationships between the variables, this researcher calculated the Pearson's correlations and found the majority of variables to be significantly positively correlated with each other (Tables 6.9, 6.10, 6.11 and 6.12). Thus, the results indicated that all the variables were likely linear to one another.

Table 6-9: Linearity Test (Pearson’s Correlations) for EEPs Group at Pre-test

	SECU	WOLO	SOEN	AVRE	CARE	ECOP	CHAL	AUTO	AUTH	SERE	PAPR	SUNO	PEBC	OSCI
SECU	1	.383**	.283**	.296**	.217**	.212**	.149**	.226**	.068	.193**	.195**	.140**	.026	.137**
WOLO		1	.263**	.491**	.159**	.148**	.141**	.275**	.110*	.152**	.129**	.195**	-.006	.082
SOEN			1	.222**	.246**	.132**	.178**	.156**	.113*	.156**	.133**	.089*	-.100*	.141**
AVRE				1	.052	.047	.080	.250**	.101*	.161**	.077	.150**	.032	.034
CARE					1	.263**	.160**	.225**	.108*	.245**	.154**	.133**	-.059	.064
ECOP						1	.481**	.441**	.272**	.452**	.332**	.207**	.155**	.217**
CHAL							1	.466**	.253**	.407**	.302**	.231**	.130**	.175**
AUTO								1	.320**	.417**	.393**	.266**	.153**	.177**
AUTH									1	.316**	.186**	.149**	.049	.068
SERE										1	.314**	.240**	.133**	.156**
PAPR											1	.270**	.147**	.181**
SUNO												1	.204**	.352**
PEBC													1	.132**
OSCI														1

** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunities, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control and **OSCI** = Occupational status choice intention.

Table 6-10: Linearity Test (Pearson’s Correlations) for Control Group at Pre-test

	SECU	WOLO	SOEN	AVRE	CARE	ECOP	CHAL	AUTO	AUTH	SERE	PAPR	SUNO	PEBC	OSCI
SECU	1	.199**	.147*	.058	.097	.015	.329**	-.063	.222**	.001	-.070	.046	-.073	.225**
WOLO		1	.358**	.415**	.134	.277**	.124	.059	-.013	.047	-.132	.141	.076	.093
SOEN			1	.220**	.162*	.233**	.320**	.215**	.224**	.163*	-.007	.111	-.009	.255**
AVRE				1	.081	.100	-.026	-.036	.042	.028	-.086	.169*	.180*	.044
CARE					1	.297**	.025	.034	-.030	.052	.079	.157*	.054	.194**
ECOP						1	.201**	.244**	.069	.287**	.175*	.117	.071	.186*
CHAL							1	.264**	.389**	.405**	.300**	.240**	.020	.282**
AUTO								1	.253**	.384**	.310**	.208**	-.060	.160*
AUTH									1	.101	.052	.137	-.020	.201**
SERE										1	.498**	.249**	.020	.067
PAPR											1	.286**	.138	.088
SUNO												1	.247**	.098
PEBC													1	-.115
OSCI														1

** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).

Note: SECU = Security, WOLO = Workload, SOEN = Social environment, AVRE = Avoid responsibility, CARE = Career, ECOP = Economic opportunities, CHAL = Challenge, AUTO = Autonomy, AUTH = Authority, SERE = Self-realisation, PAPR = Participate in the whole process, SUNO = Subjective norms, PEBC = Perceived behavioural control and OSCI = Occupational status choice intention.

Table 6-11: Linearity Test (Pearson’s Correlations) for EEPs Group at Post-test

	SECU	WOLO	SOEN	AVRE	CARE	ECOP	CHAL	AUTO	AUTH	SERE	PAPR	SUNO	PEBC	OSCI	LEMO	INSP	UPRI
SECU	1	.415**	.442**	.288**	.336**	.248**	.169**	.225**	.143**	.241**	.147**	.184**	.038	.195**	.175**	.054	.077
WOLO		1	.378**	.578**	.133**	.163**	.056	.178**	.139**	.131**	.069	.152**	.045	.092*	.043	-.020	.077
SOEN			1	.220**	.498**	.265**	.194**	.226**	.195**	.265**	.272**	.229**	.037	.199**	.130**	.073	.096*
AVRE				1	.125**	.051	.051	.251**	.150**	.097*	.046	.152**	.057	.144**	.064	.046	.070
CARE					1	.266**	.208**	.158**	.125**	.153**	.092*	.113*	.022	.151**	.125**	.089*	.016
ECOP						1	.598**	.345**	.331**	.477**	.411**	.235**	.217**	.260**	.216**	.202**	.105*
CHAL							1	.457**	.414**	.594**	.426**	.330**	.257**	.268**	.267**	.234**	.085
AUTO								1	.605**	.524**	.426**	.322**	.092*	.251**	.146**	.145**	.106*
AUTH									1	.433**	.375**	.314**	.130**	.161**	.091*	.083	.085
SERE										1	.466**	.338**	.224**	.259**	.195**	.180**	.037
PAPR											1	.276**	.130**	.285**	.192**	.136**	.151**
SUNO												1	.221**	.308**	.216**	.192**	.263**
PEBC													1	.258**	.149**	.175**	.113*
OSCI														1	.169**	.242**	.224**
LEMO															1	.515**	.369**
INSP																1	.283**
UPRE																	1

** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

Table 6-12: Linearity Test (Pearson’s Correlations) for Control Group at Post-test

	SECU	WOLO	SOEN	AVRE	CARE	ECOP	CHAL	AUTO	AUTH	SERE	PAPR	SUNO	PEBC	OSCI	LEMO	INSP	UPRI
SECU	1	.125	.195**	-.056	.009	-.038	.061	.092	.039	.212**	.217**	.088	-.016	-.037	-.043	-.045	.111
WOLO		1	.293**	.427**	.288**	.192**	.029	.130	.027	-.043	.064	.106	.009	.094	.145*	.038	.248**
SOEN			1	.202**	.302**	.133	.259**	.267**	.138	.271**	.122	.254**	-.053	.125	.060	.094	.329**
AVRE				1	.306**	.193**	-.070	.084	.055	-.057	.013	.095	.054	.083	.146*	.111	.294**
CARE					1	.362**	.119	.101	.099	.157*	-.010	.079	.065	.224**	-.050	.041	.161*
ECOP						1	.269**	.204**	.291**	.171*	.008	.140	-.009	.212**	.081	.109	.162*
CHAL							1	.376**	.447**	.571**	.249**	.252**	.007	.284**	.234**	.263**	.110
AUTO								1	.284**	.326**	.101	.236**	-.002	.132	.147*	.142	.137
AUTH									1	.342**	.029	.263**	.020	.164*	.122	.206**	.095
SERE										1	.261**	.313**	.019	.209**	.132	.188*	-.010
PAPR											1	.195**	.171*	.136	.101	.134	.021
SUNO												1	.344**	.238**	.264**	.199**	.283**
PEBC													1	-.033	.220**	.236**	.145*
OSCI														1	-.009	.060	-.016
LEMO															1	.526**	.430**
INSP																1	.346**
UPRI																	1

** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).

Note: SECU = Security, WOLO= Workload, SOEN = Social environment, AVRE = Avoid Responsibility, CARE = Career, ECOP = Economic opportunities, CHAL = Challenge, AUTO = Autonomy, AUTH = Authority, SERE = Self-realisation, PAPR = Participate in the whole process, SUNO = Subjective norms, PEBC = Perceived behavioural control and OSCI = Occupational status choice intention.

6.3.5 Homoscedasticity

Homoscedasticity is the assumption of normality related to the supposition that dependent variable(s) display equal variance across a number of independent variables (Hair *et al.*, 2010, p. 74). According to Field (2006), in multiple regression analysis, the variance of dependent variables with independent variables should be constant. However, other statisticians, like Tabachnick and Fidell (2007), defined it as variability in scores for one variable that is roughly the same as the variability of all other variables. If the same variability of variables does not occur, this is known as heteroscedasticity, which can cause serious problems in the multivariate analysis (Hair *et al.*, 2010). Researchers have demonstrated that it can be because of the presence of non-normality or higher errors of measurement at some level (Tabachnick and Fidell, 2007; Hair *et al.*, 2010).

This kind of investigation can be done by using the Levene's test for homogeneity of variance. This test can confirm the results of the variability of dependent variables with independent variables.

In this study, results of the Levene's test revealed higher values than the minimum significant values ($p < 0.05$) (Appendix-5), except for the AUTO, AUTH, PAPR and SUNO variable sat the Pre-test for Group A. The results suggested presence of equal variance across the groups for males and females. However, this test is considered sensitive to the sample size, like the Kolmogorov-Smirnov and Shapiro-Wilks tests (Field, 2006, p.98). Thus, a few results that are less than the minimum significant value ($p < 0.05$) do not cause problems for the data.

6.4 Sample Characteristics of the Respondents

For the purpose of this study, three major public and two private universities of Saudi Arabia were selected. The main reasons for selecting these HEIs were that they offer entrepreneurship courses that contain the same content for EEP and have excellent reputation for business and engineering disciplines and that a large number of students are enrolled there. The chosen universities have students almost across all regions of Saudi Arabia, in order to have a regional balance. The students who were taught entrepreneurship courses were considered as the EEPs Group and the students who did not choose any of the entrepreneurship courses were named as the Control Group.

6.4.1 Descriptive Statistics

The researcher used a survey questionnaire at two time intervals i.e. t1 (pre-test) and t2 (post –test). At Pre-test, a questionnaire was distributed among 632 students who had just joined EEPs course and were undergoing their semester (at the beginning of the course), known as the EEPs Group. A questionnaire was distributed at the Post-test to the same 632 students as they were about to complete the EEPs at the end of their semester (at the end of the course). Out of 632 questionnaires distributed, the researcher collected 516 questionnaires from the EEPs Group at Pre-test and 523 at Post-test, with response rates of 81.6 percent and 82.7%, respectively. The researcher discarded 13 questionnaires from pre-test and 15 from post-test because they were incomplete and missing relevant data. The researcher also found six outliers from Pre-test and five from Post-test for the EEPs group. A total of six mismatched surveys were found from Pre-test and 12 from Post-test for the same group. Finally, 491 samples were selected at each time i.e. t1 (pre-test) and t2 (post-test) for the EEPs group.

The descriptive statistics in Table 6.13 show that the majority (267) of the EEPs respondents were male (54%) and most of them (293) were aged between 20 and 25 (80%).

Table 6-13: Descriptive Statistics of Participants (EEPs Group)

<i>Variables</i>	<i>Category</i>	Pre-test		Post-test	
		<i>Frequencies (n)</i>	<i>Valid %</i>	<i>Frequencies (n)</i>	<i>Valid %</i>
Father's Occupation	Govt. /Private Sector	319	65.0	313	63.8
	Self-Employment	148	30.1	147	29.9
	Unemployed	24	4.9	31	6.3
Total		491	100	491	100
Mother's Occupation	Govt. /Private Sector	140	28.5	128	26.1
	Self - Employment	57	11.6	57	11.6
	Housewife	294	59.9	306	62.3
Total		491	100	491	100
Pre-employed	YES	00	00	00	00
	NO	491	100	491	100
Total		491	100	491	100
Institutions	KAU	151	30.8	151	30.8
	KSU	139	28.3	139	28.3
	KFUPM	83	16.9	83	16.9
	CBA	64	13.0	64	13.0
	PMU	54	11.0	54	11.0
Total		491	100	491	100
Sex	Male	267	54.4	267	54.4
	Female	224	45.6	224	45.6
Total		491	100	491	100
Age	Less than 20 years	55	11.2	55	11.2
	20 to 25 years	393	80.0	379	77.2
	More than 25 years	43	8.8	57	11.6
Total		491	100	491	100
College	Engineering	64	13.0	64	13.0
	Business Admin	255	52.0	255	52.0
	Home Economics	89	18.1	89	18.1
	Industrial Management	83	16.9	83	16.9
Total		491	100	491	100
Qualifications	B.S	460	93.7	460	93.7
	M.S	31	6.3	31	6.3
Total		491	100	491	100
Course Type	Entrepreneurship Course	491	100	491	100
Total		491	100	491	100
Course Selection	Compulsory	491	100	491	100
Total		491	100	491	100
Entrepreneurship Training	None	491	100	491	100
Total		491	100	491	100

At Post-test, the same results were shown, even though there was a small difference in ages. At Post-test (EEPs), there were 379 (77%) respondents aged between 20 and 25. The majority (255; 52%) of the participants were from economics and administration colleges. Most of the EEPs respondents' (65%) fathers were working in the government or private sectors at Pre-test and 64 percent at Post-test. The changes occurred on account of the retirement of some of them. Most of the EEPs respondents' (294; 60 percent at Pre-test and 306; 62 percent at Post-test) mothers were homemakers.

According to the sample characteristics, 460 participants were qualified to the graduate level. Thus, the majority of the respondents had bachelor's degrees (93.7%) and had not been previously employed. This group consisted of only those students who had chosen entrepreneurship as a compulsory subject.

The researcher also collected data from students who did not take any entrepreneurship courses in their studies, known as the Control Group. At Pre-test, a questionnaire was distributed at the beginning of the semester to 312 students who were not taking an entrepreneurship course. The questionnaire was distributed to the same students at Post-test, at the end of the semester. Of the 312 questionnaires distributed, the researcher collected 210 from Pre-test and 209 from Post-test, with a response rate of about 67 percent at both times. The researcher rejected 12 questionnaires from Pre-test and 11 from Post-test due to incomplete or missing data. The researcher also found three cases as outliers from Pre-test and four from Post-test. In addition, 11 mismatched surveys were found from Post-test and 10 mismatched surveys from Pre-test. These samples were taken out from the main study. The descriptive statistics for the Control Group at Pre-test and Post-test are shown in Table 6.14

Finally, 184 Control Group participants were selected for the study at both Pre-test and Post-test. The descriptive statistics showed that the majority of the respondents were male (126; 68.5%) and aged between 20 and 25. However, at Post-test some of the students' ages went up to the next range; thereby, 15 students became greater than 25 years old and the number changed to 127 (69%).

Table 6-14: Descriptive Statistics of Participants (Control Group)

<i>Variables</i>	<i>Category</i>	Pre Pre-test		Post Post-test	
		<i>Frequencies (n)</i>	<i>Valid %</i>	<i>Frequencies (n)</i>	<i>Valid %</i>
Father's Occupation	Govt. /Private Sector	125	67.9	118	64.1
	Self- Employment	52	28.3	52	28.3
	Unemployed	07	3.8	14	7.6
Total		184	100	184	100
Mother's Occupation	Govt. /Private Sector	51	27.7	40	21.7
	Self- Employment	15	8.2	15	8.2
	Housewife	118	64.1	129	70.1
Total		184	100	184	100
Pre-employed	YES	00	00	00	00
	NO	184	100	184	100
Total		184	100	184	100
Institutions	KAU	47	25.54	47	25.54
	KSU	43	23.37	43	23.37
	KFUPM	34	18.48	34	18.48
	CBA	31	16.85	31	16.85
	PMU	29	15.76	29	15.76
Total		184	100	184	100
Sex	Male	126	68.5	126	68.5
	Female	58	31.5	58	31.5
Total		184	100	184	100
Age	Less than 20 years	23	12.5	23	12.5
	20 to 25 years	142	77.2	127	69.0
	More than 25 years	19	10.3	34	18.5
Total		184	100	184	100
College	Engineering	60	32.60	60	32.60
	Business Admin.	57	30.98	57	30.98
	Home Economics	33	17.94	33	17.94
	Industrial Management	34	18.48	34	18.48
Total		184	100	184	100
Qualifications	B.S	170	92.4	170	92.4
	M.S	14	7.6	14	7.6
Total		184	100	184	100
Course Type	Others	184	100	184	100
Total		184	100	184	100
Course Selection	Compulsory	184	100	184	100
Total		184	100	184	100
Entrepreneurship Training	None	184	100	184	100
Total		184	100	184	100

The majority of the participants were from engineering colleges (60; 32.6%). Most of the respondents' fathers were employed in government or private-sector organisations. However, at Post-test this number decreased due to the retirement

of some fathers. A corresponding increase can be noted in the unemployed category, which increased to 14 (7.6%) at Post-test. The respondents' mothers were mostly housewives (118; 64.1 % at Pre-test). At Post-test, the number of the respondents' mothers that were housewives increased to 129 (70.1%).

The majority of the participants had bachelor's degrees (170; 92.4%) and had not been previously self-employed.

6.5 Reliability and Validity

Testing for reliability and validity is one of the most important tests in research. Such tests are used to evaluate the consistency between measurement items and to make sure that the situation of interest is represented realistically.

Before exploring the inferential statistics in this study, it was necessary to know how the participants' responses to the questionnaire items related to the measurements presented in the conceptual framework. This examination of the measurements was needed to include psychometric properties, in order to explore the reliability and validity of the questionnaire (Churchill, 1979).

Reliability is concerned with the credibility of the data collected. The main purpose of reliability testing is to focus on the accuracy of the measurements and the ability to repeat the research with the same results if the same procedure is adopted. Robinson *et al.* (1991) and Hair *et al.* (2010) described the two most common purposes of reliability testing. First, it estimates the consistency between measurement items for measuring a variable. Second, it shows whether the same correlations would be found if the same procedure were adopted at two different times. Generally, reliability facilitates the accuracy, avoidance of bias and consistency of measures relating to the replication of measurement instruments within different samples. Reliability can be measured by the Cronbach's coefficient alpha method, which is the most efficient way to calculate the internal

consistency of all items of variables / constructs / factors. It is the easiest way to calculate the reliability, according to well-known researchers like Cronbach (1951) and Tabachnick and Fidell (2007). This researcher calculated Cronbach's alpha values to calculate the reliability. Its lower limit coefficient was 0.7, but in some cases it was acceptable at 0.6 levels (Robinson *et al.*, 1991; Sekaran, 2000).

By applying the reliability test using SPSS software, the researcher found that the items highly correlated with their respective variables. Data for the EEPs Group from Pre-test and Post-test are shown in Tables 6.15 and 6.16, respectively. The reliability for all the variables for the EEPs Group was above .7 and their range was from .70 to .87 for Pre-test and from .72 to .90 for Post-test, which showed a high internal consistency of the items of the variables.

The results from the Control Group at Pre-test and Post-test are shown in Tables 6.15 and 6.16, respectively. The reliability of all variables was above .7. The range for Pre-test's reliability ranged from .76 to .91 and the range for Post-test was from .70 to .92, which confirmed a high internal consistency of the items of the variables.

The validity of measurement scales refers to the real representation of the concept. It is important to know the validity of measurement scales before inferring results because it confirms the concepts already identified. In business and social science research, two methods of verification are generally adopted: internal and external. According to Reige (2003), internal validity develops a phenomenon and establishes confidence, through which it concludes real-life experiences. The generalisability of the findings supports the external validity.

The replication approach is suitable for measuring validity whereby researchers can test more than one theory at a time and the results should be the same (Lincoln and Guba, 1985; Yin, 1994). However, when experiments occur in different contexts, the results may not be the same and the validity of the questionnaire is put at risk.

Table 6-15: Cronbach's Alpha Reliability for EEPs & Control Group at Pre-test

S. No.	Variables	Cronbach Alpha EEPs Group Pre-test	Cronbach Alpha Control Group Pre-test
1	SECU	.76	.88
2	WOLO	.79	.85
3	SOEN	.81	.84
4	AVRE	.79	.76
5	CARE	.84	.91
6	ECOP	.77	.87
7	CHAL	.81	.89
8	AUTO	.83	.88
9	AUTH	.75	.88
10	SERE	.87	.86
11	PAPR	.70	.84
12	SUNO	.77	.79
13	PEBC	.74	.81
14	OSCI	.76	.79

Table 6-16: Cronbach's Alpha Reliability for EEPs & Control Group at Post-test

S. No.	Variables	Cronbach Alpha EEPs Group Pre-test	Cronbach Alpha Control Group Pre-test
1	SECU	.90	.87
2	WOLO	.85	.83
3	SOEN	.80	.85
4	AVRE	.79	.73
5	CARE	.90	.87
6	ECOP	.87	.92
7	CHAL	.85	.87
8	AUTO	.81	.84
9	AUTH	.78	.74
10	SERE	.85	.89
11	PAPR	.82	.87
12	SUNO	.84	.84
13	PEBC	.75	.82
14	OSCI	.73	.73
15	LEMO	.86	.86
16	INSP	.84	.88
17	UPRI	.86	.86
18	STUB	.74	.70
19	BUSP	.83	.83
20	FINF	.72	.72
21	INEE	.87	.87

The researcher used two ways to assess the validity of the data in this study, as described by Belson (1986). According to Belson (1986), the first respondent who completed the questionnaire did so accurately and the second sample who failed

to return their questionnaires would have given the same distribution of answers as the returnees.

6.6 Factor Analysis

Factor analysis is a multivariate statistical technique that is applied to reduce the information in the measurement of variables in the form of items. This technique undertakes a set of new composited factors (latent variables) that identify groups or clusters of items of variables, which can be used to further examining the measurement scales. Reducing the number of items for measurement scales has different purposes for example Field (2006, p. 619) described that factor analysis is used to understand the structure of a set of variables and to construct a questionnaire to measure any underlying variables. He also described that factor analysis is used to reduce a data set into a more manageable size while retaining as much of the original information as possible. Hair *et al.* (2010) defined two purposes of factor analysis: to specify the unit of analysis and to summarise and reduce data.

With quantitative data, factor analysis can be achieved by looking for variables that correlate highly with a group of other variables but do not correlate with variables outside that group. It provides a tool to analyse the structure of the interrelationships among a large number of variables by defining sets of variables that are highly interrelated (Hair *et al.*, 2010, p.94). Different techniques are used to structure clusters of variables and to reduce data. Exploratory factor analysis (EFA) is one of the most important techniques that are applied for taking what the data is provided. This researcher applied the EFA techniques to confirm the group of measurement variables related to the factors. By using the SPSS software, this study explored the factor loading through the EFA, described in the next section.

6.6.1 Exploratory Factor Analysis

Numerous procedures are available for factor extraction and rotation in SPSS. Among these, the principal component extraction method is the most commonly used; it is used to extract maximum variance from the data set with each component (Tabachnick and Fidell, 2007). The Principal component extraction is the linear combination of observed variables that separate subjects by maximising the variance of their component score (Tabachnick and Fidell, 2007, p. 635).

6.6.1.1 The Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity

Several different techniques are used to assess the adequacy of extraction and to assess a number of factors to confirm the results. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity (BTS) are recommended to examine the sampling adequacy (Norusis, 1992). According to Tabachnick and Fidell (2007), a KMO value greater than .6 suggests statistical significance between the measurement variable relationships, and it is therefore suitable for the EFA to provide parsimonious sets of factors. However, Hair *et al.* (2010) recommend KMO values higher than .3 and significant Bartlett's test values ($p < .005$), which satisfies the initial assumptions for the EFA. Researchers run this test in two parts for the items derived from the literature.

First Part

In the first part, 33 items related to 11 factors for both groups were examined and contributed to all 11 factors. The results revealed that the KMO value was greater than 0.6 (60%) and the BTS value was significant ($p < .005$); therefore, the EFA was appropriate.

The KMO tests for EEPs Group at Pre-test and Post-test showed the values of .841 and .818, respectively. As both the values were greater than .6, the sample selected was considered as an adequate sample for the EFA. The BTS test with

respect to the same group also showed a high level of significance at the .000 level (Appendix-6).

The KMO tests for the Control Group at Pre-test and Post-test showed the values of .746 and .752, respectively. As both the values were greater than .6, the sample selected was adequate. The BTS test with respect to the same group also showed a high level of significance at the .000 level (Appendix-6).

6.6.1.2 Communalities

Apart from the KMO and Bartlett's tests, the calculation of eigenvalues and scree plotting were used to assess the adequacy of extraction and the number of factors. Researchers like Field (2006) suggested computing the variance for any given measures. Thus, the communality is one of the most important methods used to measure the variance. Hair *et al.* (2010) described communality as the total amount of variance an original variable shares with all other variables included in the analysis. According to Field (2006, p.630), a variable that has no specific variance (or random variance) has a communality of 1 and a variable that shares nothing with all other variables had a communality of 0. Researchers agree that the cut-off point for communality is .5 for a small sample and .7 for a large sample (Hair *et al.*, 2010).

The results for the EEPs Group from Pre-test have communality values above .5, and the range of variation was from .528 to .857, except the WOLO3, which was slightly less than the required value. As the variance was negligible, the researcher justifiably overlooked the variance and considered the data (Appendix-7). The results for the EEPs Group from Post-test had communality values above .5, and the range of variation was from .596 to .901 (Appendix-7). The results for the Control Group from Pre-test had communality values above .5 and the range of variation was from .570 to .914 (Appendix-7). The results for the Control Group from Post-test had communality values above .5, and the range of variation was from .640 to .899 (Appendix-7).

6.6.1.3 Eigenvalues

The above results showed a high variance among the variables. The researcher assessed the adequacy of the extraction by calculating the eigenvalues. According to Tabachnick and Fidell (2007, p. 644), a quick estimate of the number of factors is obtained from the sizes of the eigenvalues. It is reported as part of an initial run with principal component extraction. Thus, the eigenvalue is one of the important values that are related to the variance. A component with an eigenvalue less than 1 is not important; factors with eigenvalues greater than 1 are significant.

Applying the principal component extraction method, 33 items were considered. After examining these with respect to the data of the EEPs Group from Pre-test (Table 6.17), it was noted that all 33 items were loaded onto 11 factors, with an eigenvalue greater than 1. The results showed that component 1 had the highest value explaining 23.237 percent of the variance and component 11 had the lowest value explaining 3.056% of the variance. The total variance explained was 71.737 percent. The results (Table 6.18) showed the factor loading of each of the variables. The process found the highest value for the first factor (SERE) and then successively smaller values for the remaining factors.

By extracting factors from the data from the EEPs Group at Post-test, this study found 11 factors with an eigenvalue greater than 1, extracted from 33 items (Table 6.19). The highest variance was extracted from component 1, which explained 23.355 percent of the variance. The lowest variance was extracted from component 11, which explained only 3.095 percent of the total variance. The overall cumulative variance explained by 11 factors was 75.611 percent. Table 6.20 shows the factor loading of each of the variables. The process found a high value for the first factor (WOLO) and then successively smaller values for the remaining factors.

Table 6-17: Total Variance Explained for EEPs Group at Pre-test (Part 1)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.668	23.237	23.237	7.668	23.237	23.237	3.014	9.135	9.135
2	3.557	10.779	34.016	3.557	10.779	34.016	2.784	8.435	17.570
3	1.992	6.037	40.053	1.992	6.037	40.053	2.650	8.030	25.600
4	1.720	5.211	45.263	1.720	5.211	45.263	2.626	7.956	33.556
5	1.483	4.493	49.757	1.483	4.493	49.757	2.144	6.496	40.052
6	1.430	4.334	54.091	1.430	4.334	54.091	2.032	6.157	46.208
7	1.338	4.055	58.145	1.338	4.055	58.145	1.810	5.485	51.693
8	1.231	3.730	61.875	1.231	3.730	61.875	1.754	5.315	57.008
9	1.136	3.441	65.317	1.136	3.441	65.317	1.709	5.179	62.187
10	1.110	3.364	68.681	1.110	3.364	68.681	1.607	4.869	67.056
11	1.009	3.056	71.737	1.009	3.056	71.737	1.545	4.681	71.737
12	.786	2.381	74.118						
13	.702	2.126	76.244						
14	.624	1.890	78.134						
15	.581	1.760	79.894						
16	.541	1.638	81.532						
17	.535	1.621	83.153						
18	.517	1.568	84.721						
19	.495	1.501	86.222						
20	.471	1.427	87.649						
21	.444	1.346	88.995						
22	.396	1.200	90.195						
23	.383	1.160	91.356						
24	.378	1.145	92.501						
25	.334	1.012	93.512						
26	.325	.986	94.499						
27	.308	.933	95.432						
28	.288	.872	96.304						
29	.269	.815	97.119						
30	.266	.806	97.925						
31	.247	.748	98.673						
32	.222	.673	99.345						
33	.216	.655	100.000						

Extraction Method: Principal Component Analysis

Table 6-18: Factor Loading for EEPs Group at Pre-test (Part 1)

Items	1	2	3	4	5	6	7	8	9	10	11
SERE2	.819										
SERE1	.802										
SERE4	.793										
SERE3	.780										
WOLO1		.804									
WOLO2		.765									
WOLO4		.726									
WOLO5		.672									
CHAL2			.819								
CHAL1			.807								
CHAL4			.674								
CHAL3			.653								
AUTO4				.762							
AUTO3				.762							
AUTO2				.736							
AUTO1				.692							
AVRE2					.822						
AVRE1					.771						
AVRE3					.769						
ECOP3						.806					
ECOP2						.757					
ECOP1						.644					
CARE2							.900				
CARE1							.875				
SOEN2								.885			
SOEN1								.868			
SECU1									.834		
SECU2									.816		
AUTH2										.869	
AUTH1										.837	
PAPR2											.830
PAPR1											.813

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 7 iterations.

Table 6-19: Total Variance Explained for EEPs Group at Post-test (Part 1)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.707	23.355	23.355	7.707	23.355	23.355	3.226	9.775	9.775
2	4.064	12.315	35.670	4.064	12.315	35.670	2.923	8.857	18.631
3	2.281	6.912	42.582	2.281	6.912	42.582	2.909	8.814	27.445
4	1.884	5.709	48.291	1.884	5.709	48.291	2.525	7.651	35.097
5	1.723	5.221	53.513	1.723	5.221	53.513	2.484	7.528	42.625
6	1.563	4.736	58.249	1.563	4.736	58.249	2.123	6.434	49.059
7	1.365	4.138	62.386	1.365	4.138	62.386	1.893	5.737	54.796
8	1.164	3.526	65.913	1.164	3.526	65.913	1.838	5.571	60.367
9	1.107	3.356	69.269	1.107	3.356	69.269	1.696	5.139	65.506
10	1.072	3.247	72.516	1.072	3.247	72.516	1.678	5.086	70.592
11	1.021	3.095	75.611	1.021	3.095	75.611	1.656	5.019	75.611
12	.787	2.386	77.997						
13	.684	2.073	80.070						
14	.626	1.897	81.967						
15	.557	1.689	83.656						
16	.536	1.626	85.282						
17	.488	1.479	86.760						
18	.432	1.311	88.071						
19	.376	1.139	89.210						
20	.366	1.109	90.319						
21	.360	1.090	91.408						
22	.340	1.029	92.438						
23	.322	.975	93.412						
24	.303	.920	94.332						
25	.273	.828	95.160						
26	.246	.745	95.905						
27	.244	.739	96.643						
28	.238	.722	97.365						
29	.211	.640	98.005						
30	.186	.563	98.569						
31	.180	.546	99.115						
32	.154	.466	99.581						
33	.138	.419	100.000						

Extraction Method: Principal Component Analysis

Table 6-20: Factor Loading for EEPs Group at Post-test (Part 1)

Item	1	2	3	4	5	6	7	8	9	10	11
WOLO2	.830										
WOLO1	.825										
WOLO4	.759										
WOLO3	.719										
WOLO5	.686										
SERE2		.800									
SERE4		.778									
SERE3		.744									
SERE1		.665									
CHAL2			.833								
CHAL1			.805								
CHAL4			.746								
CHAL3			.681								
AUTO3				.777							
AUTO4				.742							
AUTO2				.669							
AUTO1				.668							
ECOP2					.876						
ECOP3					.836						
ECOP1					.823						
AVRE3						.806					
AVRE1						.787					
AVRE2						.736					
CARE2							.927				
CARE1							.908				
SECU1								.906			
SECU2								.899			
SOEN2									.872		
SOEN1									.861		
PAPR2										.891	
PAPR1										.846	
AUTH2											.858
AUTH1											.803

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 7 iterations.

Table 6.21, shows the factors extracted from the data for the Control Group from the Pre-test. This presents the constructs extracted from 33 items. In this regard, the highest variance was extracted from component 1, which explained 20.300 percent of the total variance explained. The lowest variance was extracted from component 11, which explained 3.045 percent of the variance. The overall cumulative variance explained by 11 factors was 78.816 percent. Table 6.22 shows the factor loading of each of the variables. The process found the highest value for the first factor (CHAL) and then successively smaller values for the remaining factors.

Finally, 11 factors were extracted from 33 items for the Control Group from the Post-test (Table 6.23), with an eigenvalue greater than 1. The highest variance was extracted from the first component, which explained 20.939 percent of the variance; the lowest variance was extracted from component 11 that explained 3.259 percent of the total variance extracted. The overall cumulative variance explained by 11 factors was 78.620 percent. Table 6.24 shows the factor loading of each of the variables. The process found the highest value for the first factor (CHAL) and then successively smaller values for the remaining factors.

Table 6-21: Total Variance Explained for Control Group at Pre-test (Part 1)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.699	20.300	20.300	6.699	20.300	20.300	3.255	9.864	9.864
2	4.218	12.781	33.081	4.218	12.781	33.081	3.080	9.335	19.199
3	2.998	9.085	42.166	2.998	9.085	42.166	3.023	9.159	28.358
4	2.235	6.771	48.937	2.235	6.771	48.937	2.809	8.512	36.870
5	2.052	6.218	55.156	2.052	6.218	55.156	2.454	7.437	44.307
6	1.608	4.874	60.030	1.608	4.874	60.030	2.175	6.591	50.898
7	1.508	4.571	64.601	1.508	4.571	64.601	1.880	5.695	56.593
8	1.363	4.130	68.731	1.363	4.130	68.731	1.866	5.656	62.249
9	1.117	3.385	72.117	1.117	3.385	72.117	1.822	5.522	67.771
10	1.073	3.253	75.370	1.073	3.253	75.370	1.761	5.336	73.107
11	1.005	3.045	78.415	1.005	3.045	78.415	1.751	5.308	78.415
12	.813	2.463	80.877						
13	.754	2.286	83.163						
14	.564	1.709	84.872						
15	.522	1.582	86.454						
16	.430	1.304	87.759						
17	.411	1.244	89.003						
18	.386	1.169	90.172						
19	.369	1.119	91.291						
20	.345	1.047	92.337						
21	.317	.962	93.299						
22	.286	.866	94.165						
23	.281	.853	95.018						
24	.253	.765	95.784						
25	.233	.705	96.489						
26	.197	.596	97.085						
27	.170	.514	97.599						
28	.163	.493	98.093						
29	.149	.453	98.545						
30	.135	.410	98.955						
31	.122	.369	99.324						
32	.116	.353	99.677						
33	.106	.323	100.000						

Extraction Method: Principal Component Analysis.

Table 6-22: Factor Loading for Control Group at Pre-test (Part 1)

Items	1	2	3	4	5	6	7	8	9	10	11
CHAL3	.836										
CHAL4	.816										
CHAL1	.802										
CHAL2	.784										
SERE3		.807									
SERE2		.803									
SERE1		.801									
SERE4		.750									
AUTO2			.875								
AUTO1			.859								
AUTO3			.801								
AUTO4			.731								
WOLO1				.755							
WOLO3				.731							
WOLO5				.714							
WOLO2				.688							
WOLO4				.657							
ECOP2					.862						
ECOP3					.843						
ECOP1					.832						
AVRE2						.860					
AVRE3						.782					
AVRE1						.723					
CARE1							.937				
CARE2							.928				
AUTH2								.909			
AUTH1								.823			
SECU2									.911		
SECU1									.907		
SOEN2										.893	
SOEN1										.809	
PAPR2											.870
PAPR1											.699

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 7 iterations.

Table 6-23: Total Variance Explained for Control Group at Post-test (Part 1)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.910	20.939	20.939	6.910	20.939	20.939	3.163	9.583	9.583
2	4.456	13.503	34.442	4.456	13.503	34.442	3.078	9.327	18.911
3	2.853	8.645	43.087	2.853	8.645	43.087	3.011	9.123	28.034
4	2.075	6.287	49.373	2.075	6.287	49.373	3.005	9.107	37.141
5	1.727	5.232	54.606	1.727	5.232	54.606	2.860	8.665	45.806
6	1.684	5.102	59.708	1.684	5.102	59.708	1.988	6.025	51.831
7	1.513	4.585	64.292	1.513	4.585	64.292	1.911	5.791	57.622
8	1.339	4.058	68.350	1.339	4.058	68.350	1.836	5.564	63.186
9	1.265	3.834	72.184	1.265	3.834	72.184	1.793	5.432	68.618
10	1.113	3.374	75.558	1.113	3.374	75.558	1.779	5.391	74.009
11	1.075	3.259	78.816	1.075	3.259	78.816	1.586	4.807	78.816
12	.803	2.435	81.251						
13	.647	1.960	83.211						
14	.535	1.621	84.832						
15	.533	1.616	86.448						
16	.501	1.519	87.967						
17	.423	1.281	89.247						
18	.421	1.277	90.525						
19	.344	1.042	91.566						
20	.317	.961	92.528						
21	.297	.900	93.428						
22	.285	.862	94.290						
23	.262	.793	95.083						
24	.233	.705	95.788						
25	.227	.686	96.474						
26	.198	.599	97.074						
27	.181	.549	97.623						
28	.148	.449	98.072						
29	.139	.421	98.494						
30	.135	.408	98.902						
31	.129	.390	99.292						
32	.122	.370	99.662						
33	.112	.338	100.000						

Extraction Method: Principal Component Analysis.

Table 6-24: Factor Loading for Control Group at Post-test (Part 1)

Items	1	2	3	4	5	6	7	8	9	10	11
CHAL1	.817										
CHAL2	.800										
CHAL4	.774										
CHAL3	.697										
SERE4		.852									
SERE2		.798									
SERE1		.781									
SERE3		.742									
WOLO5			.799								
WOLO1			.754								
WOLO4			.741								
WOLO2			.720								
WOLO3			.654								
ECOP3				.905							
ECOP2				.892							
ECOP1				.855							
AUTO4					.823						
AUTO2					.817						
AUTO1					.815						
AUTO3					.720						
AVRE2						.810					
AVRE1						.753					
AVRE3						.705					
SECU2							.911				
SECU1							.901				
PAPR2								.915			
PAPR1								.895			
CARE1									.904		
CARE2									.855		
SOEN1										.867	
SOEN2										.861	
AUTH2											.823
AUTH1											.667

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalisation.

Rotation converged in 7 iterations.

6.6.1.4 Scree Plot

The Scree plotting is one of the methods used to determine the number of extracted latent factors. It is used to extract factors by plotting. According to Hair *et al.* (2010, p. 110), the scree plot test is done by plotting the latent roots against

the number of factors in their order of extraction, and the shape of the resulting curve is used to evaluate the cut-off point. The shape of the plot negatively decreases and is like an elbow shape. The eigenvalue is highest for the first factor and moderate but decreasing for the next few factors before reaching small values for the last few factors (Tabachnick and Fidell, 2007, p. 644). The results from this confirm a similar number of factors by applying the eigenvalue criterion of values greater than 1.

Appendix 8 shows the clear-cut off points for these components and also shows the difference in the line (i.e. the elbow shape) exactly at 11 constructs. This validated the constructs extracted using eigenvalues, whereby the first factor captured much more of the variance as compared to others factors.

Second Part

The second part involved exploring 15 items related to 3 factors for the EEPs Group and the Control Group at Pre-test and 33 items related to 6 factors for the EEPs Group and the Control Group at Post-test. The KMO tests for EEPs Group at Pre-test and Post-test (Appendix-6) showed values of .760 and .820, respectively. As both the values were greater than .6, the sample was selected as adequate. The BTS test with respect to the same group also showed a high level of significance at the .000 level.

The KMO tests for the Control Group at Pre-test and Post-test (Appendix-6) showed the values of .713 and .781, respectively. As both the values were greater than .6, the sample selected is accepted as adequate. The BTS test with respect to the same group also shows a high level of significance at the .000 level.

6.6.1.5 Communalities

The results for the EEPs Group from Pre-test and Post-test showed communality values greater than .5 in all items. The range of variation ranged from .511 to .815 at Pre-test and from .500 to .850 at Post-test (Appendix-7). The results for the

Control Group from Pre-test and Post-test show communality values greater than .5 in all items. The range of variation for the Control Group was from .515 to .857 at Pre-test and from .515 to .903 at Post-test (Appendix-7).

6.6.1.6 Eigenvalues

Table 6.25, shows the factors extracted from 12 items from the EEPs Group data from Pre-test. In this regard, the highest variance was extracted from component 1, which explained 28.228 percent of the variance. The lowest variance was extracted by component 3, which explained 12.239 percent of the variance.. The overall cumulative variance explained by three factors was 61.235 percent. Table 6.26 shows the factor loading of each of the variables. The process found a high value for the first factor (PEBC) and then successively smaller values for the remaining factors.

Table 6.27, shows the factors extracted from the EEPs Group data from Post-test, with the constructs extracted from 25 items. In this regard, the highest variance was extracted by component 1, which explained 21.923 percent of the variance. The lowest variance was extracted by component 6, which explained 4.535 percent. The overall cumulative variance explained by six factors was 67.484 percent. Table 6.28 shows the factor loading of each of the variables. The process found a high value for the first factor (LEMO) and then successively smaller values for the remaining factors.

Table 6-25: Total Variance Explained for EEPs Group at Pre-test (Part 2)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.387	28.228	28.228	3.387	28.228	28.228	2.797	23.310	23.310
2	2.492	20.767	48.995	2.492	20.767	48.995	2.519	20.994	44.304
3	1.469	12.239	61.235	1.469	12.239	61.235	2.032	16.931	61.235
4	.995	8.291	69.525						
5	.711	5.922	75.447						
6	.636	5.303	80.750						
7	.578	4.816	85.566						
8	.552	4.597	90.163						
9	.433	3.609	93.773						
10	.276	2.296	96.069						
11	.257	2.138	98.207						
12	.215	1.793	100.000						

Extraction Method: Principal Component Analysis.

Table 6-26: Factor Loading for EEPs Group at Pre-test (Part 2)

	Component		
	1	2	3
PEBC6	.900		
PEBC5	.900		
PEBC4	.886		
PEBC3	.589		
SUNO6		.731	
SUNO4		.726	
SUNO2		.681	
SUNO5		.679	
SUNO3		.651	
OSCI1			.849
OSCI2			.839
OSCI3			.700

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalisation.

Rotation converged in 4 iterations.

Table 6-27: Total Variance Explained for EEPs Group at Post-test (Part 2)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.481	21.923	21.923	5.481	21.923	21.923	3.846	15.386	15.386
2	3.404	13.617	35.540	3.404	13.617	35.540	3.251	13.005	28.391
3	2.783	11.132	46.672	2.783	11.132	46.672	3.073	12.291	40.681
4	2.428	9.712	56.384	2.428	9.712	56.384	3.047	12.187	52.868
5	1.641	6.565	62.949	1.641	6.565	62.949	2.008	8.031	60.899
6	1.134	4.535	67.484	1.134	4.535	67.484	1.646	6.584	67.484
7	.989	3.955	71.439						
8	.839	3.357	74.796						
9	.696	2.783	77.579						
10	.650	2.602	80.181						
11	.587	2.348	82.529						
12	.497	1.988	84.518						
13	.449	1.797	86.315						
14	.423	1.693	88.008						
15	.411	1.643	89.650						
16	.363	1.451	91.102						
17	.344	1.375	92.477						
18	.287	1.150	93.627						
19	.274	1.095	94.721						
20	.260	1.039	95.760						
21	.255	1.020	96.780						
22	.227	.907	97.687						
23	.216	.864	98.551						
24	.198	.790	99.341						
25	.165	.659	100.000						

Extraction Method: Principal Component Analysis.

Table 6-28: Factor Loading for EEPs Group at Post-test (Part 2)

	Component					
	1	2	3	4	5	6
LEMO3	.840					
LEMO4	.810					
LEMO2	.786					
LEMO5	.764					
LEMO1	.717					
PEBC6		.920				
PEBC4		.910				
PEBC5		.885				
PEBC3		.855				
SUNO6			.785			
SUNO4			.776			
SUNO5			.757			
SUNO2			.752			
SUNO3			.721			
UPRI12				.854		
UPRI10				.842		
UPRI11				.797		
UPRI9				.646		
UPRI2				.612		
OSCI2					.819	
OSCI1					.811	
OSCI3					.666	
INSP1						.845
INSP2						.743

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 5 iterations.

Table 6.29, shows the factors extracted from 10 items from the data of the Control Group from the Pre-test. In this regard, the highest variance was extracted from component 1, which explained 27.173 percent of the variance. The lowest variance was extracted from component 3, explaining 18.216 percent. The overall cumulative variance explained by three factors was 69.770 percent. Table 6.30 shows the factor loading of each of the variables. The process found a high value for the first factor (PEBC) and then successively smaller values for the remaining factors.

Table 6-29: Total Variance Explained for Control Group at Time 1 (Part 2)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.717	27.173	27.173	2.717	27.173	27.173	2.548	25.477	25.477
2	2.438	24.381	51.554	2.438	24.381	51.554	2.304	23.039	48.515
3	1.822	18.216	69.770	1.822	18.216	69.770	2.125	21.255	69.770
4	.714	7.141	76.911						
5	.594	5.944	82.855						
6	.535	5.349	88.204						
7	.477	4.766	92.970						
8	.264	2.637	95.607						
9	.245	2.446	98.053						
10	.195	1.947	100.000						

Extraction Method: Principal Component Analysis.

Table 6-30: Factor Loading for Control Group at Pre-test (Part 2)

	Component		
	1	2	3
PEBC6	.917		
PEBC5	.915		
PEBC4	.913		
SUNO6		.789	
SUNO4		.785	
SUNO5		.729	
SUNO2		.715	
OSCI2			.898
OSCI1			.857
OSCI3			.746

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 5 iterations.

Table 6.31 shows the factors extracted from 23 items from the data of the Control Group from the Post-test. In this regard, the highest variance was extracted from component 1, which explained 25.653 percent of the variance. The lowest variance was extracted by component 6, explaining 5.165 percent. The overall cumulative variance explained by six factors was 71.117 percent. Table 6.32 shows the factor loading of each of the variables. The process found a high value for the first factor (LEMO) and then successively smaller values for the remaining factors.

Table 6-31: Total Variance Explained for Control Group at Post-test (Part 2)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.900	25.653	25.653	5.900	25.653	25.653	3.978	17.296	17.296
2	2.815	12.237	37.890	2.815	12.237	37.890	2.885	12.542	29.838
3	2.744	11.931	49.822	2.744	11.931	49.822	2.715	11.804	41.642
4	2.105	9.152	58.974	2.105	9.152	58.974	2.620	11.391	53.033
5	1.605	6.979	65.952	1.605	6.979	65.952	2.375	10.324	63.357
6	1.188	5.165	71.117	1.188	5.165	71.117	1.785	7.760	71.117
7	.860	3.741	74.858						
8	.818	3.555	78.413						
9	.739	3.215	81.627						
10	.562	2.444	84.072						
11	.531	2.311	86.382						
12	.463	2.014	88.397						
13	.412	1.793	90.189						
14	.389	1.693	91.882						
15	.318	1.384	93.266						
16	.269	1.169	94.435						
17	.260	1.131	95.566						
18	.232	1.010	96.576						
19	.207	.899	97.474						
20	.189	.822	98.296						
21	.152	.659	98.955						
22	.132	.575	99.530						
23	.108	.470	100.000						

Extraction Method: Principal Component Analysis.

Table 6-32: Factor Loading for Control Group at Post-test (Part 2)

	Component					
	1	2	3	4	5	6
LEMO3	.858					
LEMO4	.853					
LEMO5	.844					
LEMO2	.785					
LEMO1	.689					
SUNO4		.812				
SUNO5		.735				
SUNO3		.733				
SUNO6		.703				
SUNO2		.598				
PEBC6			.943			
PEBC4			.930			
PEBC5			.925			
UPRI5				.762		
UPRI2				.757		
UPRI9				.664		
UPRI4				.644		
UPRI3				.588		
OSCI1					.860	
OSCI2					.844	
OSCI3					.838	
INSP1						.852
INSP2						.739

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalisation.
 Rotation converged in 6 iterations.

6.6.1.7 Scree Plot

Appendix-8 shows the difference in the line (i.e. the elbow shape) exactly at 3rd point of EEPs and Control groups at the pre-test. In addition, it shows the difference in the line at 6th items of the same previous groups at the post-test.

This validates the constructs extracted variance using the eigenvalues, whereby the first factor captures much more of the variance as compared to the others.

Finally, after developing the factors' internal consistency, each loaded factor was assessed by calculating the Cronbach's alpha values. The following clusters of items were specified for the most relevant dimensions of the elements.

Factor 1: Security (SECU): This factor is related to information regarding the employee's job security to show his or her attitude toward organisational employment. For this factor, two items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at the both times, both factors were loaded above the required value of .5 (Field, 2006).

Factor 2: Workload (WOLO): This factor is related to information regarding the employee's workload to show his or her attitude toward organisational employment. For this factor, five items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at Post-test and for the Control Group at Pre-test, all factors were loaded above the required value of .5 (Field, 2006). However, for the EEPs data at Pre-test, four original factors were loaded.

Factor 3: Social Environment (SOEN): This factor is related to information regarding the employee's social environment to show his or her attitude toward organisational employment. For this factor, two items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, both factors were loaded above the required value of .5 (Field, 2006).

Factor 4: Avoid Responsibility (AVRE): This factor is related to information regarding the employee's avoidance of responsibility to show his or her attitude toward organisational employment. For this factor, three items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 5: Career (CARE): This factor is related to information regarding the employee's career to show his or her attitude toward organisational employment. For this factor, two items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, both factors were loaded above the required value of .5 (Field, 2006).

Factor 6: Economic Opportunity (ECOP): This factor is related to information regarding the employee's economic opportunity to examine the employee's attitude toward self-employment. For this factor, three items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 7: Challenge (CHAL): This factor is related to information regarding the employee's sense of challenge to examine the employee's attitude toward self-employment. For this factor, four items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 8: Autonomy (AUTO): This factor is related to information regarding the employee's autonomy to examine the employee's attitude toward self-employment. For this factor, four items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 9: Authority (AUTH): This factor is related to information regarding the employee's authority to examine the employee's attitude toward self-employment. For this factor, two items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, both factors were loaded above the required value of .5 (Field, 2006).

Factor 10: Self-realisation (SERE): This factor is related to information regarding the employee's self-realisation to examine the employee's attitude toward self-employment. For this factor, four items were loaded, as originally proposed by

Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 11: Participation (PAPR): This factor is related to information regarding the employee's participation in the whole process to examine the employee's attitude toward self-employment. For this factor, two items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both groups at both times, both factors were loaded above the required value of .5 (Field, 2006).

Factor 12: Subjective Norms (SUNO): This factor is related to information regarding the reasons (close family, friends or people) for starting one's own business and becoming self-employed full time. For this factor, six items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). Five original factors were loaded for the EEPs Group at Pre-test and four were loaded for the Control Group at Pre-test. At Post-test, five original factors were loaded for the EEPs Group and for the Control Group. All the above factors were loaded above the required value of .5 (Field, 2006).

Factor 13: Perceived Behaviour Control (PEBC): This factor is related to information regarding the reasons for starting one's own business and becoming full time self-employed. For this factor, six items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For the EEPs Group at Pre-test, four original factors were loaded. At Pre-test, three original factors were loaded for the Control Group. At Post-test, four original factors were loaded for the EEPs Group and three original factors were loaded for the Control Group. All the above factors were loaded above the required value of .5 (Field, 2006).

Factor 14: Occupation Status Intention (OCSI): This factor is related to information regarding the reasons for starting one's own business and becoming self-employed full time. For this factor, three items were loaded, as originally proposed by Kolvereid (1996a) and applied by Souitaris *et al.* (2007). For both

groups at both times, all factors were loaded above the required value of .5 (Field, 2006).

Factor 15: Learning From Module (LEMO): This factor is related to information regarding learning from modules. Five items were loaded, as originally developed by Souitaris *et al.* (2007), which was based on Johannisson (1991). From the data from Post-test (for both the Control Group and the EEPs Group), five original factors were loaded above the required value of .5 (Field, 2006).

Factor 16: Learning From Inspiration (INSP): This factor is related to information regarding inspiration from the modules. Two items were loaded, as developed by Souitaris *et al.* (2007). From the data at Post-test (for both the Control Group and the EEPs Group), both original factors were loaded above the required value of .5 (Field, 2006).

Factor 17: University Incubation Resources (UPRI): This factor is related to information regarding the utilisation of programme resources and the incubators available in the universities during the module of study. Eleven items were loaded, as developed by Souitaris *et al.* (2007), based on Zahra (1993). From the data from the Post-test (for both the Control Group and the EEPs Group), five original factors were loaded above the required value of .5 (Field, 2006).

6.6.2 Differences between Control and EEPs group at Pre-test

In order to assess fully the impact of entrepreneurship course (treatment) on students it is essential that there is no difference between both groups i.e. the EEPs group and the control group at the baseline (time 1). The independent samples t-test is a parametric test that measures an effect of an independent variable of two levels (treatment vs. control). Therefore, an independent samples t-test was conducted to test whether there was any difference between the groups regarding their attitudes toward self-employment, subjective norms, perceived

behavioural control and intention to become self-employed (Entrepreneurial Intention). These variables were derived from previous factors reported in the published literature.

The t-test table (Appendix 8) showed that there was no significant difference between both groups in their attitudes $t(673)=1.31, p>0.05$; subjective norms, $t(673)=1.19, p>0.05$; perceived behavioural control, $t(673)=0.804, p>0.05$ and intention to become self-employed, $t(673)=1.84, p>0.05$. The group statistics table shows the average scores of both groups (Appendix 8).

6.7 Findings related to Hypotheses

This section is concerned with investigating the predetermined hypotheses explained in the Methodology chapter. These hypotheses are based on eight main variables: intention to become self-employed (entrepreneurial intention), attitude towards self-employment (attitude), subjective norms, perceived behavioural control, learning from the modules, inspiration, university incubation resources (incubation) and start-up activities.

Initially, the researcher presented the TPB as per Kolvereid (1996) and developed two hypotheses to confirm the basic predictions vis-à-vis university students in the context of Saudi Arabia. The researcher then proposed three specific benefits derived from the EEPs for participants and hypothesised that each benefit affected the participants' entrepreneurial attitudes and intentions.

Two groups of participants examined were the experimental or EEPs Group (participants who undertook EEPs) and the Control Group (who received normal university education without any special entrepreneurship education).

To investigate the main hypotheses, it was essential to conduct the following statistical tests.

Pearson's Correlation Coefficient Testing: This test was used to examine the relationships between any two variables at Pre-test and Post-test while specifying their correlation strength and statistical significance level.

Multiple Regression Analysis: Multiple regression analysis was undertaken because it seeks to follow up on the calculation of Pearson's correlations in order to confirm the findings and find out which independent variables (i.e. attitude towards self-employment (attitude), subjective norms, perceived behavioural control, learning from the modules, inspiration, university incubation resources (incubation) and start-up activities) could be significant predictors of the dependent variable i.e. intention to become self-employed (entrepreneurial intention) at Pre-test and Post-test.

Repeated Measures T-test: This test was essential as it allowed the researcher to test the differences between the participants' scores before and after the EEPs. It was used to examine whether or not the EEPs resulted in changes in the tested variables, within the groups. Analysis was conducted separately for the two groups in order to seek full understanding of the statistical outcomes in relation to the main hypotheses.

6.7.1 Hypothesis H1

H₁. The intention to become self-employed (Entrepreneurial Intention) is positively related to the attitude toward self-employment (H1a), subjective norms (H1b) and perceived behavioural control (H1c).

To test this hypothesis, the researcher calculated the Pearson's correlation coefficients and conducted multiple regression analysis for the two time points (t1 and t2). This was carried out firstly for the EEPs Group and then for the Control Group, and then for the combination of both groups.

6.7.1.1 EEPs Group

As predicted by the TPB, intention to become self-employed (entrepreneurial intention–EI) was found to have a statistically significant correlation with the attitude toward self-employment, subjective norms and perceived behavioural control at both times. The results (Table 6.33) revealed that there was a significant positive correlation between intention to become self-employed and attitude towards self-employment (Pre-test: $r=0.299$, $p<0.01$; Post-test: $r=0.294$, $p<0.01$). Similarly, a positive and significant correlation was found between intention to become self-employed and subjective norms before and after EEPs (Pre-test: $r=0.353$, $p<0.01$; Post-test: $r=0.410$, $p<0.01$), and with perceived behavioural control (Pre-test: $r=0.313$, $p<0.01$; Post-test: $r=0.354$, $p<0.01$).

Table 6-33: Pearson’s Correlation for EEPs at Pre and Post-tests (N=491)

Variables	1	2	3	4	5	6	7	8
1. Attitude towards self-employment- Pre-test	1							
2. Subjective Norm- Pre-test	.102	1						
3. Perceived behavioural control- Pre-test	.135	.208*	1					
4. Intention to become self-employed- Pre-test	.299**	.353**	0.313**	1				
5. Attitude towards self-employment- Post-test					11			
6. Subjective Norm- Post-test					.217**	1		
7. Perceived behavioural control- Post-test					.105*	.218**	1	
8. Intention to become self-employed- Post-test					.294**	.410**	.354**	1

Correlation significant at the 0.05* or 0.01** level

The significant and positive results suggested that the higher the intention to become self-employed, the higher the attitude toward self-employment, subjective norms and perceived behavioural control. As a result, H1 hypothesis was fully accepted i.e. H1a, H1b and H1c were accepted (Figure 6.7, Table 7-1).

Regression analysis (Table 6.34) was conducted to further assessing the above hypothesis (H1). The regression results showed an adjusted R^2 coefficient for the pre-test as $R^2_{adj}=0.236$, $p<0.01$; Post-test: $R^2_{adj}=0.275$, $p=0.01$). The resulting

standardised beta (β) coefficients showed that attitude towards self-employment (Pre-test: $\beta=0.240$; Post-test: $\beta=0.199$), subjective norms (Pre-test: $\beta =0.282$; Post-test: $\beta=0.309$) and perceived behavioural control (Pre-test: $\beta=0.221$; Post-test: $\beta=0.266$) were all significant predictors of the intention to become self-employed ($p<0.01$). Hence, the regression results provided supporting evidence to accept hypotheses H1a, H1b and H1c (Figure 6.7, Table 7-1).

Table 6-34: Regression Analysis for EEPs and Control Groups at Pre and Post-tests

Variables	Experimental group		Control group	
	Std. Beta (β)	Sig (p)	Std. Beta (β)	Sig (p)
Attitude towards Self-Employment-Pre-test	0.240	0.000	0.208	0.002
Subjective Norm-Pre-test	0.282	0.000	0.224	0.001
Perceived Behavioural Control-Pre-test	0.221	0.000	0.284	0.000
Adjusted R ²	0.236	0.000	0.206	0.000
Attitude towards Self-Employment-Post-test	0.199	0.000	0.250	0.000
Subjective Norm-Post-test	0.309	0.000	0.190	0.007
Perceived Behavioural Control-Post-test	0.266	0.000	0.278	0.000
Adjusted R ²	0.275	0.000	0.233	0.000

6.7.1.2 Control Group

Pearson's correlation coefficient calculations were carried out for the Control Group. The results (Table 6.35) showed that intention to become self-employed was statistically significantly and positively correlated with the attitude towards self-employment (Pre-test: $r=0.237$, $p<0.01$; Post-test: $r=0.320$, $p<0.01$); significant positive correlations were also found with the subjective norms at the both times (Pre-test: $r=0.308$, $p<0.01$; Post-test: $r=0.337$, $p<0.01$) and with perceived behavioural control (Pre-test: $r=0.356$, $p<0.01$; Post-test: $r=0.365$, $p<0.01$).

Table 6-35: Pearson's Correlation for Control Group at Pre and Post Tests (N=184)

Variables	1	2	3	4	5	6	7	8
Attitude towards self-employment- Pre-test	1							
Subjective Norm- Pre-test	.049	1						
Perceived behavioural control- Pre-test	.065	.261*	1					
Intention to become self-employed- Pre-test	0.237**	.308**	0.356**					
Attitude towards self-employment- Post-test				1				
Subjective Norm- Post-test					.224**	1		
Perceived behavioural control- Post-test					.097	.325**	1	
Intention to become self-employed- Post-test					0.320**	.337**	.365**	1

* Correlation significant at the 0.05* or 0.01** level

Regression analysis (Table 6.33) was conducted for the Control Group. The resulting regression shows an adjusted coefficient of Pre-test: $R^2=0.206$, $p=0.01$; Post-test: $R^2=0.233$, $p=0.01$. The resulting standardised beta coefficients show that attitude towards self-employment (Pre-test: $\beta=0.208$; Post-test: $\beta=0.250$), subjective norms (Pre-test: $\beta=0.224$; Post-test: $\beta=0.190$) and perceived behavioural control (Pre-test: $\beta=0.284$; Post-test: $\beta=0.278$) are all significant predictors of intention to become self-employed at $p<0.01$.

6.7.1.3 Overall

By calculating the Pearson's correlation coefficient (Table 6.36) for the overall data (combining the EEPs Group and the Control Group), intention to become self-employed was found to have a statistically significant correlation with attitude toward self-employment, subjective norms and perceived behaviour control at both times. The results revealed that there was a significant positive correlation between intention to become self-employed and attitude towards self-employment (Pre-test: $r=0.274$, $p<0.01$; Post-test: $r=0.380$, $p<0.01$). Similarly a positive and significant correlation was found between intention to become self-employed and subjective norms (Pre-test: $r=0.364$, $p<0.01$; Post-test: $r=0.485$, $p<0.01$), and with perceived behavioural control (Pre-test: $r=0.315$, $p<0.01$; Post-test: $r=0.392$, $p<0.01$). The significant and positive results indicated that the

higher the intention to become self-employed, the higher the attitude toward self-employment, subjective norms and perceived behavioural control.

Table 6-36: Pearson's Correlation for Total Sample at Pre and Post Tests (N=675)

Variables	1	2	3	4	5	6	7	8
Attitude towards self-employment-Pre-test	1							
Subjective Norm- Pre-test	0.087*	1						
Perceived behavioural control-Pre-test	0.114**	0.222**	1					
Intention to become self-employed- Pre-test	0.274**	0.364**	0.315**					
Attitude towards self-employment-Post-test				1				
Subjective Norm- Post-test					0.290**	1		
Perceived behavioural control-Post-test					0.143**	0.293**	1	
Intention to become self-employed- Post-test					0.380**	0.485**	0.392**	1

Correlation significant at the 0.05* or 0.01** level

Regression analysis (Table 6.37) results showed an adjusted R^2 coefficient for the Pre-test: $R^2_{adj}=0.239$, $p=0.01$; Post-test: $R^2_{adj}=0.358$, $p=0.01$. The resulting standardised beta coefficients (β) showed that attitude towards self-employment (Pre-test: $\beta=0.223$; Post-test: $\beta=0.245$), subjective norms (Pre-test: $\beta=0.295$; Post-test: $\beta=0.338$) and perceived behavioural control (Pre-test: $\beta=0.224$; Post-test: $\beta=0.258$) are all significant predictors of the intention to become self-employed ($p<0.01$). Hence, these results showed the supporting evidence to accept full hypothesis H1 i.e. H1a, H1b and H1c, and the theory of planned behaviour also received a strong support from these results.

In this study, these three factors explained 24 percent and 36 percent of the variance of the intention to become self-employed at the Pre-test and Post-test stages, respectively. However, overall, the models explained about 24 percent of the variance of the intention to become self-employed.

Table 6-37: Regression Analysis for Overall Sample at Pre and Post Tests (N=675)

Variables	Std. Beta (β)	Sig (p)
Attitude towards Self-Employment Pre-test	0.223	0.000
Subjective Norm Pre-test	0.295	0.000
Perceived Behavioural Control Pre-test	0.224	0.000
Adjusted R^2	0.239	0.000
Attitude towards Self-Employment Post-test	0.245	0.000
Subjective Norm Post-test	0.338	0.000
Perceived Behavioural Control Post-test	0.258	0.000
Adjusted R^2	0.358	0.000

6.7.2 Hypothesis H2

H₂. After taking an EEP course, there is increased intention to become self-employed, there is increased propensity to become a nascent entrepreneur (H2a) and there is a greater number of start-up activities initiated or completed (H2b).

In a similar way to the previous hypothesis (H1), hypothesis H2 (comprising hypotheses H2a and H2b) was tested using the Pearson's correlations followed by multiple linear regression analysis, which showed results as follows.

6.7.2.1 EEPs Group

In the EEPs Group, the results showed that there was no significant correlation between intention to become self-employed and nascency ($r=0.071$, $p>0.05$) (Table 6.38). In addition, no significant correlation was found between the intention to become self-employed and the number of start-up activities ($r=0.028$, $p>0.05$). Based on these outcomes, the hypothesis H2 was not accepted (rejected). Results of regression analysis (Table 6.39) used to predict intention to become self-employed, revealed insignificant adjusted R^2 when nascency and start-up activities were used as predictors ($R^2_{adj}=0.001$, $p=0.258$). The resulting standardised beta (β) coefficients showed that neither 'nascency' ($\beta=0.069$) nor

'start-up activities' ($\beta=0.024$) were significant predictors of the intention to become self-employed ($p>0.05$). This outcome thus suggested rejection of hypothesis H2 in total i.e. both the H2a and H2b were rejected (Figure 6.7, Table 7-1).

Table 6-38: Pearson's Correlation for to Become Self-Employed

	Intention to become self-employed	
	EEPs Group (<i>r</i>)	Control Group (<i>r</i>)
Nascency	0.071 (n.s.)	0.082(n.s.)
Start up activity	0.028 (n.s.)	0.033 (n.s.)

No correlation coefficient was significant, n.s. =not significant

Table 6-39: Regression Analysis for Intention to Become Self employed

Variables	EEP group		Control group	
	Std. Beta (β)	Sig (<i>p</i>)	Std. Beta (β)	Sig (<i>p</i>)
Nascency	0.069	0.128	0.081	0.278
Start up activity	0.024	0.600	0.029	0.697
Adjusted R^2	0.001	0.258	-0.003	0.504

6.7.2.2 Control Group

In the Control Group, as expected, no significant correlations were found between the intention to become self-employed and nascency ($r=0.082$, $p>0.05$) and between the start-up activities and intention to become self-employed ($r=0.033$, $p>0.05$) (Table 6.38) .

Again, regression analysis results for the Control Group (Table 6.39) revealed insignificant adjusted R^2 when using nascency and start-up activities as predictors ($R^2_{adj}=-0.003$, $p=0.504$). The resulting standardised beta coefficients showed that neither nascency ($\beta=0.081$, $p=0.278$) nor start-up activities ($\beta=0.029$, $p=0.697$) were significant predictors of intention to become self-employed.

6.7.3 Hypothesis H3

H₃: After taking an EEP, the student's attitude toward self-employment (H3a), subjective norms (H3b), perceived behavioural control (H3c) and intention to become self-employed (H3d) will be improved compared to what it was at the beginning of the EEP.

6.7.3.1 EEPs Group

A repeated measures t-test was conducted to test the impact of EEPs on students' attitudes toward self-employment, subjective norms, perceived behavioural control and intentions to become self-employed (Table 6.40 and Figures 6.1- 6.3). This was done by comparing the scores of each variable before and after the EEPs. By looking at the boxplots (Figures 6.2 and 6.3) it can be observed that when considering all variables the data can be considered normally distributed.

Table 6-40: T-test Results at Pre and Post Tests for EEPs Group

Paired Samples Test									
Variables		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Attitude to Self-employment Post-test Attitude To self-Employment. Pre-test	.38311	1.36779	.06173	.26183	.50439	6.206	490	.000
Pair 2	Subjective Norm. Post-test Subjective Norms. Pre-test	.32709	1.14672	.05175	.22541	.42877	6.320	490	.000
Pair 3	Perceived Behavioural Control. Post-test Perceived Behavioural Control Pre-test	.22573	1.26384	.05704	.11366	.33780	3.958	490	.000
Pair 4	Intention. Post-test Intention. Pre-test	.51663	1.32116	.05962	.39948	.63378	8.665	490	.000

In the EEPs Group, the results of the t-test (Table 6.40) indicated that EEPs resulted in significant improvements in the Pre-test and Post-test values for attitude to self-employment $T(490)=6.20$, $p<0.01$) (Pre-test =0.64, Post-test =1.02). Similarly, EEPs were found to have significant effects on subjective norms $T(490)=6.32$, $p<0.01$) (Pre-test =3.66, Post-test =3.97) and on perceived behavioural control $T(490)= 3.96$, $p<0.01$) (Pre-test =2.63, Post-test =2.87), as

well as on the intention to become self-employed $T(490)=8.66, p<0.01$ (Pre-test =3.60, Post-test =4.12). The results thus suggested that the hypothesis H3 can be fully accepted i.e. all the hypotheses i.e. H3a-d were accepted (Table 7-1).

Figure 6-1: Mean Score for Each of the Variables amongst the EEPs Group

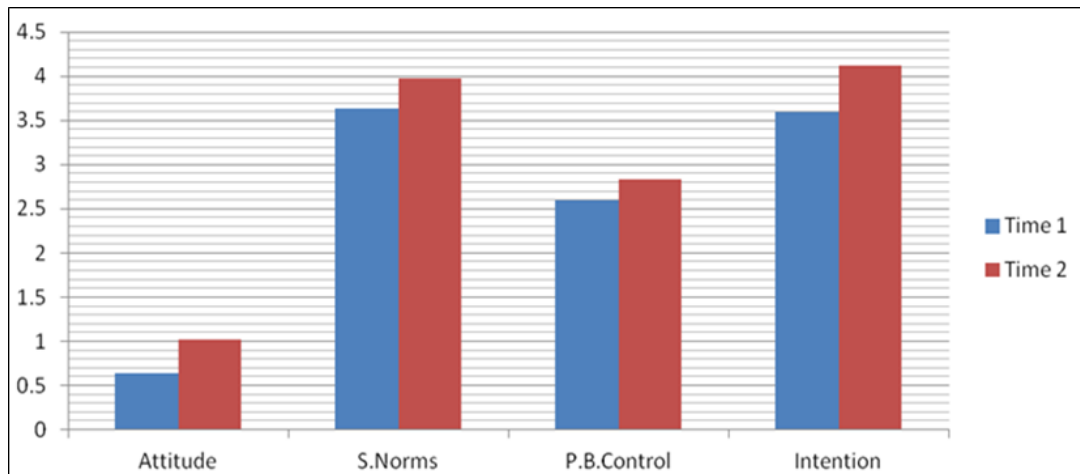


Figure 6-2: Boxplot for mean scores of the main variables for the EEPs group at time 1

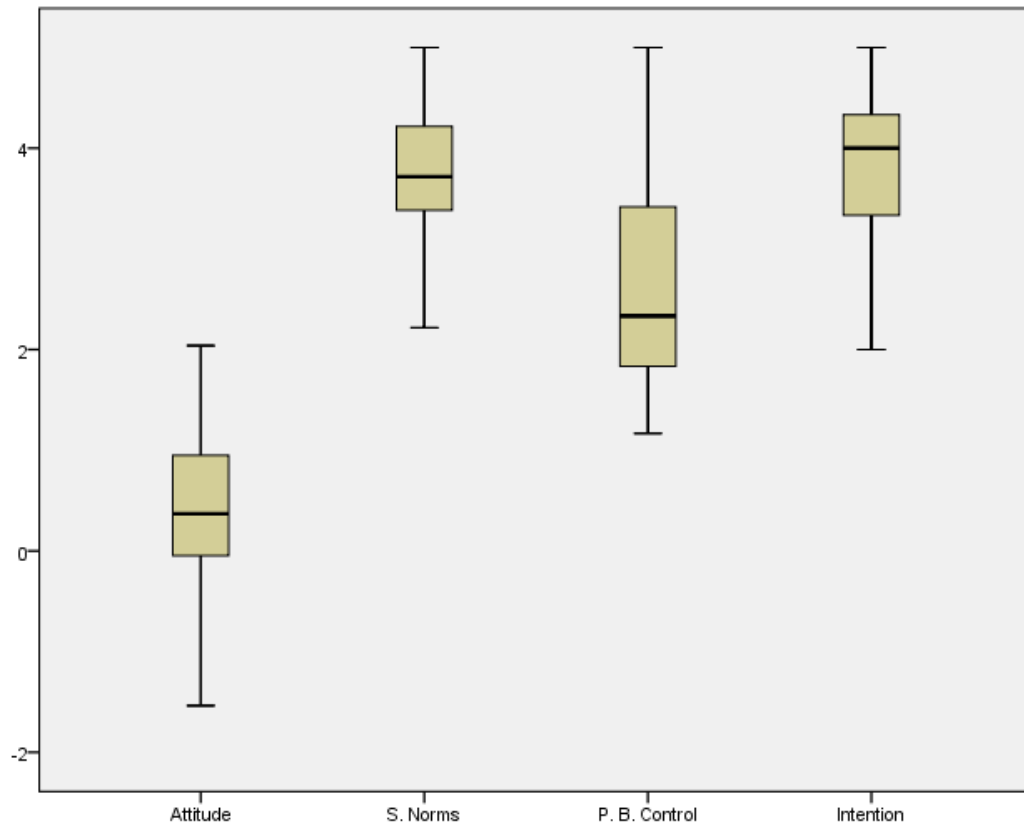
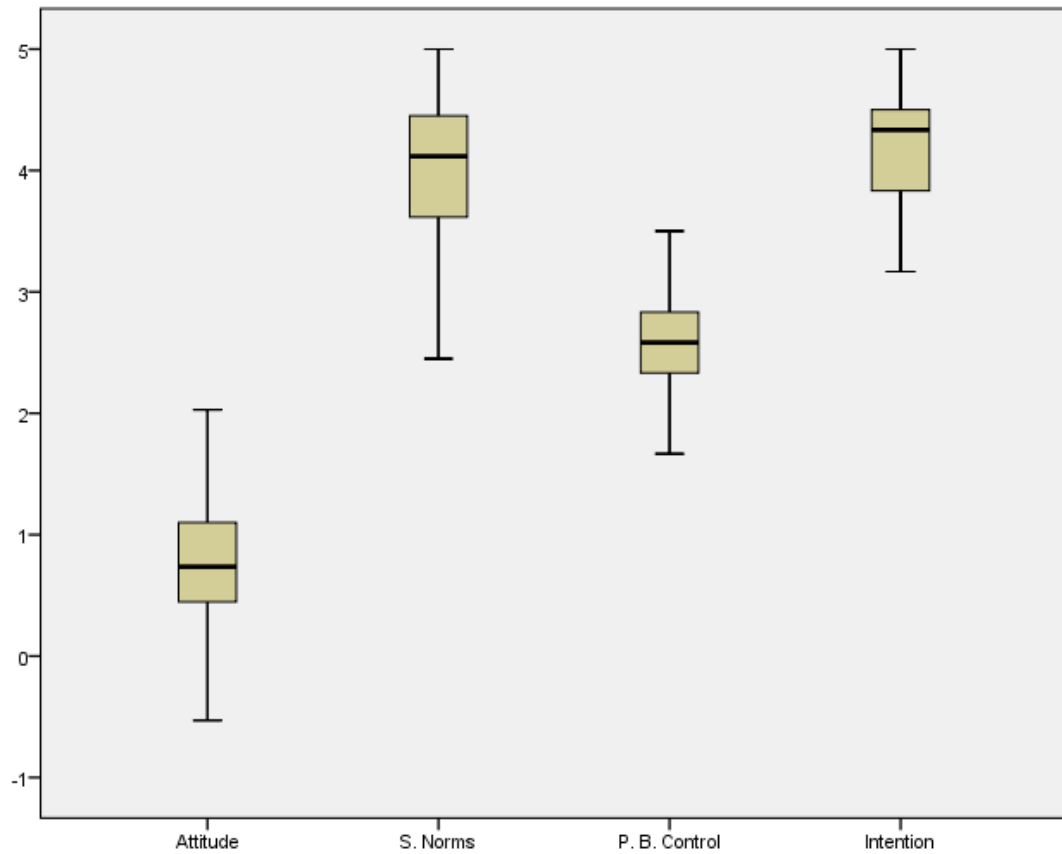


Figure 6-3: Boxplot for the mean scores of the main variables for the EEPs group at time 2



6.7.4 Hypothesis H4

H₄: There is a difference in attitude toward self-employment (H4a), subjective norms (H4b), perceived behavioural control (H4c) and intention to become self-employed (H4d) when Pre-test and Post-test periods are compared in the Control Group.

6.7.4.1 Control Group

Again, a repeated measures paired-samples t-test (Table 6.41 and Figures 6.4-6.6) was conducted for the Control Group; this was done by comparing the scores of each variable at the Pre-test and the Post-test. The results showed no significant differences or any improvements at the Post-test.

The boxplots (Figures 6.5 and 6.6) reflected the distribution of the results in all variables at time t1 (pre-test) and t2 (post-test) when considering the control group, variables' at both times showed similar distribution at both sides of the median score, although some variables were more positively skewed and other leaning towards negative skew. However, there were no very extreme values, which suggested that all variables were within acceptable normal distribution.

Results of paired-samples T –tests showed no significant differences in the mean scores of the attitude towards self-employment $T(183)=-1.33, p>0.182$ (Pre-test =0.59 Post-test =0.43), subjective norms $T(183)=-0.969, p>0.334$ (Pre-test =3.40, Post-test =3.34), perceived behavioural control $T(183)=-1.157, p>0.249$ (Pre-test =2.63, Post-test =2.59) or intention to become self-employed $T(183)=1.12, p>0.263$ (Pre-test =2.98, Post-test =3.18). Therefore, the hypothesis H4 was completely rejected i.e. hypotheses H4a-d were rejected (Table 7-1).

Table 6-41: T-test Results at Pre and Post Tests for Control Group

Paired Samples Test									
Variables		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Attitude to Self-employment Post-test Attitude To self-Employment. Pre-test	-.15184	1.53894	.11345	-.37568	.07200	-1.338	183	.182
Pair 2	Subjective Norm. Post-test Subjective Norms. Pre-test	-.08696	1.21741	.08975	-.26403	.09012	-0.969	183	.334
Pair 3	Perceived Behavioural Control. Post-test Perceived Behavioural Control Pre-test	-.11051	1.29552	.09551	-.29894	.07793	-1.157	183	.249
Pair 4	Intention. Post-test Intention. Pre-test	.10960	1.32324	.09755	-.08287	.30207	1.124	183	.263

Figure 6-4: Mean Score for Each of the Variables amongst the Control Group

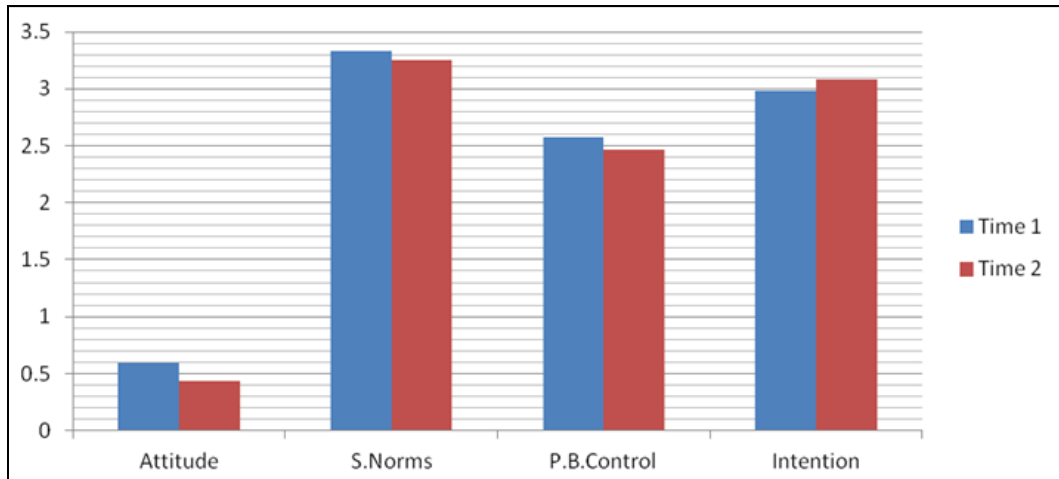


Figure 6-5: Boxplot for the mean scores of the main variables for the control group at time 1

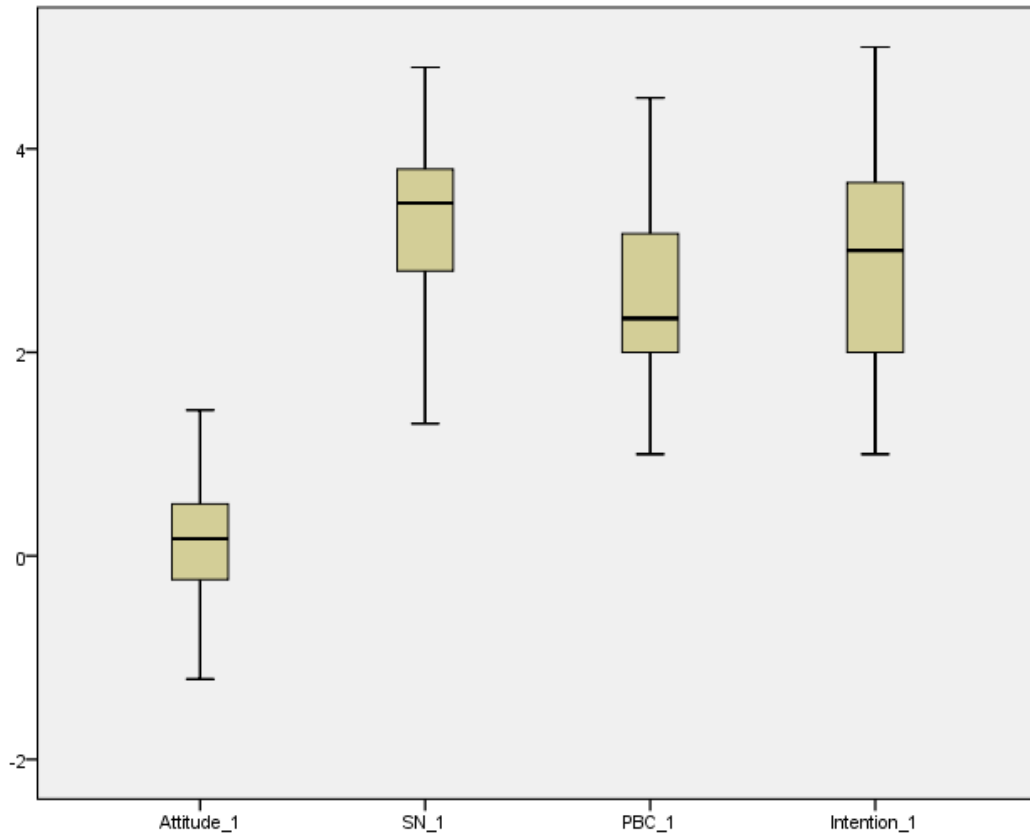
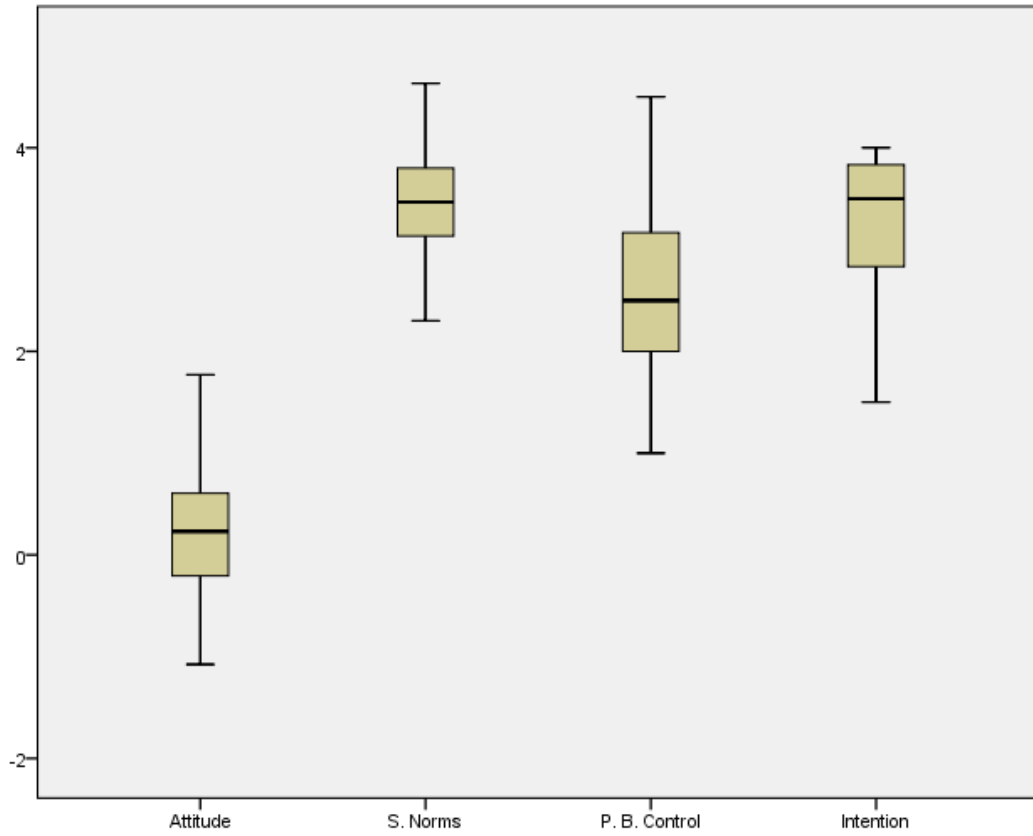


Figure 6-6: Boxplot for the mean scores of the main variables for the control group at time 2



6.7.5 Hypothesis H5

H₅. The greater the learning from the EEP, the higher the post-programme improvement in the student's attitude toward self-employment (H5a), subjective norms (H5b), perceived behavioural control (H5c) and intention to become self-employed (H5d).

6.7.5.1 EEPs Group

Pearson's correlation (r) coefficients (Table 6.42) were used to test hypothesis H5. Learning from modules was found to be statistically significant and positively correlated with attitude towards self-employment (Post-test: $r=0.186$ $p<0.01$), subjective norms (Post-test: $r=0.208$ $p<0.01$), perceived behavioural control ($r=0.122$, $p<0.05$) and intention to become self-employed Post-test: $r=0.154$ $p<0.05$). Hence, these results provided evidence in support to accept the hypothesis H5.

Table 6-42: Pearson's Correlation for Learning

Variables	EEPs Group	Control Group
	Learning (r)	Learning (r)
Attitude towards self-employed-Post-test	0.186**	0.100
Subjective Norm- Post-test	0.208**	0.155*
Perceived behavioural control- Post-test	0.122*	0.105
Intention to become self-employed- Post-test	0.154*	0.010

Correlation significant at the 0.05* or 0.01** level

In predicting the learning from EEPs, regression analysis (Table 6.43) showed an adjusted R^2 coefficient of Post-test: $R^2_{adj}=0.062$, $p=0.01$. The resulting standardised beta (β) coefficients showed that attitude towards self-employment (Post-test: $\beta=0.138$, $p=0.003$) and subjective norms (Post-test: $\beta=0.153$, $p=0.002$) were significant predictors of how much students learn from EEPs ($p<0.01$). However, perceived behavioural control (Post-test: $\beta=0.064$, $p=0.172$) and intention to become self-employed (Post-test: $\beta=0.028$, $p=0.584$) were not found to be significant predictors of learning. However, the results of the regression

analysis did not completely meet the conclusions made on the basis of Pearson's correlations results (Table 6-42) in the above paragraph. Therefore, the hypothesis H5 was partially accepted i.e. H5a and H5b were accepted whereas H6c and H6d were rejected (Figure 6.7, Table 7-1).

Table 6-43: Regression Analysis for Predictors of Students' Learning

Variables	EEPs Group		Control Group	
	Std. Beta (β)	Sig (p)	Std. Beta (β)	Sig (p)
Attitude towards Self-Employment-Post-test	0.138	0.003	0.099	0.207
Subjective Norm- Post-test	0.153	0.002	0.144	0.075
Perceived Behavioural Control- Post-test	0.064	0.172	0.094	0.247
Intention to become Self Employed-Post-test	0.028	0.584	0.124	0.141
Adjusted R ²	0.062	0.000	0.022	0.092

6.7.5.2 Control Group

Using the Pearson's correlation (r) coefficients (Table 6.42) for the Control Group, a significant positive correlation was found between learning from modules and subjective norms (Post-test: $r=0.155$, $p<0.05$). However, no significant correlations were found between learning and the other variables: perceived behavioural control (Post-test: $r=0.105$, $p>0.05$), intention to become self-employed (Post-test: $r=.01$, $p>0.05$) and attitude towards self-employment Post-test =0.100, $p>0.05$).

The Control Group did not undertake EEPs and the regression analysis results (Table 6.43), also conducted using the same predictors as in the EEPs Group, showed not significant adjusted R^2 coefficient ($R^2_{adj}=0.022$, $p=0.092$). In addition, the resulting standardised beta (β) coefficients showed that attitude towards self-employment (Post-test: $\beta=0.099$, $p=0.207$), subjective norms (Post-test: $\beta=0.144$, $p=0.075$), perceived behavioural control (Post-test: $\beta=0.094$, $p=0.247$) and intention to become self-employed (Post-test: $\beta=0.124$, $p=0.141$) were not significant predictors of learning from modules.

Thus, overall, hypothesis H5 was partially accepted i.e. H5a and H5b were accepted whereas H6c and H6d were rejected (Figure 6.7, Table 7-1).

6.7.6 Hypothesis H6

H₆. The greater the inspiration from the EEP, the higher the student's post-programme improvement in attitude toward self-employment (H6a), subjective norms (H6b), perceived behavioural control (H6c) and intention to become self-employed (H6d).

6.7.6.1 EEPs Group

Inspiration is significantly correlated with all the variables, as shown in Table 6.44. A significant correlation was found between inspiration and attitude towards self-employment (Post-test: $r=0.162$, $p<0.05$), subjective norms (Post-test: $r=0.152$, $p<0.05$), perceived behavioural control (Post-test: $r=0.120$, $p<0.05$) and intention to become self-employed (Post-test: $r=0.239$, $p<0.01$). This clearly indicated that the higher the inspiration, the higher the attitude, subjective norms, perceived behavioural control and intention to become self-employed. Hence, it was concluded that hypothesis 6 was accepted.

In the second step, in predicting the students' inspiration from EEPs, the regression analysis (Table 6.45) showed significant adjusted R^2 coefficient at Post-test: $R^2_{\text{adj}}=0.062$, $p=0.01$. The resulting standardised beta (β) coefficients showed that attitude towards self-employment (Post-test: $\beta=0.095$, $p=0.039$) and intention to become self-employed (Post-test: $\beta=0.177$, $p=0.001$) were the only significant predictors of students' inspiration. The Subjective norms (Post-test: $\beta=0.051$, $p=0.292$) and perceived behavioural control (Post-test: $\beta=0.036$, $p=0.442$) were not found to be significant predictors of inspiration. Hence, these results confirmed that attitude and intention to become self-employed can predict learning from EEPs, while perceived behavioural control and subjective norms cannot.

6.7.6.2 Control Group

For the Control Group, no significant correlations (Table 6.44) were found between the inspiration variables and attitude towards self-employment (Post-test: $r=-0.006$, $p>0.05$), subjective norms (Post-test: $r=0.029$, $p>0.05$), perceived behavioural control (Post-test: $r=0.112$, $p>0.05$) and intention to become self-employed (Post-test: $r=-0.007$, $p>0.05$). This indicated that inspiration was not seen to influence any of the variables in the Control Group. This evidence may reflect the success of the EEPs; hence, it was used as a support to partial acceptance of hypothesis H6 i.e. H6a and H6d were accepted whereas H6b and H6c were rejected (Figure 6.7, Table 7-1).

Table 6-44: Pearson's Correlation Coefficients for Inspiration

Variables	Experimental group	Control group
	Inspiration (r)	Inspiration (r)
Attitude towards self-employment-Post-test	0.162*	-0.006
Subjective Norm- Post-test	0.152*	0.029
Perceived behavioural control- Post-test	0.120*	0.112
Intention to become self-employed- Post-test	0.239**	-0.007

Correlation significant at the 0.05* or 0.01** level

Results of regression analysis (Table 6.45), conducted to predict the students' inspiration from their courses, showed not significant adjusted R^2 coefficient at Post-test: $R^2_{adj}=0.007$, $p=0.597$. The resulting standardised beta (β) coefficients demonstrated that attitude towards self-employment (Post-test: $\beta=-0.002$, $p=0.977$), subjective norms (Post-test: $\beta=0.006$, $p=0.945$), perceived behavioural control (Post-test: $\beta=0.131$, $p=0.112$) and intention to become self-employed (Post-test: $\beta=-0.056$, $p=0.510$) were not found to be significant predictors of students' inspiration.

Table 6-45: Regression Analysis for Inspiration

Variables	Experiment group		Control group	
	Std. Beta (β)	Sig (p)	Std. Beta (β)	Sig (p)
Attitude towards Self-employment	0.095	0.039	-0.002	0.977
Subjective Norms	0.051	0.292	0.006	0.945
Perceived Behaviours Control	0.036	0.442	0.131	0.112
Intention to Become Self-Employed	0.177	0.001	-0.056	0.510
Adjusted R^2	0.062	0.000	0.007	0.597

These results revealed that the greater the inspiration from EEPs, the higher the students' post-programme increase and improvement in attitude toward self-employment (H6a) and intention to become self-employed (H6d). Hence, hypothesis H6 was partly accepted i.e. H6a and H6d were accepted whereas H6b and H6c were rejected (Figure 6.7, Table 7-1).

6.7.7 Hypothesis H7

H₇. The more university incubation resources that are offered during the EEP, the higher the student's post-programme increase and improvement in attitude toward self-employment (H7a), subjective norms (H7b), perceived behavioural control (H7c) and intention to become self-employed (H7d).

6.7.7.1 EEPs Group

Using the Pearson's correlation coefficients (Table 6.46), university incubation resources were found to have significant correlations with attitude towards self-employment (Post-test: $r=0.134$, $p<0.05$), subjective norms (Post-test: $r=0.224$, $p<0.01$), perceived behavioural control (Post-test: $r=0.106$, $p<0.05$) and intention to become self-employed (Post-test: $r=0.214$, $p<0.01$).

Regression analysis (Table 6.47) was also conducted to predict the student's utilisation of the incubation resources offered during an entrepreneurship programme and the results showed a significant adjusted R^2 coefficient at Post-test: $R^2=0.064$, $p=0.01$. The resulting standardised beta (β) coefficients showed that subjective norms (Post-test: $\beta=0.155$, $p=0.001$) and intention to become self-employed (Post-test: $\beta=0.125$, $p=0.015$) were found to be significant predictors of students' utilisation of incubation resources while the attitude towards self-employment (Post-test: $\beta=0.061$, $p=0.184$) and perceived behavioural control (Post-test: $\beta=0.022$, $p=0.646$) were not found to be significant predictors of utilisation of the incubation resources.

These results thus confirmed that only subjective norms and intention to become self-employed can be used as significant predictors of the utilisation of university incubation resources attitude towards self-employment.

6.7.7.2 Control Group

Pearson's Correlations (Table 6.46) revealed that university incubation resources have a significant positive correlation with subjective norms (Post-test: $r=0.175$, $p<0.05$), but they were not significantly correlated with attitude towards self-employment (Post-test: $r=0.026$, $p>0.05$), perceived behavioural control (Post-test: $r=0.070$, $p>0.05$) and intention to become self-employed (Post-test: $r=0.008$, $p>0.05$).

Table 6-46: Pearson's Correlation for University Incubation Resources

Variables	EEPs group Incubation (r)	Control group Incubation (r)
Attitude towards self-employment-Post-test	0.134*	0.026
Subjective Norm-Post-test	0.224**	0.175*
Perceived behavioural control-Post-test	0.106*	0.070
Intention to become self-employed-Post-test	0.214**	0.008

Correlation significant at the 0.05* or 0.01** level

The Control Group did not use the incubation resources offered during their study programmes. Results of the Regression analysis (Table 6.47) showed not significant adjusted R^2 coefficient at Post-test: $R^2=0.013$, $p=0.177$. The resulting standardised beta (β) coefficients showed that subjective norms (Post-test: $\beta=0.186$, $p=0.023$) was a significant predictor. On the other hand, attitude towards self-employment (Post-test: $\beta=0.003$, $p=0.968$), perceived behavioural control (Post-test: $\beta=0.034$, $p=0.675$) and intention to become self-employed (Post-test: $\beta=-0.068$, $p=0.423$) were not found to be significant predictors of students' use of incubation resources. Hence, these results provided supporting evidence for partial acceptance of hypothesis H7 i.e. H7b and H7d were accepted while H7a and H7c were rejected (Figure 6.7, Table 7-1).

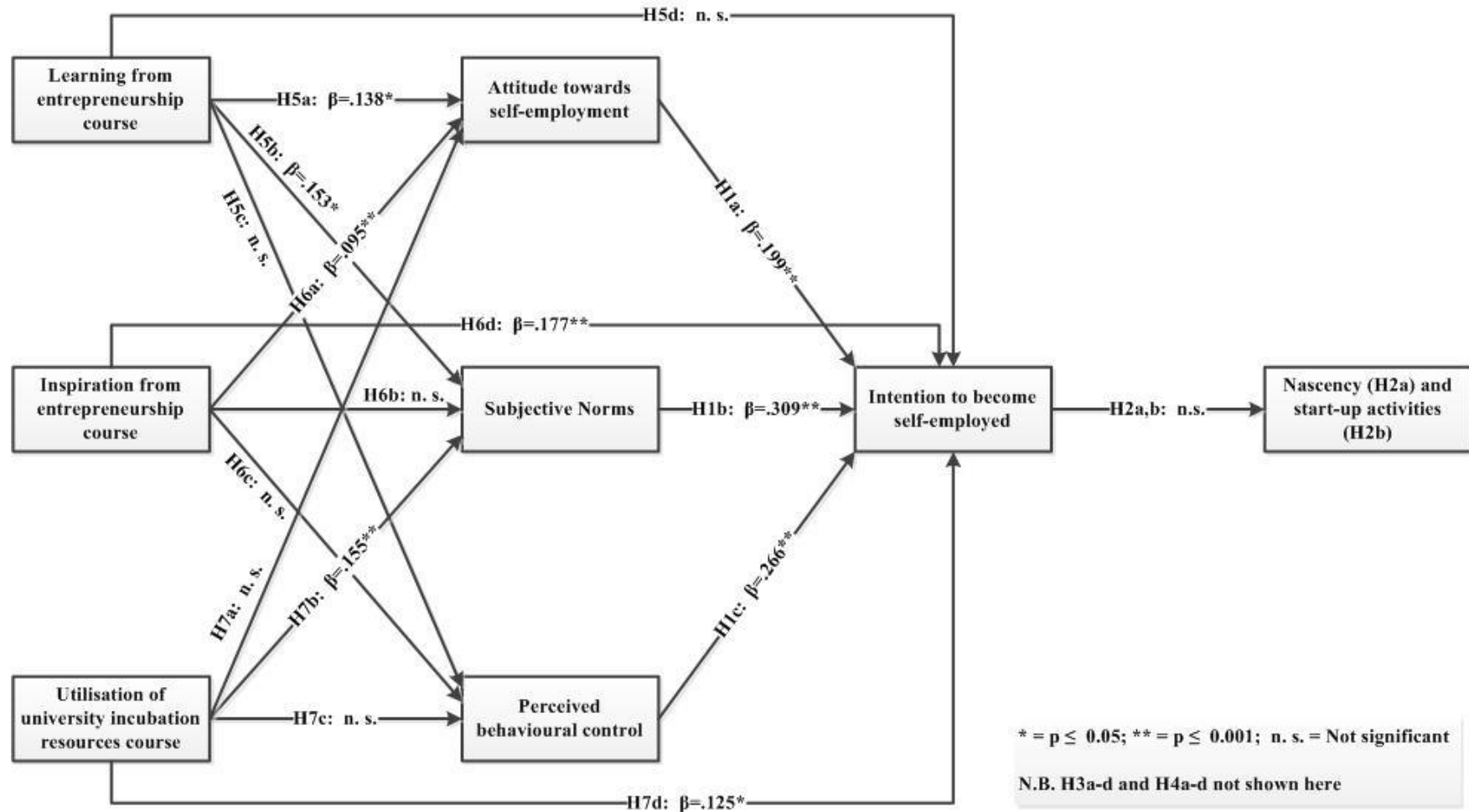
The conceptual model (Figure 6.7) shows the results of hypothetical relationships across all tested variables, based on the main hypotheses presented above. The results revealed that there was a significant positive correlation between intention to become self-employed and attitude towards self-employment ($r=0.294$, $p<0.01$). Similarly, a positive and significant correlation was found between intention to become self-employed and subjective norms after EEPs ($r=0.410$, $p<0.01$), and with perceived behavioural control ($r=0.354$, $p<0.01$). The significant and positive results indicated that the higher the intention to become self-employed, the higher the attitude toward self-employment, subjective norms and perceived behavioural control.

Table 6-47: Regression Analysis for University Incubation Resources

Variables	EEPs group		Control group	
	Std. Beta (β)	Sig (p)	Std. Beta (β)	Sig (p)
Attitude towards Self-employment- Post-test	0.061	0.184	0.003	0.968
Subjective Norms-Post-test	0.155	0.001	0.186	0.023
Perceived Behaviours Control- Post-test	0.022	0.646	0.034	0.675
Intention to Become Self-Employed-Post-test	0.125	0.015	-0.068	0.423
Adjusted R ²	0.064	0.000	0.013	0.177

Learning from the EPPs was found to be statistically significant and positively correlated with attitude towards self-employment (Post-test: $r=0.186$ $p<0.01$), subjective norms ($r=0.208$ $p<0.01$), perceived behavioural control ($r=0.122$, $p<0.05$) and intention to become self-employed Post-test: $r=0.154$ $p<0.05$). Inspiration was significantly correlated with all the variables. A significant correlation was found between inspiration and attitude toward self-employment ($r=0.162$, $p<0.05$), subjective norms ($r=0.152$, $p<0.05$), perceived behavioural control ($r=0.120$, $p<0.05$) and intention to become self-employed ($r=0.239$, $p<0.01$). These results clearly indicated that the higher the inspiration, the higher the attitude, subjective norms, perceived behavioural control and intention to become self-employed. University incubation resources were found to have significant correlations with attitude towards self-employment ($r=0.134$, $p<0.05$), subjective norms ($r=0.224$, $p<0.01$), perceived behavioural control ($r=0.106$, $p<0.05$) and intention to become self-employed ($r=0.214$, $p<0.01$).

Figure 6-7: Post-test EEPs hypotheses - overall results



6.8 Summary

Compared to the Control Group, the EEPs Group (students who undertook EEPs) showed significantly higher scores after the EEPs (post-test) were compared to before the EEPs (pre-test); their scores on intention to become self-employed, attitude toward self-employment, subjective norms and perceived behavioural control were significantly higher following the EEPs. The Control Group did not show such outcomes.

From analysing the data using the Pearson's correlation coefficients, it was concluded that learning from modules showed significant relationships with attitude toward self-employment, subjective norms, perceived behavioural control and intention to become self-employed. Similarly, students' inspiration and utilisation of university incubation resources led to positive relationships. A significant association was found between intention to become self-employed and other variables such as attitude toward self-employment, subjective norms and perceived behavioural control. Finally, intention to become self-employed did not show a significant correlation with the number of start-up activities completed or started after the EEPs. The regression analysis results did not show full support for the results gained from calculation of the Pearson's correlation coefficients across the hypotheses.

This chapter presented the results of this research study. The researcher collected data from five public and private universities in Saudi Arabia that were offering entrepreneurship courses. Two groups of students were selected: students who had selected entrepreneurship education programmes (EEPs Group) and students who had not chosen any entrepreneurship education programmes (the Control Group). Data were collected at two time points: at the beginning of the course (pre-test) and at the end of the course (post-test). After data collection, the researcher followed multiple procedures to infer results from the data. Data were recorded with coding and then screened and cleaned for further tests. The researcher

applied factor loading tests and confirmed the related items of variables, as adapted from the relevant literature. After the exploratory factor loading, inferential statistics were calculated and the hypotheses were tested. The results showed that intention to become self-employed was positively and significantly correlated to the three factors i.e. attitude towards self-employment, subjective norms and perceived behavioural control at Pre-test. However, different results were found at Post-test; at this time, the link between intention to become self-employed and start-up activities were not positively and significantly correlated. Furthermore, the results indicated that entrepreneurial education supported the development of entrepreneurial attitudes.

These findings are discussed in the light of previous published literature in the next chapter.

Chapter 7: Discussion of Findings

7.1 Introduction

The main focus of the study was to investigate the impact of EEPs using the TPB on the development of individuals' (students') attitudes and intentions towards self-employment. The researcher examined the effect of three proposed programme-derived benefits for students: learning from modules, learning from inspiration and university incubation resources. Most prior empirical studies focused on intentions and neglected the study of actual behaviour; to the researcher's knowledge, a few studies included entrepreneurial behaviour in their design (Kolvereid and Isaksen, 2006; Souitaris *et al.*, 2007). There is therefore a need to conduct research on this issue and this researcher proposed that intentions may be predicted by attitudes and that intentions predict behaviours. Thus, the researcher developed a conceptual approach that linked students' attitudes, intentions and behaviour through the evidence of EEPs. This approach was examined through the role of HEIs offering EEPs as an integral part of the enterprise system in Saudi Arabia.

Most studies that have thus far investigated the effectiveness of EEPs have not used a Pre-test and Post-test design, and they have also not included a control group. This means earlier studies suffered from the methodological limitations. Thus the focus of this research was to overcoming the methodological limitations of earlier entrepreneurship research and looking at the relationship between EEPs, the intentions of students and their subsequent entrepreneurial behaviour. The researcher used a quasi-experimental design that consisted of two participant groups: the EEPs Group and the Control Group. The EEPs Group consisted of

participants who were engaged in entrepreneurship courses at degree level and the Control Group consisted of students who were not taking any entrepreneurship courses during their studies. Both groups participated in a Pre-test when starting their courses and a Post-test when finishing their courses.

The researcher was motivated to conduct this study because previous research did not successfully established whether or not EEPs affect intentions and subsequent start-up activities. The results of the present study indicated that intention to become self-employed was positively and significantly related to the attitude towards self-employment, subjective norms and perceived behavioural control for both groups at both time intervals. However, no significant relationships between intention to become self-employed, nascency and start-up activities were found following the EEPs. In addition, the results showed that students' attitudes towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed were higher after taking EEPs. However, for the Control Group, no significant differences or any Post-test improvements in the attitude towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed were found. The results also showed that all three learning aspects i.e. learning from modules, learning from inspiration and university incubation resources were significantly correlated with attitudes towards self-employment, subjective norms, perceived behavioural control and intention. However, perceived behavioural control and intention to become self-employed were not found to be significant predictors of learning for the EEPs Group. Furthermore, attitude and perceived behavioural control were not found to be significant predictors of the student's learning from incubation resources. In the Control Group, subjective norms was the only significant predictor of learning from university incubation resources.

The structure of this chapter is as follows. First, the research context is presented and then the population and sample issues are presented. The second part is concerned with the results of the scale purification. The third part includes the

discussion of all the results is reviewed with reference to the past published literature. Finally, the findings are summarised.

7.2 Population and Sample Issues

The research context focused on the students of public and private Saudi HEIs where EEPs were being offered. In the entrepreneurship literature, samples of students have been very common (e.g. Kolvereid, 1996; Tkachev and Kolvereid, 1999; Kruger *et al.*, 2000; Autio *et al.*, 2001; Veciana *et al.*, 2005; Fayolle *et al.*, 2006; Rae *et al.* 2012). Krueger (1993) used a sample of 126 upper division university students taking business courses. Audet (2000) conducted research on 89 undergraduate students taking entrepreneurship programmes. Zhao *et al.* (2005) used a sample of 265 MBA students at five universities and Souitaris *et al.* (2007) conducted research on 232 science and engineering students. In view of the large number of previous studies using business and engineering students as samples, the researcher decided to conduct this research study with the same types of students. In this study, the sample consisted of 675 students for both groups from graduate and undergraduate business and engineering students and majority of them were aged between 20 and 25 years. In this regard, the researcher selected five universities which were offering EEPs and had an excellent reputation for business and engineering disciplines.

The total number of students who selected EEPs from these public and private universities was 730 (Table 6.13). From them, the researcher distributed questionnaires to 632 students who had started EEPs at the beginning of the semester and again after the completion of the course. The results showed response rates of 81.6 percent for the beginning of the semester and 82.7 percent for the end of the semester for the EEPs (experimental) group. The researcher also selected a population of students of these institutions who were not taking any EEPs in their studies (Table 6.14). The researcher found 312 students in this category (the control group) and distributed questionnaires to them at the

beginning of their semester and again at the end of the semester. Of the 312 questionnaires distributed to non-EEP students, the researcher collected 210 at both time points, showing a response rate of about 67 percent for the control group. Comparing these response rates with the literature shows that the response rate reported by Cheng *et al.* (2006) was 20.3%, Laitinen (2002) reported 10.8%, Yousafzai (2005) had 21.8 percent and Souitaris *et al.* (2007) reported 55.3 percent and well known researchers like Rae *et al.* (2012) reported 51 percent for undergraduates and 49 percent at postgraduate level. Hence, the response rate of this study could be considered relatively high. The sample was large in order to allow the researcher to examine the correlations reliably and to predict the power of factors (Tabachnick and Fidell, 2007; Hair *et al.*, 2010). In the literature, a sample sized 50–100 is considered to be poor, 200 is fair, 300 is good and 500 or higher is very good (Comery and Lee, 1992). Therefore, the sample size in the present study can be categorised as good.

To extract proper results, the accuracy of the data of participants sample is very important in social science research. Hair *et al.* (2010, pp. 42-43) stated that the objective of data screening is as much about revealing what is not apparent as it is about portraying the actual data, as the “hidden” effects are easily overlooked. Thus, screening of data is an initial step used to determine the accuracy and to make the data set error free. The screening process of participants’ objectives starts with checking for errors that are related to the scores of variables that are out of range. The researcher then looks for issues with any missing data, outliers, linearity, normality and homoscedasticity (Tabachnick and Fidell, 2007; Hair *et al.*, 2010).

Missing data from the participants sample is considered to be one of the most important issues because it can result in large variance, which may cause bias and limit the generalisability of the results. Researchers have different opinions on how to deal with the missing data. For example, Stevens (1992) suggested applying the mean of the scores to the variance and Norusis (1995) supported the removal of the cases who did not respond. Tabachnick and Fidell (2007, p. 63)

suggested that if only a few data points, say 5 percent or less, are missing in a random pattern from a large data set, the problem is less serious and almost any procedure for handling missing values yields similar results.

In this study, the researcher found that less than 5 percent (Appendix-3) of the total sample was missing data: In the EEPs Group, there were 13 missing Pre-test samples and 15 missing Post-test samples; for the Control Group, there were 12 missing Pre-test samples and 11 missing Post-test samples. Hence, these were removed from the sample because a large amount of data was available, so the removal of samples would not have a substantial impact on the outcome of the analysis.

After deletion of the missing data, the researcher searched for outliers from all the data sets. As is often seen, outliers may have an impact on the analysis and can bias the mean and inflate the standard deviations (Field and Hole, 2003). Thus, researchers should be aware of the existence of any outliers in their data sets (Field, 2005). If outliers are located, researchers must behave accordingly to ensure the outliers have no effect on their statistical inferences. In this research, the researcher applied a graphical method for detecting univariate outliers and the Mahalanobis distance- D^2 test was applied for detecting multivariate outliers. In the EEPs Group, the researcher found six and five univariate outliers in the Pre-test and Post-test data, respectively. However, in the Control Group, three and four cases in the Pre-test and Post-test data were found, respectively. These cases were confirmed through multivariate outliers test conducted by the Mahalanobis distance test and found all cases from univariate outliers correct. These cases were taken out from the study.

Finally, the researcher matched the participants of the EEPs Group and found that six participants of the study at the Pre-test stage did not participate at the Post-test stage, and 12 participants at the Post-test stage did not participate at the Pre-test stage. For the Control Group, the researcher found 11 participants of the study at the Pre-test stage did not participate at the Post-test stage, and ten students at the Post-test stage did not participate at the Pre-test stage. The researcher decided to

remove all these non-matched participants from the study. Finally, the researcher was left with a selected sample of data from 491 participants for the EEPs Group and 184 for the Control Group at both the Pre-test and Post-test stages, totalling 675 participants in this study.

7.3 Measurement Scale Purification

The main purpose of this research was to examine the EEPs' effect on students' attitudes and intentions towards self-employment. The researcher used a questionnaire to measure this. To ensure the questionnaire could be understood, it was translated into the participants' native Arabic language. The questionnaire was translated and adapted from the questionnaires developed and validated by Carter *et al.* (1996), Kolvereid (1996), Alsos and Kolvereid (1998) and Souitaris *et al.* (2007). It provided measures of attitudes regarding the behaviour, subjective norms, perceived behavioural control and intention pre and post EEPs. All items used in the questionnaire related to some characteristic of EEPs and were based on relevant theories such as the TPB. Similar questionnaires have been used by researchers such as Johannisson (1991), Zahra (1993) and Souitaris *et al.* (2007). A few demographic and background questions about the participants were also included. The researcher used five-point Likert scales (minimum = 1, maximum = 5) for the main questions.

For this research, the first Likert scale measured attitudes towards organisational employment and included five factors: security, work load, social environment, avoidance of responsibility and career development. The second Likert scale measured attitudes towards self-employment and included six factors: economic opportunity, challenge, autonomy, authority, self-realisation and ability to participate in the whole process. Other Likert scales measured the subjective norms, perceived behavioural control, intention to become self-employed, learning from modules, learning from university incubation resources, learning

from inspiration and start-up activities, which included nascency, business planning, financing the new firm and interaction with the external environment.

The first issue in the scale purification was to refine the items that were pooled for the various scales. In a quantitative approach, reliable data is ensured through accuracy of measurement. Reliability and validity are needed to evaluate the consistency between measurement items, giving a real depiction of the idea of interest. In business and social science research, the most efficient way to measure the reliability of items related to variables is the Cronbach's coefficient alpha method (Cronbach, 1951; Tabachnick and Fidell, 2007). By applying a Cronbach's alpha reliability test through SPSS (version 19.0) software, the researcher found that all variables confirmed the good reliability of the scales (Cronbach's $\alpha > 0.70$), which ranged from .70 to .90 for the EEPs Group and from .70 to .92 for the Control Group, which proved a high internal consistency of the variable items (Tables 6.15 and 6.16). According to Robison *et al.* (1991) and Sekaran (2000), a Cronbach's α coefficient at 0.7 or above shows consistency between numbers of measurement items for measuring a variable. The Cronbach's alpha results in this study thus reflected accuracy and consistency of the measures.

The validity of measurement scales refers to the internal and external validity of them, relating to whether they reflect real-life experiences and permit the generalisability of the findings. Following Belson (1986), the researcher ensured that the respondents who completed the questionnaire did so accurately and those who failed to return their questionnaire would have been given the same distribution of answers as the returnees. In this study, the validation procedure yielded satisfactory results because all the respondents completed the questionnaire accurately; thus, there was no problem with the validity of the survey in this research.

Furthermore, the factor analysis technique was used to reduce the information to obtain a set of new composited factors or clusters of items of variables. This was done to understand the structure of the set of variables and to construct a questionnaire to measure any underlying (latent) variables. By applying the

exploratory factor analysis technique through SPSS, the researcher confirmed the factor loading of the group of measurement items related to the factors.

Numerous techniques were used to assess the adequacy of the extraction and the number of factors to confirm the appropriate results. First, Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity (BTS) tests were conducted to examine the sampling adequacy: a value greater than .6 suggested a statistically significant relationship between the measurement variables (Appendix 6). Two parts of the survey of both groups i.e. the EEPs Group and the Control Group were tested. In the first part of both groups at Pre-test researcher applied 33 items related to 11 factors and found in 11 factors (Tables 6.18, 6.22). Continuing factor loading for the second part of both groups at Pre-test the researcher applied 15 items related to three factors and confirmed three factors (Tables 6.26, 6.30). However, for the Post-test both groups were assessed where 33 items consisting of 11 factors were used in the first part and the results showed loading on 11 factors (Tables 6.20, 6.32). For this purpose the second part consisted of 33 items for six factors and the results showed loading on six factors (Tables 6.33, 6.37). The results revealed that the KMO values were greater than 0.6 (60%) and Bartlett's test was significant ($p < .005$), which satisfied the initial assumptions; therefore, the factor analysis was appropriate in this study (Appendix-6).

To confirm the above results, the researcher applied other tests like eigenvalue calculation and scree plots to assess the adequacy of the extraction and the number of extracted factors. Furthermore, communality is one of the important measures of the variance. The results for both parts of the survey for both groups at both times show communalities above .5 and a range from .500 to .914. The results showed that all given measurement items had a valid amount of the variance and that the items from original variables were shared with the same variables (Appendix-7).

In the EFA, the principal component extraction method was applied using SPSS. In the EEPs Group at the Pre-test stage for the first part of the survey, the results showed that the original items were loaded onto 11 factors with eigenvalues

greater than 1, the high value of the component SERE explained 23.2 percent of the variance and the lowest one explained 3.056 percent of the variance. The total variance explained was 71.7 percent (Tables 6.17). In the EEPs Group at the Pre-test stage for the second part of the survey, 15 items were tested and loaded onto three factors with eigenvalues greater than 1; the results showed that the high value for the component PEBC explained 61.2 percent of the total variance (Tables 6.25). However, at the Post-test stage for the EEPs Group for the first part of the survey, 11 factors had eigenvalues greater than 1; the highest variance was extracted from the WOLO component that explained 23.4 percent of the variance. The cumulative variance explained by 11 factors was 75.6 percent (Tables 6.19). However, in the second part of the survey, 33 items were used and six factors consisted on 25 original items were extracted with eigenvalues greater than 1. The results showed high variance from the LEMO component, which explained 21.9 percent of the variance. All six variables explained the cumulative variance by 67.5 percent (Tables 6.27).

At the Pre-test stage for the first part of the survey for the Control Group, the results showed that 11 constructs extracted from 33 items loaded with eigenvalues greater than 1. The results showed that the high value of component CHAL explained 20.3 percent of the variance and all constructs had a variance of 78.4 percent. For the second part of the survey, 15 items were tested and loaded onto three factors with eigenvalues greater than 1. The high value of component PEBC explained 27.2 percent of the variance, with the total variance explained was 69.8 percent. However, at the Post-test stage in the second part of the survey for the Control Group, the results showed 11 factors with eigenvalues greater than 1 that were extracted from 33 items; the highest variance was extracted from component CHAL, which explained 20.9 of the variance. The cumulative variance explained by 11 factors was 78.8 percent. However, at the Post-test stage for the second part of the survey, 33 items were applied and six of the factors extracted had eigenvalues greater than 1. The results showed that the high value of the LEMO component that explained 25.7 percent of the variance; all six variables explained the cumulative variance by 71.1 percent (Tables 6.21, 6.23, 6.29, 6.31).

The above results showed the high adequacy of the extraction through the eigenvalues and the high variance among the variables. In all constructs, dimensionality was found and all factors were loaded onto almost the same group: the factors of Security (SECU), Social Environment (SOEN), Avoid Responsibility (AVRE), Career (CARE), Economic Opportunity (ECOP), Challenge (CHAL), Autonomy (AUTO), Authority (AUTH), Self-Realisation (SERE), Participation (PAPR), Inspiration (INSP) and Learning from Modules (LEMO) were loaded on their original items. However, Workload (WOLO) was loaded with five original items at the Post-test stage and four factors at the Pre-test stage for the EEPs Group. For Subjective Norms (SUNO), five out of six original factors were loaded for the EEPs Group at the Pre-test and Post-test stages, and for the Control Group at the Pre-test and Post-test stages, four original factors were loaded. Perceived Behaviour Control (PEBC) was loaded with four original factors for the EEPs Group at the Pre-test and Post-test stages and three original factors were loaded for the Control Group at the Pre-test and Post-test stages. For Occupation Status Intention (OCSI), three original factors were loaded for both groups at both times. For University Incubation Resources (UPRI), five factors out of 11 items from both groups at the Post-test stage were loaded. All items had loading values above the required acceptable value of .5.

In conclusion, the researcher confirmed that the items that were adapted for constructs in another culture and ensured the applicability of the adapted scales. The results theoretically and operationally confirmed the validity and reliability of the scales and testing of these variables.

7.4 Participants' Demographic Characteristics

Results of the demographic characteristics of participants revealed that the majority of the participants for both groups was Bachelor's students (93.7 percent for the EEPs Group and 92.4 percent for the Control Group). This was not surprising because of the nature of the research study. The researcher of the study

has selected the participants who were studying in the HEIs for the bachelor degree programmes. The results also revealed that the majority of the respondents for the EEPs Group (54%) and the Control Group (68.5%) were male (Tables 6.13, 6.14). This was because Saudi Arabian culture is a male dominated society and males are pursuing higher education for their careers. Saudi females in the labour force are considered to be of very low status (Achoui, 2009). However, Saudi women are trying to get jobs in the government sector and finding jobs in Saudi Arabia is becoming more difficult nowadays. In recent years, the chances to be a government employee have become much smaller because of the large population, high unemployment rate and job saturation. Demographic data showed that Saudi society is among the fastest-growing young societies of the world: its population grew by more than 3.2 percent in the last three decades, rising from 7.3 million in 1975 to 27.14 million in 2010 (CDSI, 2011). Highly educated employees are now occupying middle-level posts and, as education is becoming more widespread, competition is becoming greater.

In addition, the participants were mainly aged between 20 and 25 years: 80 percent for the EEPs Group and 69 percent for the Control Group. These results showed that the majority of the EEPs participants were adults who were interested in developing attitudes and intentions towards being self-employed and the majority of the Control Group was not interested in developing attitudes and intentions towards being self-employed (Tables 6.13, 6.14).

7.5 Discussion of Results

Entrepreneurship provides individuals a remarkable distinction with the freedom to pursue their own goals, dreams and desires in the creation of a new firm (Fauchart and Gruber, 2011). The present study was conceptualised with the support of the relevant entrepreneurship literature. The researcher proposed that understanding attitudes can be used to understand people's responses towards things, places, people or activities but especially towards starting up a business.

Following the TPB (Ajzen, 1991), a conceptual framework was developed to focus on the impact of EEPs for the development of attitudes and intentions towards being self-employed. The literature provided support for a role of entrepreneurship education in improving interest in entrepreneurial careers (Fleming, 1994; Kolvereid, 1996). The literature suggested that people who start their own businesses tend to have a higher level of education than people who do not (Bowen and Hisrich, 1986; Borjas, 2000; Parker, 2004; Rae *et al.*, 2012). However, EEPs have recently been found to influence both the current behaviour and the future intentions (Krueger and Carsrud, 1993; Kolvereid, 1996; Autio *et al.*, 1997; Kolvereid and Moen, 1997; Tkachev and Kolvereid, 1999; Fayolle, 2002; Fayolle *et al.*, 2006). An individual with high levels of knowledge and skills tends to have relatively greater intentions to start up a new business. The present researcher proposed that the more education a person has regarding entrepreneurship, the more s/he may develop intention to become self-employed.

From a theoretical perspective, researchers have largely considered motivation theory in this context, whereby attitude has been considered to have a positive impact on the development of behaviour (Kuratko and Hodgetts, 2001). It is true that attitude reflects a tendency towards favourable or unfavourable behaviour regarding an objective. In considering objectives, researchers have used the psychological TPB for predicting individuals' intentions towards behaviour. Many researchers have theoretically and empirically tested the TPB with entrepreneurship and self-employment as the target behaviour (Bygrave, 1989; Robinson *et al.*, 1991; Kolvereid, 1996a; Krueger *et al.*, 2000; Luthje and Franke, 2003; Souitaris *et al.*, 2007; Hoie *et al.*, 2010; Armstrong and Hird, 2009; Martin *et al.*, 2010; Baker and White, 2010; Cameron *et al.*, 2012; Ferreira *et al.*, 2012). The main focus of this theory is that individuals' intentions are cognitive representations of the desires of individuals to perform a given behaviour. Importantly, behaviour has been claimed to be determined by three important determinants i.e. attitudes towards the behaviour, subjective norms and perceived behavioural control. Following the TPB, the present researcher hypothesised that

these factors would support students in developing entrepreneurial intentions and attitudes through EEPs at the HEIs.

7.5.1 Entrepreneurial Attitudes and Intentions

In this study, the researcher examined the link between students' attitudes (towards self-employment, subjective norms and perceived behavioural control) and intentions to become self-employed. This study taking the field a step forward explored the role of HEIs in entrepreneurship education, particularly in Saudi Arabian culture.

The results revealed that the intention to become self-employed was found to have a statistically significantly correlation with attitude towards self-employment, subjective norms and perceived behaviour control at both the pre and post-course stages. Indeed, most of the correlations between entrepreneurial intention and each of its hypothesised determinants were significant and in the expected direction. The significant and positive results indicated that the higher the intention to become self-employed, the higher the attitude towards self-employment, subjective norms and perceived behavioural control. In addition, the regression analysis results confirmed that all three aspects i.e. attitude towards self-employment, subjective norms and perceived behavioural control are significant predictors of intention to become self-employed. Thus, Hypothesis H1 was fully accepted i.e. H1a, H1b and H1c were accepted (Table 7-1).

In this study, these three factors explained 24 percent and 36 percent of the variance of the intention to become self-employed at the Pre-test and Post-test stages, respectively. However, overall, the models explained about 24 percent of the variance of the intention to become self-employed (Tables 6.33, 34, 35, 36, 37). To give an overview of the variance in prior studies, Tkachev and Kolvereid (1999) reported 45 percent of the variance in entrepreneurial intention; Krueger *et al.* (2000) reported 35 percent, Kolvereid and Isaksen (2006) stated 21 percent, Souitaris *et al.* (2007) reported 35 percent; Grid and Bagraim (2008) observed 27

percent; and Linan and Chen (2009) reported 55.5 percent of the variance of the intention to become self-employed.

The results of the present study reflect the findings reported in the published literature. For example, the finding that attitude, subjective norms and perceived behavioural control have significant effects on entrepreneurial intentions was in agreement with previous studies (Kolvereid, 1996a; Tkachev and Kolvereid, 1999; Autio *et al.*, 2001; Fayolle *et al.*, 2006; Souitaris *et al.*, 2007; Gelderen *et al.*, 2008; Gird and Bagraim, 2008). Additionally, Krueger *et al.* (2000), Luthje and Franke (2003), Robinson and Doverspike (2006), Fayolle *et al.* 2006, Souitaris *et al.*, (2007), Jawahar and Kisamore (2010) and Ferreira *et al.* (2012) had empirically confirmed the relationship between attitudes and intentions towards self-employment. In the present study, the researcher has confirmed the same results in the culture of Saudi Arabian higher education, where EEPs have been identified as an integral part of self-employment.

In view of hypothesis H2 (H2a and H2b)) (Tables 6.38, 6.39), the researcher found no significant correlation between intention to become self-employed and nascency at the end of the semester for both the EEPs Group and the Control Group. Furthermore, the results of the Pearson's *r* correlation test showed no significant correlation between intention to become self-employed and number of start-up activities completed. After the correlation test, the researcher applied a regression test and confirmed that the impact of EEPs on entrepreneurial intentions was not significant.

Hypothesis H2 stated that at the end of EEPs students' intentions to become self-employed would be greater and thus their propensity to become nascent entrepreneurs (H2a) and start up activities (H2b) would be higher. In view of the results, hypothesis H2 was rejected i.e. H2a and H2b were rejected (Table 7-1). These results adhere to the literature, in which researchers like Krueger and Dickson (1994), Davidson (1995), Kolvereid (1996b), Hmieleski and Baron (2009) and Fauchart and Gruber (2011) reported that perception of opportunity, social influences and experience may affect the intention and decision to start a

new business. Boyd and Vozikis (1994) found that entrepreneurial intentions increase when the level of self-efficacy of individuals grows. This was also supported by Tkachev and Kolvereid (1999), who argued that role is a dominant factor in the prediction of status choice (self-employed or employee). Furthermore, the role of education and teaching variables has been identified regarding the development of perceptions (Shapero and Sokol, 1982). Of great importance in the TPB is an education programme that has a positive impact on the antecedents of intention (Krueger and Carsrud, 1993). Earlier assumptions of the TPB may be better suited to investigating entrepreneurial intentions rather than entrepreneurial behaviour, and researchers like Katz (1990), Kolvereid (1996), Autio *et al.* (2001) and Souitaris *et al.* (2007) have pointed out the need to investigate the link between intentions and behaviour.

In the literature, the link between the antecedents of intentions and entrepreneurship behaviour is less clear and few studies have proven it (Krueger and Dickson, 1994; Davidsson, 1995; Kolvereid, 1996b). The entrepreneurship literature shows that nascency-like individual behavioural activities, such as assembling resources and hiring and incorporating a company, are related to the intentions of the individual (Katz and Gartner, 1988; Carter *et al.*, 1996; Alsos and Kolvereid, 1998; Foss and Klein, 2008).

In a related line of research, Reynolds (1994) and Souitaris *et al.* (2007) found insignificant relationship between intentions and actions. In the same vein, Luthje and Franke (2003) found that very small numbers of graduates start a business immediately after education. Jones (2011) revealed that 10–20 percent of university graduates around the world studying enterprise / entrepreneurship engage in starting a business during or immediately after graduation.

In this study, the researcher noted that there is an insignificant relationship between entrepreneurial intentions and actions at the end of EEPs, especially in the case of young students. In this study, while the proportion of students who declared intentions towards nascency was substantial (30%), only 147 students from the EEPs Group showed nascency. It is possible that this was the effect of

initial enthusiasm that would dissipate soon after, rather than due to a serious intention to start a business. The researcher therefore suggests that longitudinal studies that follow the subjects several years after graduation are the only way to prove with accuracy the link between intention and behaviour (Kolvereid, 1996a). Further research is certainly needed to better establishing the link between the antecedents of intentions and entrepreneurial behaviour. The results of this study do not support the link between intention towards self-employment and nascency (positioned as an intermediate pre-venture phase).

In this study, hypothesis H3(a-d) (Table 6.40 and Figures 6.1) was proposed, which argued that after taking EEPs, students' attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed would be higher than at the beginning of the EEPs. The results of the t-test showed that EEPs resulted in significant improvements in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed. These significant results indicated that hypothesis H3 was reliable and it should be fully accepted i.e. H3a, H3b, H3c and H3d (Table 7-1).

In this study, the researcher proposed hypothesis H4(a-d) (Table 6.41 and Figure 6.2) as follows: there will also be differences in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed when the pre- and post-test periods are compared for the Control Group. The results showed no significant differences or any improvements at time two (post –test) in these aspects. Therefore, hypothesis H4 was completely rejected i.e. H4a, H4b, H4c and H4d were rejected (Table 7-1).

The literature has shown that entrepreneurship education and its activities are related to the development of graduate careers and employability (Tapscott, 1998; Nabi *et al.*, 2006; Pittaway and Cope, 2007; Millman *et al.*, 2008; Rae *et al.* 2012). The goal of entrepreneurship education is to develop individuals' attitudes and intentions through their talents, creativity to pursue their dreams and desire for a sense of liberty. Many researchers have contended that there is a link

between entrepreneurship education and entrepreneurial attitudes and intentions. Researchers like Robinson *et al.* (1991) have revealed that the TPB addresses the attitude model of entrepreneurship through EEPs as developing individuals' attitudes and intentions. Additionally, Dyer (1994) proposed that specialised courses in entrepreneurship in terms of starting a business might give students the confidence they need to start their own businesses.

In the literature, few studies show the relationship between enterprise education and intentions. For example, Researchers have examined the role of entrepreneurship education in improving the perceived feasibility of entrepreneurship through increasing the knowledge of students, building confidence and promoting self-efficacy (Krueger and Brazeal, 1994); however, the context of this study was a high school student sample rather than a university (Ibid). However, in a recent study of university students, Souitaris *et al.* (2007) found that entrepreneurial education could affect individuals' intentions.

The results of the present study support the literature, in that favourable attitudes to becoming self-employed, subjective norms, perceived behavioural control and intentions to become self-employed were greater after taking the entrepreneurship course. This also supported the notion that there is a change in overall attitudes towards becoming self-employed after taking courses in entrepreneurship.

Table 7-1 Acceptance and Rejection of proposed hypotheses

Main Hypothesis	Sub-hypothesis	Hypothesis explanation	Outcome
H1	H _{1a}	<i>The intention to become self-employed (Entrepreneurial Intention) is positively related to the attitude toward self-employment.</i>	Accepted
	H _{1b}	<i>The intention to become self-employed (Entrepreneurial Intention) is positively related to the subjective norms.</i>	Accepted
	H _{1c}	<i>The intention to become self-employed (Entrepreneurial Intention) is positively related to perceived behavioural control.</i>	Accepted
H2	H _{2a}	<i>After taking an EEP course, there is increased propensity to become a nascent entrepreneur.</i>	Rejected
	H _{2b}	<i>After taking an EEP course, there is a greater number of start-up activities initiated or completed.</i>	Rejected

H3	H_{3a}	<i>After taking an EEP, the student's attitude toward self-employment and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.</i>	Accepted
	H_{3b}	<i>After taking an EEP, the student's subjective norms and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.</i>	Accepted
	H_{3c}	<i>After taking an EEP, the student's perceived behavioural control and intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.</i>	Accepted
	H_{3d}	<i>After taking an EEP, the student's intention to become self-employed will be improved compared to what it was at the beginning of the EEPs.</i>	Accepted
H4	H_{4a}	<i>There is a difference in attitude toward self-employment and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.</i>	Rejected
	H_{4b}	<i>There is a difference in attitude toward subjective norms and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.</i>	Rejected
	H_{4c}	<i>There is a difference in attitude toward perceived behavioural control and intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.</i>	Rejected
	H_{4d}	<i>There is a difference intention to become self-employed when pre- and post-experiment periods are compared in the Control Group.</i>	Rejected
H5	H_{5a}	<i>The greater the learning from the EEPs modules, the higher the post-programme improvement in the student's attitude toward self-employment, and intention to become self-employed.</i>	Accepted
	H_{5b}	<i>The greater the learning from the EEPs modules, the higher the post-programme improvement in the student's subjective norms and intention to become self-employed.</i>	Accepted
	H_{5c}	<i>The greater the learning from the EEPs modules, the higher the post-programme improvement in the perceived behavioural control and intention to become self-employed.</i>	Rejected
	H_{5d}	<i>The greater the learning from the EEPs modules, the higher the post-programme improvement in the student's intention to become self-employed.</i>	Rejected
H6	H_{6a}	<i>The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in attitude toward self-employment and intention to become self-employed.</i>	Accepted
	H_{6b}	<i>The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in subjective norms and intention to become self-employed.</i>	Rejected
	H_{6c}	<i>The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in perceived behavioural control and</i>	Rejected

		<i>intention to become self-employed.</i>	
	H_{6d}	<i>The greater the learning from inspiration from the EEPs, the higher the student's post-programme improvement in intention to become self-employed.</i>	Accepted
H7	H_{7a}	<i>H_{7a}: The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in attitude toward self-employment and intention to become self-employed.</i>	Rejected
	H_{7b}	<i>The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in subjective norms and intention to become self-employed.</i>	Accepted
	H_{7c}	<i>The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in perceived behavioural control and intention to become self-employed.</i>	Rejected
	H_{7d}	<i>The more university incubation resources that are offered during the EEP, the higher the student's post-programme improvement in intention to become self-employed.</i>	Accepted

7.5.2 Benefits of EEPs

Education regarding entrepreneurship is well known as a source of learning in terms of students becoming more creative. Entrepreneurial education supports the development of positive attitudes towards starting a business because they are specialised courses through which entrepreneurs might be encouraged to develop certain behaviour. The literature has shown that EEPs develop perceptions of entrepreneurship. For example, Fayolle *et al.* (2006) and Souitaris *et al.* (2007) tested the impact of entrepreneurial education with the use of the TPB. To this end, the most important factors were students' perception of the attractiveness of starting a business, perceived social pressure, perceived ability, intentions to start a business, trainees' learning, inspiration and the utilisation of incubator resources. The above researchers concluded that trainees' learning and the utilisation of incubator resources did not increase the levels of attitudes, intentions and behaviour. However, subjective norms and intentions were positively related to one of the benefits i.e. inspiration. The present study provides evidence in

general but since it did not measure these factors in different cultures and environments; thus, further studies would be needed in this regard.

In this study, the researcher proposed hypothesis H5(a-d) (Tables 6.42, 6.43) that proposed that the greater the learning from EEPs, the higher the post-programme improvement in students' attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed. The results showed that attitude towards self-employment and subjective norms were significant predictors of how much students learned from the EEPs. However, perceived behavioural control and intention to become self-employed were not found to be significant predictors of learning from modules. For the Control Group, the results showed a significant positive correlation between learning and subjective norms only. There were no correlations found between learning and the other variables of perceived behavioural control, intention to become self-employed and attitude towards self-employment. Therefore, hypothesis H5 was partly accepted i.e. H5a and H5b were accepted and H5c and H5d were rejected (Table 7-1).

In entrepreneurship, learning is necessary for developing skills and knowledge in terms of how to start up a business, problem solving and leadership (Gorman *et al.*, 1997; Henderson and Robertson, 2000; Rae *et al.*, 2012). In the literature, focus has been on learning in terms of whether it is active, its role in sense making, its connection with individual emergence, and articulating and theorising from learning (Cope and Watts, 2000; Cope, 2003, 2005; Rae, 2005). The entrepreneurship learning approach requires the development of critical and analytical thinking among students (Rae, 1997). Thus, researchers are anxious to know how to evaluate the learning from EEPs. With this in mind, a few researchers (like Fayolle *et al.*, 2006) have proposed the use of the TPB in entrepreneurship education to identify the impact of such education on the perceived attractiveness of starting a business, perceived social pressure, perceived ability and intentions to start a business. Souitaris *et al.* (2007) empirically tested the impact of entrepreneurship education on individuals'

learning in terms of developing positive attitudes and intentions towards starting a business and they found that trainees' learning did not increase the levels of attitudes, intentions and behaviour.

However, the results of the present study have revealed that learning has a significant positive relationship with attitude towards self-employment, subjective norms, perceived behavioural control and intentions. The results of this study are consistent with studies like those of Charney and Libecap (2003) and Ramayah and Harun (2005). Thus, these findings demonstrate the importance of attending EEPs or entrepreneurship training in relation to the promotion of entrepreneurship, which will increase students' levels of entrepreneurial intentions.

The researcher also considered the benefits of EEPs in terms of the students getting inspiration from the courses. In this regard, a further hypothesis H6 was conceptualised as: the greater the inspiration from EEPs, the higher the students' post-programme increase in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed. The results of H6a-d (Tables 6.44, 6.45) showed that inspiration is significantly correlated with the variables of attitude towards self-employment, subjective norms, perceived behavioural control and intention towards self-employment. However, the regression analysis results indicated that attitudes and intentions towards becoming self-employed were the only significant predictors of students' inspiration. The factors of subjective norms and perceived behavioural control were not found to be significant predictors of inspiration. The results from EEPs Group confirmed that only attitudes and intentions towards becoming self-employed can predict the inspiration from EEPs.

The results from the Control Group showed no significant correlations between the inspiration variables and attitude towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed. In this group, inspiration was not seen to influence any of the variables. This evidence could reflect the success of the EEPs for the experimental group and could be

used as a support to the hypothesis H6(a-d). In addition, the regression analysis results showed no effect of predictors of the students' inspiration from their courses. Overall, hypothesis H6 was partially accepted i.e. H6a and H6d were accepted while H6b and H6c were rejected (Table 7-1).

Few studies have investigated the role of entrepreneurial inspiration through education. For example, O'Conneide *et al.* (1994) revealed that EEPs are an important way of developing young people's intangible entrepreneurship characteristics, such as the flash of inspiration, the excitement of success, the drive to succeed and the ability to deal with failure. Following the literature, Souitaris *et al.* (2007) empirically tested the benefits of entrepreneurship education and found that trainees' inspiration was positively related to subjective norms and intentions.

The literature tends to have evidence in general but not across different cultures and environments. This present research explored the phenomenon under study in Saudi Arabian culture, where the impact of entrepreneurship education supported the development of individual perceived behavioural control. The results showed a significant correlation between inspiration and attitude towards self-employment, subjective norms, perceived behavioural control and intention towards self-employment in the EEPs Group. These findings may suggest that entrepreneurship education has different benefits in different cultures. The results of the present study are entirely consistent with those of previous studies, such as Edwards and Muir (2005), Birdthistle *et al.* (2007) and Souitaris *et al.* (2007), in that it was found that tutors through EEP play a significant supportive role in influencing and encouraging students in their intentions towards entrepreneurship.

Finally, hypothesis H7(a-c) (Tables 6.46, 6.47) was developed that suggested that: the greater the amount of university incubation resources used during an entrepreneurship course, the more favourable the attitude and subjective norms with respect to becoming self-employed, and the greater the perceived behavioural control and students' intentions to become self-employed. The results revealed that resource utilisation was significantly correlated with attitude towards self-

employment, subjective norms, perceived behavioural control and intention towards self-employment. The regression results showed that subjective norms and intentions were significant predictors of university resource utilisation. However, perceived behavioural control and attitude towards self-employment were found to be statistically insignificant predictors. From the EEPs Group results, it was confirmed that only subjective norms and intention to become self-employed can be used as significant predictors. In the Control Group, the factor of use of university incubation resources had a significant positive correlation with subjective norms only; no significant correlations were found with attitude towards self-employment, perceived behavioural control and intention to become self-employed. In addition, the regression analysis showed that only the factor of subjective norms was a significant predictor of use of incubation resources. Attitudes, perceived behavioural control and intentions to become self-employed were not found to be significant predictors of students' use of incubation resources. Thus, hypothesis H7 was also partially accepted i.e. H7b and H7d were accepted whereas H7a and H7c were rejected (Table 7-1).

Availability of resources is an important aspect for generating new ideas for a business. This can be known through entrepreneurial education. These resources can provide benefits and help with evaluating business ideas and developing them into new ventures. Besides the learning and inspiration benefits of EEPs, students can benefit from the available resources. In terms of resources, numerous elements are involved such as entrepreneurially minded classmates, lecturers, technology transfer officers, practitioners and others might be supportive for the setting up of a new business venture and preparing a business plan. Researchers have supported the idea that during taught courses, students can relate to a group of entrepreneurially minded classmates in order to build a team; they can use plans and get advice from lecturers, technology transfer officers and classmates (Souitaris *et al.*, 2007; Rae *et al.*, 2012).

However, due to competition in the market, control of scarce resources is an essential hurdle in the entrepreneurship and little empirical research has examined

the relationship between utilisation of incubation resources and attitudes and intentions to being self-employed. Souitaris *et al.* (2007) empirically found that resources and incubation are not positively related to subjective norms and intentions. The present researcher tested the same concept but in a different culture and environment i.e. higher education in Saudi Arabia and found that university resource utilisation was significantly correlated with attitude towards self-employment, subjective norms, perceived behavioural control and intention towards self-employment. In this study, the researcher found that benefits of entrepreneurial education with respect to utilisation of resources and incubation have a positive impact on the intention of individuals in Saudi Arabian culture, which is entirely different from results of previous studies that were conducted in different cultures.

In view of the above discussion and with the support of the literature, it is argued that universities are a well-known breeding ground for future entrepreneurs (Bygrave, 2004). There is therefore a need to utilise universities and take advantage of all the resources available in creating an entrepreneurial environment to foster entrepreneurship. The researcher has noted that more students at university are now interested in starting their own businesses due to the current employment pattern in Saudi Arabia. This study revealed that about 30 percent participants showed nascency towards starting up a business as their future career. Additionally, students from Saudi Arabian universities seek quality education and would want to take advantage of the resources there, realising the potential of university for equipping them with the knowledge and entrepreneurial skills necessary for their future careers.

In conclusion, it is argued that entrepreneurship-oriented intentions and attitudes can be enhanced through education, particularly at HEIs (Krueger and Brazeal, 1994; Kolvereid, 1996; Henderson and Robertson, 2000). A wide variety of researchers have confirmed that targeted education and planned efforts also reinforce entrepreneurial activities (Gorman *et al.*, 1997). In this regard, certain mind sets and skills are required to develop attitudes and intentions towards the

objectives (Pittaway and Cope, 2007; Goduscheit, 2011). Moreover, well-designed EEPs can generate a realistic sense of what it takes to start a business.

In this research study context, intention to become self-employed was not found to be positively or significantly correlated with start-up activities, after entrepreneurial education. However, the results of the present study supported the hypothesis that intention to become self-employed is positively and significantly correlated to attitudes towards self-employment, certain subjective norms and perceived behavioural control.

Thus, the results suggested that entrepreneurial education develops the entrepreneurial attitudes, through which it also develops intentions of would-be entrepreneurs. In addition, results of the present study supported the findings of similar research in non-Arab countries, such as Kolvereid (1996a), Luthje and Franke (2003) and Souitaris *et al.* (2007).

7.6 Contribution to the entrepreneurship literature

The main contributions of this study to the entrepreneurship literature are as follows.

Firstly, investigating individuals' (university students') intention towards self-employment through the TPB in Saudi Arabian culture, an Arab country and a developing country.

Secondly, empirical testing of a theoretical framework with two groups of the students (i.e. EEP group and Non-EEP groups) and at two time intervals (i.e. pre and post the courses).

Thirdly, providing empirical evidence that complements the existing, mainly conceptual, literature on the role of entrepreneurship education in the development of students' intentions towards self-employment.

Fourthly, designing an empirical test based on attitudinal and behavioural approaches and measuring entrepreneurial intentions in HEIs, and there has been less research at this level.

Fifthly, contributing to the body of knowledge with regards to how the graduate students of public and private HEIs in Saudi Arabia develop their attitudes and intentions towards self-employment.

Sixthly, providing empirical evidence from a relatively new cultural context i.e. Saudi Arabian HEIs where EEPs is being offered.

Lastly, being the first study that reports the development of entrepreneurship intentions towards self-employment through education in public and private HEIs in Saudi Arabia, which could significantly add to the wider validity of the findings derived from similar research conducted in other Middle Eastern countries that have similar cultures and socio-economic environments as in Saudi Arabia.

7.7 Summary

This study investigated the role of EEPs in the development of individuals' attitudes and intentions towards self-employment. Additionally, the researcher examined the benefits of EEPs for students in terms of learning from modules, inspiration and university resources. The researcher developed an approach based on the TPB in terms of the evolution of students' attitudes and intentions. In this study, the researcher argued that the intentions of individuals can be developed through EEPs. Based on this argument, this approach was investigated in the HEIs of Saudi Arabia for graduate students who undertook EEPs; the results for this group were contrasted with students who did not undertake such courses, known as the Control Group. To this end, the researcher evaluated the students' responses in reference to the phenomenon under study at two time points: pre and post the courses.

The research context was Saudi Arabian public and private HEIs where entrepreneurship courses were being offered. The questionnaire response rate for the EEPs Group was about 82 percent. For the Control Group the response rate after matching participants was 67 percent. The majority of the participants were male students of Bachelor's degree courses which was because of the nature of the study that was held at graduate level. To extract proper results, the data were made accurate through screening. This started with checking for errors related to the scores of variables that were out of range and progressed to finding out any missing data, outliers, linearity, normality and homoscedasticity from the collected data. After data cleaning, the researcher conducted factor loading because the measurement scales were adapted from the literature. By applying the exploratory factor analysis approach, the researcher found the same factors with respect to measured items as reported in the literature. However, a few items did not significantly load; hence were excluded from inferential statistical analysis. The procedure reliability and validity of the instrument was found to be within acceptable limits for the overall survey.

Finally, results were inferred by applying statistical tests. The results of the study showed that intention to become self-employed was positively and significantly related to attitude towards self-employment, subjective norms and perceived behavioural control for both groups. However, at the end of the semester for both groups, no significant relationships were found between intentions to become self-employed, nascency and start-up activities. The results however indicated that students' attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed were higher after taking EEPs. In contrast, for the Control Group, there were no significant differences at the end of the semester in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed. Additionally, the results showed that the EEPs Group had greater learning from modules, learning from inspiration and university incubation resources than the Control Group.

In summary, entrepreneurship-oriented intentions and attitudes can be enhanced through education, which was demonstrated through a study of the HEIs of Saudi Arabia. In this regard, certain mind-sets and skills and well-designed EEPs are required. This research provides empirical evidence from Saudi Arabian context that strengthens the accumulating evidence of the significant link between entrepreneurial education and entrepreneurial activities. Conclusions of this empirical study are presented in the following chapter.

Chapter 8: Conclusions and Reflections

This chapter provides the conclusions, findings, implications and limitations of this empirical study and then suggests a set of recommendations for policy makers and future research avenues and finally reflections about the study are made.

8.1 Conclusions

Modern organisations face problems of competition, innovation, pressure of unemployment and proper utilisation of resources. In view of these problems, the role of knowledge, skills and ability is multiplied. In the context of entrepreneurship, the dominant focus is on entrepreneurs, who are the main actors for launching new ventures. Launching a business involves the process of carrying out new combinations of enterprise, resource utilisation and achieving profit and growth by identifying opportunities and assembling the necessary resources to capitalise on them. The current thinking is that education for enhancing entrepreneurialism is imperative and needed because it increases and fosters the entrepreneurial mind sets and skills of individuals.

This study was aimed to investigate the role of entrepreneurial education in HEIs in terms of developing individuals' intentions and attitudes towards entrepreneurship, in the context of Saudi Arabia. In the literature, encouraging entrepreneurial activities and behaviours through the facilitation of education institutions is little understood. To understand the linkage, this study took a step forward and explored the role of HEIs in EEPs in Saudi Arabian culture. The scope of this study and its implications are wider because of the increasing youth

unemployment and overpopulation problems around the globe in general and in Arab countries in particular.

Based on a review of the existing literature and the TPB, an integrated theoretical framework was developed. The idea for testing the model was proposed through the positivist methodology in which a survey questionnaire was adapted to obtain data to test the hypotheses. Data were collected from 657 students enrolled at five public (n=3) and private (n=2) HEIs in Saudi Arabia. These institutions offer EEPs at the undergraduate and graduate levels. From them, two samples of students were selected, known as the EEPs Group and the Control Group. The former group consisted of students (n=491) who were undertaking entrepreneurship courses and the latter consisted of students (n=184) who were not undertaking any entrepreneurship courses. Data were collected at two time points: at the beginning (pre-test) and at the end (post-test) of the courses.

The researcher used the SPSS version 19.0 for Windows for the data analysis. The researcher used correlations, multiple regression and t-test to examine the relationships between the attitudes and intentions of students before and after taking EEPs and measured the effects of the entrepreneurship education on the students' attitudes and intentions.

The results of the study showed that intentions to become self-employed were positively and significantly related to attitudes towards self-employment, subjective norms and perceived behavioural control for both groups at both time intervals. However, no significant relationship between intentions to become self-employed, nascency and start-up activities were found in either group. In addition, results revealed that students' attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed were higher after taking EEPs. For the Control Group, however there were no significant differences or any improvement at Post-test in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed when the pre- and post-experiment periods were compared.

From a positive point of view, the results showed that the EEPs students (experimental group) had greater learning from modules, learning from inspiration and utilisation of university incubation resources than the students in the Control Group. However, perceived behavioural control and intentions to become self-employed were not significant predictors of learning for the EEPs Group. Additionally, attitudes and perceived behavioural control were not significant predictors of students' use of incubation resources. Moreover, in the Control Group, subjective norms were a significant predictor for use of university incubation resources.

The key findings of this study are summarised in the following section

8.2 Key Findings

The key findings of this empirical study are summarised as follows.

1. University students' attitudes towards self-employment, subjective norms and perceived behavioural control have statistically significant and positive associations with the students' intentions to become self-employed.
2. Attitude towards self-employment, subjective norms and perceived behavioural control are significant predictors of intention to become self-employed. These predictors can explain up to 23.6% and 27.5% of the variance in Saudi university students' intention to become self-employed before and after entrepreneurship education programmes, respectively.
3. The subjective norms is the strongest predictor of Saudi university students' intention to become self-employed both before and after entrepreneurship education programmes while the attitudes towards self-employment is the second strongest predictor of the intention to become self-employed before entrepreneurship education programmes and the perceived behavioural control

is the second strongest predictors of the intention to become self-employed after the entrepreneurship education programmes.

4. The Nascency and start up activities do not significantly predict / affect Saudi university students' intention to become self-employed following the entrepreneurship educational programmes.
5. Three learning aspects i.e. learning from modules, learning from inspiration and university incubation resources have statistically significant associations with attitudes towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed.
6. The subjective norms and intention to become self-employed significantly predict / affect Saudi students' utilisation of university incubation resources whereas the attitude towards self-employment and perceived behavioural control have no statistically significant effect on university incubation resources utilisation by Saudi students.
7. Overall, entrepreneurship educational programmes at Saudi universities significantly enhance students' attitudes towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed.

8.3 Research Implications

The research implications of this study are divided in theoretical, practical and methodological implications, which are described below.

8.3.1 Theoretical Implications

This study was conceptualised through a review of extant literature in the domain of entrepreneurship. The main purpose of the conceptualisation was to investigate the attitudes and intentions of university students towards self-employment through EEPs. This research addressed the behaviour of individuals relating to recognising and creating opportunities towards the emergence of new ventures or the growth of organisations. The challenging and competitive situations of all economies of newly industrialised or developing countries such as Saudi Arabia require new ventures to increase economic potential and employment opportunities.

The researcher noted from the related literature that individual intentions are effective in predicting planned behaviour, and behavioural intentions are predicted by attitudes (Ajzen, 1991). The researcher posited that the TPB is not only relevant to the antecedents of entrepreneurial intentions, but also can affect the decision to start up a business venture. This view supports the concept that attitudes can be changed by changing beliefs about the support of entrepreneurial behaviour. In view of the above idea, the researcher argued that attitudes can be developed through subjective norms, behaviour and perceived behavioural control, as described by Ajzen (1991). Generally, the stronger an individual's intention to perform a specific behaviour is, the higher the likelihood of doing so in the future, as Ajzen (1991, pp. 188) describes attitudes: "The degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question". This idea raises the question of the degree to which individuals assess entrepreneurial acts positively such as grabbing opportunities and considering new venture creation. To this end, entrepreneurship education has largely been considered to develop individuals' rewarding entrepreneurial behaviour that can explain the merits of innovation and opportunity exploitations and reduces false beliefs about the disadvantages of business venturing and failure. Based on Ajzen's model (1991) the researcher proposed to investigate the individuals' intentions to become self-employed. Indeed, models related to

intentions are a good framework for looking at the influence of entrepreneurship education on entrepreneurial intentions. A further aim of this study was to understand the benefits of entrepreneurial education theory by revealing three types of programme benefits to students, which were learning from modules, learning from inspiration and university incubation resources. Over all, the researcher argued that entrepreneurial education affects the attitudes and intentions of an individual which can change career choice in favour of starting own business.

The main importance of this research study is that it represents a significant departure from the previous research work that mainly relied on theoretical arguments, such as prior research from the economics perspective, into why people typically become self-employed. Following the TPB, the present study used a framework for an empirical investigation. In addition, prior literature about when people become self-employed was investigated through the macro-economic, environmental and demographic factors that influence patterns towards or away from self-employment. Thus, in spite of the need for more entrepreneurial education, little is known about the attitudes and intentions of entrepreneurs towards entrepreneurship.

A wide variety of study modules have been introduced by many universities to address attitudinal and resource barriers to entrepreneurship. In fact, the entrepreneurial education modules are offered with realistic perspectives relating to the commitment and resources required to pursue a career in enterprise. These modules are often used as testers to raise the expectations of students and to encourage students to believe that being an entrepreneur is desirable and feasible.

This research work is original in developing a comprehensive theoretical framework that examined the factors that influence students' attitudes and intentions regarding entrepreneurship through the EEPs and the benefits of such courses. Previous studies have shown links between entrepreneurial education and students' activities, but the link between entrepreneurial activities and behaviours and the facilitation of education institutions is less understood and there is

growing interest from policy makers and academics towards entrepreneurship and entrepreneurship education. Thus, it can be claimed that this is the first time that this conceptual framework has been tested empirically and theoretically in relation to entrepreneurship education and entrepreneurship, especially in the context of Saudi Arabia.

1. The finding of this research revealed that the intention to become self-employed has a positive and significant relationship with attitude towards self-employment, subjective norms and perceived behaviour control at both the pre and post-course stages.
2. The findings showed that there was no significant correlation between intention to become self-employed and nascency at the end of the semester for both the EEPs Group and the Control Group. Support for this finding was provided by the results of the regression.

On the basis of above mentioned results, the researcher recommends that there is a need to investigate the link between intentions and behaviour because there are assumptions of the TPB to suit for investigating entrepreneurial intentions rather than entrepreneurial behaviour (Kolvereid, 1996; Autio *et al.*, 2001; Souitaris *et al.*, 2007).

3. The results of this study showed that there is insignificant relationship between entrepreneurial intentions and actions at the end of EEPs, especially in the case of young students. However, 30% students declared intentions towards nascency from the EEPs Group. It is possible that this was the effect of initial enthusiasm that would dissipate soon after, rather than due to a serious intention to start a business.

From the above results, the researcher recommends that longitudinal studies that follow the subjects over several years after graduation are certainly needed for further research to better establishing the link between the antecedents of intentions and entrepreneurial behaviour.

4. Findings of this study showed that EEPs resulted were significant improvements in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed. However, for the control group there were no significant differences or any improvements in attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed when the pre- and post-test periods were compared. The published literature shows that other researchers found that entrepreneurial education can affect individuals' intentions, which is confirmed and supported by the results of the present study. However, this relationship must be evaluated in other institutions such as vocational training institutes rather than universities.
5. The findings of this study have supported the argument that attitude towards self-employment is significant and positive predictor of learning from EEPs and that subjective norms factor is a significant predictor of how much students learned from the EEPs. With regards to benefits of the EEPs, results of this study showed that inspiration is significantly associated with the attitude towards self-employment, subjective norms, perceived behavioural control and intention towards self-employment. However, the results from the Control Group showed no significant associations between the inspiration variable and attitude towards self-employment, subjective norms, perceived behavioural control and intention to become self-employed.
6. The results revealed that resource utilisation was significantly related with attitude towards self-employment, subjective norms, perceived behavioural control and intention towards self-employment. From the EEPs Group results, it was confirmed that only subjective norms and intention to become self-employed can be used as significant predictors of inspiration. In the Control Group, the factor of use of university incubation resources was significantly positively related with subjective norms only; however, there were no significant associations between university incubation resources and attitude

towards self-employment, perceived behavioural control and intention to become self-employed.

Learning is necessary for developing skills and knowledge in terms of how to start up a business, problem solving and leadership. Thus, researchers are eager to know how to evaluate the learning from EEPs. This demonstrates the importance of attending EEPs or entrepreneurship training in relation to the promotion of entrepreneurship, which will increase students' levels of entrepreneurial intentions. However, inspiration was found less influenced. This evidence could reflect the success of the EEPs for the experimental group.

7. Finally, the researcher found that benefits of entrepreneurial education with respect to utilisation of resources and incubation has a positive impact on the intention of individuals in Saudi Arabian culture which is entirely different from results from other cultures and hence researcher recommends for further research in this context in other institutions to generalise the results.

8.3.2 Practical Implications

Today, HEIs around the world have been focused on a new mission in society to influence regional innovation and economic growth (Nurmi and Paasio, 2007). The main purpose of HEIs is to increase knowledge and develop individual's skills and attributes of individuals which can be applied to delivering creative and innovative ideas towards the challenges. However, the dominant focus of institutions that provide entrepreneurial education is to develop individual's attitudes and intention as to initiate and create businesses. These institutions are engaged in discovering how to solve related problems, identifying opportunities to work on, developing leadership qualities, acting resourcefully and responding to challenges. The role of the HEIs for offering entrepreneurship courses are increased because graduate employment may fall considerably and therefore graduates need higher levels of skills in business and in enterprise to compete in the changing job market. Scarcity of employment raises the significant role of HEIs

in stimulating graduate entrepreneurship and in educating and encouraging the entrepreneurs at present and in the future. Such important responsibilities of the institutions can support and promote economic activities locally and regionally in order to create new ventures, new business areas, utilise resources, develop university-business-government partnerships and commercialisation of knowledge and research (Rasmussen and Sørheim, 2006). In this extent, researchers have focused on HEIs for fostering entrepreneurial attitudes and intentions through education. This focus has been designed to bring about a highly qualified future entrepreneurial workforce and the government's vision of inspiring students at the graduate level who are needed for the economic development locally and regionally. Keeping this view in mind, the present study was conceptualised to find the impact of entrepreneurial education at the level of HEIs. The main objective was the need for understanding the impact of EEPs on inspiring students to take up the challenge of turning their ideas into successful enterprises. However, the study provided several important findings based on which the researcher proposes the following practical implications for policy makers, academics, managers and future entrepreneurs.

- One of the major strengths of this study is that it empirically investigated the link between the individual's intentions and attitudes towards becoming self-employed while in university education. The literature showed that research on entrepreneurship in the educational system appears to be biased towards studies of HEIs and university studies in particular (Mahieu, 2006; Fayolle and Gailly, 2008). The researcher linked the relationships between attitudinal behaviour factors to examine the intentions of students who took entrepreneurial courses at the university level. It was proposed that if the results of this study show that the selection of a course on entrepreneurship at the graduate level led to innovative potential entrepreneurs, then universities need to focus strongly on courses of entrepreneurial education. The goal of these courses should be creating and promoting entrepreneurial activities intensively in shaping more potential entrepreneurs. In addition, this study was conducted in HEIs where data was collected from two groups of students at two different times. The results showed

that attitudes to self-employment, subjective norms and perceived behaviour control were good predictors of intention towards self-employment for the group of students who took entrepreneurial courses. This finding suggests that students should be given more knowledge which they can transform into practical experience. To this end, universities should incorporate such courses in entrepreneurial education into business studies programmes so that the students can understand the real business world. Thus, this study can be the basis for recommendations to policy makers to implement policies that match the needs of potential entrepreneurs.

- This study supported the idea that entrepreneurial intentions increases when the level of self efficacy of individuals grows and then their intentions to create businesses become much stronger. This idea has been also supported by research which has investigated the prediction of status choice (self-employed or employee).
- The results of this study revealed that universities are the source of promoting entrepreneurship in an effective way. These institutions need to re-evaluate the current entrepreneurship courses along with the traditional lecture-based and the rote-learning approach. The institutions that provide entrepreneurial education courses should consider the areas that will best meet the needs of students. The results of this study can provide some policy recommendations for the development of entrepreneurship courses with respect to the course contents which would be useful for students. In this regard, the policy makers should understand how to create an entrepreneurially-friendly environment in HEIs in order to promote and inspire entrepreneurial behaviour among the potential entrepreneurial students.
- The link between the antecedents of intention and entrepreneurship behaviour is less clear in the literature where nascency, like individual behavioural activities, such as assembling resources, hiring, or incorporating the company is reported to be related to the intention of the individual. However, the results of the present empirical study did not support the link between intention

towards self-employment and nascency (positioned as an intermediate pre-venture phase). In addition, the results of this study showed partial change in the overall attitude towards becoming self-employed after taking courses in entrepreneurship education programmes.

- The goal of entrepreneurship education is to develop individuals' attitudes and intentions through their talents and creativity to pursue their dreams, obtain independence and a sensation of liberty. The literature supports the link between entrepreneurship education and entrepreneurial attitudes and intention. The results of this study also supported the existing literature by revealing that after taking an entrepreneurship course there was a favourable attitude and subjective norms with respect to becoming self-employed, and greater perceived behavioural control and improved intention to become self-employed compared to before taking the course. This implication of the study provides pointers to the policy makers for improving entrepreneurship education courses. The dominant point is that everyone cannot be an entrepreneur through entrepreneurship courses. Thus, there should be a curriculum that aims to provide a systematic knowledge that supports students in launching a business by the end of their studies. In this regards, entrepreneurial education courses and contents should be designed which can cover different aspects of business creation: planning, organising and starting a venture. To this end, the literature supports the idea that teaching skills in business planning, financial reporting, marketing, entrepreneurial knowledge and skills and human resources help in creating successful businesses (McHugh and O'Gorman 2006; Rae *et al.*, 2012). Therefore, the education level of an entrepreneur is a key factor for developing attitudes and intentions to be self-employed.

- The idea that the educational institutions which provide entrepreneurial education should provide potential courses with the contents designed for future entrepreneurs so as to encourage their students. This study can be the basis for recommendations to policy makers to implement policies that match the needs of potential skills and knowledge for developing their intentions to become self-employed. This is consistent with the other studies which show that providing

access to entrepreneurship education is especially important in fuelling the pipeline of aspiring entrepreneurs because of the strong role education plays in raising their levels of self-efficacy, and ultimately their interest in starting their own ventures. Additionally, the present research implies that self-efficacy may play an important role in developing graduates' intentions to select particular career options. Providing entrepreneurial education at this stage is potentially important in order to prevent unsuitable people from selecting the entrepreneurial career option. In addition, this research indicates the importance of entrepreneurship education at the graduate level in order to increase interest in developing intentions to become self-employed and for increasing the level of overall awareness. It is also interesting to note that the present study provides evidence that young people who see that their lack of understanding of entrepreneurship can be addressed by giving them the necessary skills and knowledge, are likely to be highly receptive to educational offerings.

- In developing economies, a government may choose to play a catalytic role by motivating people to exercise their entrepreneurial aspirations. In this regard, the Saudi government is interested in supporting their people, especially the young entrepreneurs, in order to encourage the accumulation of enterprise skills and knowledge to increase self-employment and new venture creation. This is because many young people in Saudi Arabia face unemployment and are interested in self-employment and business creation to avoid it. To this extent, the government supports enterprise education in five universities in the country in order to encourage more students to become entrepreneurs. These universities offer entrepreneurship and small business courses to the undergraduate and graduate students. This study found the links between the cognitive profiles of 147 (30%) students and their intention to become entrepreneurs.

- This study has highlighted the importance of the entrepreneurial approach in generating employment, solving economic problems and controlling employment. It argues that any policy recommendations on these factors should be based on analysis; for instance, in facing competition from other developing

economies, most mainstream entrepreneurs are advised to upgrade their education.

- The major inference of the present research study is that potential entrepreneurs may develop intentions to be self-employed on the basis of their education related to entrepreneurialism. This concept was raised some time ago, but the present study has filled the gap relating to the lack of empirical evidence from the Arab culture and also in other Middle Eastern countries with similar cultures and environments.

8.3.3 Methodological Implications

Aside from theoretical and practical implications as described above, this study makes a contribution in terms of the research methodology as follows.

- Prior research on investigating EEPs has not used a Pre-test and Post-test design, and also failed to include a control group. This means they suffered from methodological limitations. This brings to the focus of this research study i.e. overcoming the methodological limitations of earlier entrepreneurship research and looking at the relationship between EEPs, the intentions of students and their subsequent entrepreneurial behaviour.
- This study could be the first study to test individuals' attitudes and intentions towards self-employment outside the Western culture, specifically in Saudi Arabia. Many empirical studies have measured individuals' attitudes and intentions, such as Kolvereid (1996), Alsos and Kolvereid (1998), Henry *et al.* (2003), Keogh (2004), Fayolle *et al.* (2006), Souitaris *et al.* (2007) and Nabi *et al.* (2010). However, all these studies have focused on developed and western cultural settings. The present study has filled this gap in the global research investigations by testing predictor variables in a new cultural context i.e. Saudi Arabian culture, which may be useful for generalising these predictors.

- Testing the attitudinal factors in the Saudi Arabian context could provide additional insights into the extant literature because Saudi Arabian people and their cultural, socio-economic and historically business oriented backgrounds are substantially different from those of the western countries. The findings of the study suggest that individuals' attitudes and behaviours towards self-employment are important and can be developed through entrepreneurship education in a similar way across both the western and non-western cultures. Individuals in Saudi Arabia show similar beliefs regarding the overall concept to those reported in the literature but they place more weight on the future needs and expectations. Furthermore, the results of this study have provided empirical evidence that entrepreneurial education does develop entrepreneurial attitudes, intentions and inspiration of would-be entrepreneurs.
- Additionally, this study has verified existing measurement scales in a country that is culturally different from other countries. All the scales generally appeared valid in their general content but the number of items in the purified scales was not the same as those in the original scales. For instance, after testing the subjective norms scale, the six items were purified into four items at Pre-test and into five items at Post-test, with high reliability. Similarly, perceived behaviour control consisted of six items that were purified into four original factors at both times. The factor of university incubation resources (UPRI) was loaded with five original items out of eleven items. However, a few basic items were purified in the scales, whereas others were deleted and loaded with the extracted items, with high reliability. Future cross-national research could benefit further from the present study with regard to the investigation into the essential conditions in which the comparability of scales across countries is affected.

8.4 Theoretical contributions

This empirical study has a number of significant theoretical contributions as follows.

1. The primary contribution of this study is the testing of the TPB regarding the development of entrepreneurial intentions for self-employment career choices in a developing country, particularly an Arab country i.e. Saudi Arabia.
2. A further contribution is that the theoretical framework was tested for students who did and did not select entrepreneurship education, with data collected before (pre) and after (post) the courses.
3. Another contribution of this research is that the results represent an empirical attempt to complement existing, mainly conceptual, literature on the role of entrepreneurship education in the development of students' intentions towards self-employment. The development of attitudes towards the behaviours associated with self-employed career choices promotes the explanation of entrepreneurial intentions. As such, the results of the present empirical study could have a significant impact upon the knowledge of behavioural theory's contribution to entrepreneurial intentions.
4. This study has shown that it is possible to design a test based on attitudinal and behavioural approaches and to measure entrepreneurial intentions among university students, while taking into account a number of other influences on university students' intentions towards enterprise.
5. Additional contribution of this study is that it was carried out in HEIs, and there has been less research at this level.
6. Further, this study contributes to the knowledge on how the graduate students of public and private HEIs in Saudi Arabia develop their attitudes

and intentions towards self-employment. Although many studies have focused on the levels of higher secondary school and college, the setting of this study was on the university graduate level.

7. More importantly, in this study two time points were selected for data collection, which is also a significant contributing to the entrepreneurship literature.
8. Finally, the study was conducted in HEIs in Saudi Arabia where EEPs were being offered, which brings empirical evidence from a relatively new cultural context. Prior studies were undertaken mostly in developed nations such as the USA, the UK, Australia and Canada. This is the first study reporting on the development of entrepreneurship intentions towards self-employment through education in public and private HEIs in Saudi Arabia, which is significant in permitting a test of the wider validity of the findings derived from research conducted in other Middle Eastern countries with similar cultures and environments.

8.5 Outcomes driven out of this study

This study has revealed that about 30 percent participants from the EEP group showed nascency towards starting up a business as their future career. Additionally, students from Saudi Arabian universities seek quality education and want to take advantage of the resources there, realising the potential of university for equipping them with the knowledge and entrepreneurial skills necessary for their future careers.

The results have also revealed that intention to become self-employed is positively and significantly associated with attitudes towards self-employment, certain subjective norms and perceived behavioural control. However, in the context of present research study, intention to become self-employed was not found to be

positively or significantly associated with start-up activities, after entrepreneurial education. These results thus indicate that entrepreneurial education develops the entrepreneurial attitudes and intentions of would-be entrepreneurs. The main outcome derived from these findings is that there is a need for investigating individual's intention towards self-employment through the TPB in other Arab countries (and possibly in other developing countries).

The following section reports the limitations of this study.

8.6 Research Limitations

The research limitations of this study are divided in theoretical and methodological limitations that are described and discussed below.

8.6.1 Theoretical Limitations

Despite the promising, encouraging and useful results, this study has some theoretical limitations that can be noted and dealt with in the future research. The limitations are as follows:

- This research was designed to investigate the impact of EEPs on the attitudes and intentions of university students, which may limit its generalisability. The results refer specifically to graduate-level students. It is possible that the people who did not undertake any entrepreneurship education but have positive attitudes and intentions through experience and other factors may react differently from those who received entrepreneurial education.
- This study did not address some competency-based approaches and socially and culturally influenced factors, which may be interesting to study empirically in the future. The potential is that entrepreneurial graduates may be attracted by innovative workplaces and cultural and social factors. Therefore, the

future research should consider how such variables affect individuals' attitudes towards entrepreneurship.

- Educational systems require knowledge of the value of entrepreneurship in order to promote an entrepreneurship culture. Therefore, the theoretical framework used in this study should be tested in a larger sample of educational institutions, as well as other organisations, which may highlight different factors in developing intentions towards self-employment. Thus, more tests are necessary to strengthen generalisability of the findings of this research study.
- One of the theoretical limitations of this study is its empirical approach, as the results of unique datasets may be affected by the selection of samples. The researcher selected a limited number of institutions, which may have restricted the results. It is quite difficult to obtain information from all over a country like Saudi Arabia but the researcher proposes that further studies could be conducted in other institutions where entrepreneurship courses are being offered in order to be able to generalise the results of the study.
- This study used limited choices for selecting variables and data collection. In terms of selecting meaningful variables, the researcher acknowledges that other factors related to social, cultural, religious, political, demographic, and other factors e.g. environmental factors could also influence intentions towards self-employment, and these factors along with the existing factors may provide more effective theoretical framework and insights in investigating the intentions of potential entrepreneurs.
- This study used single-source and cross sectional data, which is another limitation because researchers suggest that the seriousness of an issue depends on the research question and the nature of variables under consideration (Crampton and Wagner, 1994). The present study could have used in-depth interviews from the sample to confirm the results obtained from the quantitative sources through a self-completed questionnaire survey.

- In addition to the above limitations, there was limited use of theory in the present study. In the conceptual framework, the researcher used the TPB to understand individuals' attitudes and intentions, but there are many other theories that can be used to measure the attitudes and behaviours of individuals. Thus, there is a need to take more theories into consideration to develop a conceptual model to investigate individual behaviours relating to becoming self-employed.
- Finally, the results of this study refer only to the Arab cultural context in general and Saudi Arabian culture in particular; however, the corporate entrepreneurship practices in Arab economies may differ from those found elsewhere. The conceptualisation of this study was based on the literature of Europe and other cultures. Thus, the results of this study should be compared to those from other countries with the same concept to provide more generalisability.

8.6.2 Methodological Limitations

This study has a number of methodological limitations related to the design, measurement and samples, as follows.

- The major limitation is the research design, which did not allow complete investigation of the attitudes and intentions of individuals towards self-employment.
- The cross-sectional survey design of the study is another limitation because it was not a longitudinal study.
- Furthermore, the measurement scales used to investigate the entrepreneurial behaviour (particularly after attending courses) have not been widely tested for their validity and reliability across cultures.
- A sample limitation also existed in this study. The sample of the study was based on a few selected public and private business and engineering schools in five HEIs in Saudi Arabia. The selection of the institutions may have been biased

because other schools were not selected. Moreover, the samples were not drawn from all of the university population.

- Another limitation of this research is that the context was based on public and private HEIs in Saudi Arabia; thus, its generalisability (particularly for organisations in developed or western countries) is limited due to difference in cultures, economic environments, as well as religions and social settings.
- In addition, there was a contextual issue in this study because participation was voluntary and the respondents were given no choice of where they could complete the questionnaire. Thus, the responses could have been affected by the settings or other factors while completing the surveys.
- Finally, this study was based on a single source of data: the researcher used a survey questionnaire to collect the facts from the participants. This method of data collection might be affected by common method bias and there might be reliability and validity issues because the data were self-reported by the respondents. According to Park and Ki (2009, p. 34) self-surveyed data may produce high correlations among measures, in part, because the data shares common method variance. Thus, errors in measurement are correlated with one another. As such, data obtained from a single source may be problematic for causal prediction. Therefore, using multiple methods may be helpful to clarify further the findings of this research. This limitation suggests that in-depth interviews with employees along with the collection of quantitative data could be more useful.

The next section provides a number of recommendations based on the findings of this empirical study.

8.7 Recommendations

Based on the results of this study, the researcher proposes some recommendations, which may be considered and implemented by practitioners, policy makers and concerned parties regarding developing individuals' attitudes and intentions through entrepreneurial education at universities.

1. More comprehensive EEPs and their contents should be designed at the university level, which could be through providing core, elective and compulsory courses for all university students, given the need for graduates of all disciplines to possess entrepreneurial skills and awareness.
2. Entrepreneurship courses should be developed that lead to the development of entrepreneurial knowledge and skills based on problem solving, creativity, critical thinking and other required skills. Such skills should be embedded in course content, supported by workshops and by guided self-development (Rae, 2009 and Rae *et al.*, 2012). Additionally, these courses should aim to include guest lectures by successful entrepreneurs who can share their experiences. There is a need to build on, rather than repeat, enterprise in the school curriculum (Rae *et al.* 2012).
3. Instructors should provide knowledge regarding relevant cultural and social factors, and innovative workplaces which may help to develop particular attitudes and intentions. HEIs should focus on their faculty members' knowledge and skills relating to new trends and environmental conditions for enterprise. Although faculty members are well educated, lecture techniques and methodological skills may need to be upgraded. Universities should hire faculty members who possess entrepreneurial knowledge and experience.
4. The active involvement of students must be encouraged through the development of business plans during the course. This may provide more learning and experience in order to support the process of business

creation. This activity should be monitored by experienced instructors who can guide students on how to embark on such an assigned project.

5. Real business exposure is needed for potential entrepreneurs. To this end, universities should establish links with business organisations to give positive exposure to entrepreneurs. This should be available via curricular activities that enrich the students' attitudes and intentions and also the entrepreneurial learning process. In addition, an internship programme should be developed for students.
6. Universities should develop a business advice and guidance centres that offer one-to-one advice. Such centres and incubators can provide valuable information related to business in regard to funding sources; initial start-up procedures; location selection; product development and selling; writing business plans and legal advice.
7. Further comparative research should be conducted across countries regarding students who have experienced EEPs. Such a study will gather the opinions of students from different cultures, environments and locations. Based on this study, common EEPs could be established for students to help them develop entrepreneurial attitudes and intentions.
8. In Saudi Arabia, the Ministry of Higher Education (MOHE) is the main budget provider, and the supporter of HEIs through many initiatives. The researcher recommends that MOHE starts an initiative to support and fund HEIs in their entrepreneurial efforts and offer a consultation service as well as funds to their students before and after graduation. Researchers like Rae *et al.*, (2012) have examined the relationship between public investment in enterprise education and self-employed activities on the impact of graduate entrepreneurship. They noted the positive effect of self-employment for graduate venture creation, and employment within small firms and in social enterprises. These indicators may be used for participation in knowledge transfer projects and research and innovation

projects after graduation. Sufficient funds should be allocated for training, event organising, as well as research and publishing in the area of substantiating the culture of entrepreneurship.

9. The MOHE and HEIs should organise entrepreneurship symposiums, conferences, and workshops for students and faculty members. This is intended to be an extra tool to enrich the culture and understanding of the importance of entrepreneurship. On a broader strategic and policy perspective, entrepreneurship should be considered as an economic developmental route, a value-adding trajectory, and a social necessity.
10. Relations between HEIs and the other interested and involved organisations, whether public or private, should be developed and enriched for more collaborative entrepreneurial efforts. For example Rae *et al.* (2012) pointed out the role of HEIs, acting together with business organisation and local authorities, in obtaining better results of longer-lasting benefit and more cost-effective than those from individual HEIs acting alone.
11. In Saudi Arabia, the three valleys of technology that are under construction (linked to the three participating universities in this research: Riyadh Valley of Technology, Jeddah Valley of Technology, and Dhahran Valley of Technology) should have a major role in entrepreneurship in their universities and communities.
12. All Saudi HEIs should not limit themselves to teaching, researching, and community service only, but also they should consider entrepreneurship as a priority function. The future will undoubtedly reveal the need for more start-ups, due to the limited capacity of both governmental and private sector jobs availability.
13. Longitudinal studies that follow the subjects several years after graduation are certainly needed for further research to better establish the link between the antecedents of intentions and entrepreneurial behaviour.

14. Future research should investigate entrepreneurship by Saudi Arabian women.

8.8 Future Research Avenues

Research in the domain of entrepreneurship education is evolving and requires continuous study. Therefore, future research avenues needs to be identified and considered because such avenues could be helpful for understanding of individuals' attitudes and intentions towards entrepreneurship. The researcher has identified several possible research avenues for future research, based on the current study's empirical results but these might go beyond the findings of this study, as follows.

Firstly, according to the literature, all three constructs of the TPB (i.e. attitudes towards self-employment, subjective norms and perceived behavioural control) indicate individuals' collective attitudes (Kolvereid, 1996a; Krueger *et al.*, 2000; Luthje and Franke, 2003; Fayolle *et al.*, 2006; Robinson and Doverspike, 2006; Souitaris *et al.*, 2007; Jawahar, and Kisamore, 2010). The present study empirically investigated these factors and confirmed the same results in the culture of Saudi Arabian HEIs. However, the model used in this study could be improved and refined by future research by including other variables such as technological change and infrastructure support factors to examine students' inclinations towards new venture creation. In addition, the researcher proposes that these constructs should be confirmed in other Arabic cultures / countries to provide more generalisability of the present study.

Secondly, the role of education and teaching variables has been identified regarding the development of perceptions. The present study found all variables i.e. attitudes towards self-employment, subjective norms, perceived behavioural control and intentions towards self-employment after EEPs were found negatively correlated to both the start-up activities and the nascency. This finding suggested

that there is no a significant positive correlation between intentions to become self-employed and nascency or number of start-up activities at the end of the EEP courses. The researcher therefore proposes that other factors such as perception of opportunity, entrepreneurial role, social influences and experience should be examined in relation to the graduates' intentions towards entrepreneurship and self-employment,.

Thirdly, future research could investigate the nascency of individuals through individual behavioural activities, such as assembling resources, hiring and incorporating a company, which are related to the intentions of individuals.

Fourthly, the researcher proposes the investigation of the constructs of attitudes towards self-employment, subjective norms, perceived behavioural control and intentions to become self-employed at levels of educational institutions where entrepreneurial education is provided to help students start businesses. This type of study could investigate the effect of the level of education on improving the perceived feasibility for entrepreneurship through increasing the knowledge of students, building their confidence and promoting self-efficacy.

Fifthly, in this research few factors have been tested empirically, however, there may be other important factors like cultural, religious, environmental or societal that can influence intentions towards becoming self-employed. The researcher therefore proposes that important factors such as students' perception of the attractiveness of business start-ups, perceived social pressure and perceived ability should be examined in other Arab countries to confirm the viability of the results.

Sixthly, apart from the learning and inspiration benefits of entrepreneurial education, the availability of resources can also benefit and help students' to evaluate their business ideas and develop them into ventures. Numerous resources, like entrepreneurially minded classmates, lecturers, technology transfer officers, practitioners and others might be supportive for the set-up of new business ventures. The literature shows that students can relate to a group of entrepreneurially minded classmates in order to build a team and can get advice

from lecturers, technology transfer officers and classmates. In this competitive era, control of scarce resources is an essential hurdle in entrepreneurship and less empirical research has examined the relationship between university incubation resources and attitudes and intentions to be self-employed. The researcher tested this concept and found that resource utilisation significantly correlated with factors such as attitudes towards self-employment, subjective norms, perceived behavioural control and intentions towards self-employment. The researcher therefore proposes another avenue of research that is to investigate the effect of the availability of university resources on entrepreneurial attitudes and intentions.

Seventhly, the researcher found that a large number of the participants indicated that they would like to start up a business after graduation because of learning from entrepreneurship activities, inspired by entrepreneurship education. However, what type of business they might be interested in could be another area for further investigation.

Eighthly, a large research project should be undertaken to examine the factors involved in developing individuals' attitudes and intentions. Aside from the variables used in this study, other meaningful variables should be investigated based on the social, cultural, religious, political and other factors that can influence intentions towards becoming self-employed.

Finally, the theoretical framework used in the present study should apply in other Arab countries to confirm its validity. In addition, new measurement scales should be developed and applied for cross-sectional and longitudinal studies that investigate (in local contexts) the development of intentions and attitudes to become an entrepreneur by entrepreneurial education. The following section concludes this chapter with the researcher's final reflections about this empirical study.

8.9 Final Reflections

The researcher completely agrees with Rae *et al.* (2012) who have asserted that entrepreneurship education is a worldwide product with multiple national and international competitors that are competing for intellectual mindshare, students and trainees. Hence, HEIs and educators are being challenged to develop approaches for student enterprise and entrepreneurship education, which are sustainable both academically and financially. In addition, they have stated that in the 21st century, the effectiveness of responses of these institutions is a main topic for future research because of the needs of students to be equipped with the skills, abilities and, importantly, attitudes to create enterprise rather than merely to learn about entrepreneurship and entrepreneurs. Entrepreneurial activity in all sections of society has been directed towards economic development. A large and compelling literature supports the idea that HEIs are the source of rebalancing the economy, creating new business ventures, wealth creation and employment because of stimulating entrepreneurial students for present and future employability (Rae, 2008; Rae *et al.* 2010). With this belief in mind, this study set out to look at the mind set of potential entrepreneurs in a developing country i.e. Saudi Arabia.

The main issue was to investigate the role of entrepreneurship education in promoting self-employment, the formation of new businesses and also developing interest in starting up a business. A further aim of this study was to understand the benefits of entrepreneurial education theory by revealing three types of programme benefits to students such as learning from modules, learning from inspiration and university incubation resources. Overall, the researcher argued that entrepreneurial education affects the attitudes and intentions of individuals, which can influence career choice and encourage the student to start own business.

This empirical study explored the link between the individuals' (students') intentions and attitudes to become self-employed while at university. In fact the employability of individuals needs to be reconceptualised and entrepreneurship

education should be seen as a way of enabling individuals to be flexible so that they can launch and develop an entrepreneurial career rather than seeking jobs (Rae *et al.*, 2012). The findings of the present study showed that entrepreneurial education at degree level does have a positive effect on a graduate's chances of success; however, this effect does depend on the university offering the right courses in the first place.

This study revealed that students should be given more knowledge to increase the level of self efficacy to become much stronger in their intention to become self-employed. Results of this study are in full support of literature and TPB theory. In addition, the findings of the study suggested that instituting enterprising and entrepreneurship culture and education should reach to all Saudi youth at all levels of education. However, sufficient exposure to entrepreneurship education needs to occur at a university level to stimulate positive entrepreneurship attitudes and intentions in different prospective professions.

It is indeed the social responsibility of HEIs to practice the function of service to the community and collaboration between entrepreneurial culture and education programs should be extended from the level of high schools to the university level and the community at large. Such collaboration may help in developing positive attitudes and intentions towards entrepreneurship.

Entrepreneurship is a broad concept that is involved with interconnections of systems such that cultural, conceptual, skills, and integrated supportive facilities.

Therefore urging on one or two aspects will not be enough but should be followed as an integrative systematic approach to achieve the desired goals. Entrepreneurship courses in universities should be a major contributor to "economic rebalancing" (Rae *et al.* (2012) that is connected with the growth in cities and countries. This study focussed in general and in particular on Arabic culture where entrepreneur is concerned with a person who is the master, well-trained and takes the initiative.

In KSA, entrepreneurship efforts are mainly concentrated in few main cities, mainly Riyadh, Jeddah, and Dammam; however, efforts should be made on geographical basis to spread the enterprise culture in all regions of the country to elevate the practices and outcomes of entrepreneurship. Apart of that, the findings of this research suggest setting up of a strategic integrated roadmap and making available the required capacities and resources for developing individuals' attitudes and intentions towards entrepreneurship.

Finally, researchers, decision makers and policymakers should consider the present study's findings and recommendations in their right context as presented in this doctoral thesis.

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Appendix 1

Survey Questionnaires

An Investigation of the Role of Higher Education Institutions (HEIs) in Promoting Entrepreneurship Education Programmes (EEPs) in Saudi Arabia



Cover Letter

Dear Student,

May peace and mercy of Allah be upon you.

It is a known fact that the success of any scientific research is totally based on the concerted efforts by all parties, which paves the way to serve the community in general and the beloved country in particular.

I would like to inform you that I am on a scholarship to UK, to study the PhD. degree at the University of Brunel. I am currently collecting field data from students who are in the courses of entrepreneurship and small businesses and students who are not taken any of entrepreneurship and small businesses courses some of the Saudi universities and the title search is: “An Investigation into the Role of Saudi Higher Education Institutions (HEIs) in Promoting Entrepreneurship Education Programmes (EEPs) in Saudi Universities”.

I would appreciate very much if you could spare some of your valuable time to participate in this important research by filling-up the attached questionnaire, as your views no doubt will add a great importance and due success to the efforts behind this research, even if some points of this questionnaire have no relation to your concern may be neglected. Please be rest assured that all information provided by you will be kept highly confidential and in no circumstances will be disclosed to others except to be used only for the purpose of this research.

Keeping a great confidence in your cooperation and participation, accept my sincere thanks and appreciation.

Hassan K. Al-Mahdi

**PhD Researcher
Brunel Business School
Brunel University, Uxbridge, UB8 3PH
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Email: <hassan_al_mahdi@hotmail.com>**

**An Investigation of the Role of Higher Education Institutions
(HEIs) in Promoting Entrepreneurship Education Programmes
(EEPs) in Saudi Arabia**

**Survey Questionnaire
Time 1/Pre-test**

Code number:

Note: Please distribute this questionnaire to male and female students at the beginning of their Entrepreneurship course

Please tick mark with (✓) in the box for each statement of the following with appropriate answer.

Demographic (DMGR)

DEMOGRAPHIC		Employee	Self Employment	Unemployed Or Housewife
Father	Father's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother	Mother's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STUDENT'S INFORMATION				
INSTITUTIONS	University/ College	<input type="checkbox"/> KAU <input type="checkbox"/> KSU <input type="checkbox"/> KFUPM <input type="checkbox"/> CBA <input type="checkbox"/> PMU		
SEX	Sex	<input type="checkbox"/> Male		<input type="checkbox"/> Female
AGE	Age	<input type="checkbox"/> Less than 20 years	<input type="checkbox"/> 20 or less than 25 years	<input type="checkbox"/> More than 25 years
COLLEGE	College	<input type="checkbox"/> Engineering <input type="checkbox"/> Economics & Administration	<input type="checkbox"/> Home Economics <input type="checkbox"/> Industrial Management	<input type="checkbox"/> Others
QUALIFICATIONS	Level of Education	<input type="checkbox"/> B.S	<input type="checkbox"/> M.S.	
COURSE TYPE	Course Type	<input type="checkbox"/> Entrepreneurship and Small Business Development Course	<input type="checkbox"/> Others	
COURSSELCTION	Course selection	<input type="checkbox"/> Compulsory	<input type="checkbox"/> Optional	
TRAINING	Entrepreneurship training	<input type="checkbox"/> I have University training. <input type="checkbox"/> None		

First Question: Occupational Status Choice Attitude Index (OSCA)

The aim of the question is to identify your approach about the following reasons are important to consider when you are to decide your future career path:

(A)	Following reasons are factors for becoming as an employee for an organisation (OEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Security (SECU)						
SECU1	Job security	1	2	3	4	5
SECU2	Job stability	1	2	3	4	5
Work load (WOLO)						
WOLO1	Few daily work hours	1	2	3	4	5
WOLO2	To have more spare time	1	2	3	4	5
WOLO3	Fixed working hours	1	2	3	4	5
WOLO4	Limited pressures of work	1	2	3	4	5
WOLO5	Ease at work and free from complexity	1	2	3	4	5
Social Environment (SOEN)						
SOEN1	Social moderate environment	1	2	3	4	5
SOEN2	To become socially active	1	2	3	4	5
Avoid Responsibility (AVRE)						
AVRE1	To take responsibility of the job only	1	2	3	4	5
AVRE2	To avoid being the main responsible person	1	2	3	4	5
AVRE3	To avoid more commitment but to be confined to the post holding	1	2	3	4	5
Career (CARE)						
CARE1	Opportunity for a career development	1	2	3	4	5
CARE2	Opportunity for promotion in the job	1	2	3	4	5
(B)	Following Reasons are factors for becoming self-employed with a full-time work (SEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Economic opportunity (ECOP)						
ECOP1	Existence of economic opportunity	1	2	3	4	5
ECOP2	Getting something rewarding as a result of self-employment	1	2	3	4	5
ECOP3	Obtain a greater share of the rewards and outcomes of self-employment	1	2	3	4	5
Challenge (CHAL)						
CHAL1	Achieve the spirit of challenge and initiative	1	2	3	4	5
CHAL2	Provide a great degree of enthusiasm and activity	1	2	3	4	5
CHAL3	Associate with self-motivation and self-interest	1	2	3	4	5
CHAL4	Provoke more incentives to work, in my own business	1	2	3	4	5
Autonomy (AUTO)						
AUTO1	Enjoy greater freedom of work	1	2	3	4	5
AUTO2	Exercise autonomy in work	1	2	3	4	5
AUTO3	To be able to be chief employer for my own concern	1	2	3	4	5
AUTO4	Enjoy the freedom to determine work assignments	1	2	3	4	5
Authority (AUTH)						
AUTH1	Possess the power to make decisions	1	2	3	4	5
AUTH2	Enjoyment of power	1	2	3	4	5
Self-Realisation (SERE)						

SERE1	Increase of self-actualization opportunities	1	2	3	4	5
SERE2	Perform to achieve personal dream work	1	2	3	4	5
SERE3	Provide opportunity for initiating productive work	1	2	3	4	5
SERE4	To spare area for the application of creative ideas	1	2	3	4	5
Participate in the whole process (PAPR)						
PAPR1	Participation in launching and implementing all phases of work	1	2	3	4	5
PAPR2	Follow-up the implementation of work assignments from A to Z	1	2	3	4	5
(C)	To what extent do you care about what your closed family, friends or people think when you are to decide whether to pursue a career as self-employed?	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	SUBJECTIVE NORMS (SUNO)					
SUNO1	My closed family thinks that I should pursue a career as self-employment	1	2	3	4	5
SUNO2	I care about the opinion of my family when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO3	My closest friends think that I should pursue a career as self-employment	1	2	3	4	5
SUNO4	I care what my closest friends think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO5	People who are important to me think that I should pursue a career as self-employment	1	2	3	4	5
SUNO6	I care what people who are important to me think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
(D) OCCUPATIONAL STATUS CHOICE INTENTION (OSCI)						
OSCI1	I much prefer to run my own business rather than be employed by someone else	1	2	3	4	5
OSCI2	It is very likely that I will pursue a career as self-employed	1	2	3	4	5
OSCI3	It is very likely that I will pursue a career as an employee in an organisation	1	2	3	4	5
(E) PERCEIVED BEHAVIOURAL CONTROL (PEBC)						
PEBC1	For me, being self-employed would be very easy	1	2	3	4	5
PEBC2	If I wanted to, I could easily pursue a career as self-employed	1	2	3	4	5
PEBC3	In case of being self-employed, I have complete control over the situation	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		very few	Few	Not know	Numerous	Very Numerous
Scale						
PEBC4	The number of events outside my control, which could prevent me being self-employed are	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		Very low	Low	Neutral	High	Very N High
Scale						
PEBC5	If I become self-employed, the chances of success would be	1	2	3	4	5
PEBC6	If I pursue a career as self-employed, the chances of failure would be	1	2	3	4	5

< Thank you for taking pain in completing this questionnaire >

**An Investigation of the Role of Higher Education Institutions
(HEIs) in Promoting Entrepreneurship Education Programmes
(EEPs) in Saudi Arabia**

**Survey Questionnaire
Time 2/Post-test (EEPs Group)**

Code number:

Note: Please distribute this questionnaire to male and female students at the ending of their Entrepreneurship course

Please tick mark with (✓) in the box for each statement of the following with appropriate answer.

Demographic (DMGR)

DEMOGRAPHIC		Employee	Self Employment	Unemployed Or Housewife
Father	Father's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother	Mother's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STUDENT'S INFORMATION				
INSTITUTIONS	University/ College	<input type="checkbox"/> KAU <input type="checkbox"/> KSU <input type="checkbox"/> KFUPM <input type="checkbox"/> CBA <input type="checkbox"/> PMU		
SEX	Sex	<input type="checkbox"/> Male		<input type="checkbox"/> Female
AGE	Age	<input type="checkbox"/> Less than 20 years	<input type="checkbox"/> 20 or less than 25 years	<input type="checkbox"/> More than 25 years
COLLEGE	College	<input type="checkbox"/> Engineering <input type="checkbox"/> Economics & Administration	<input type="checkbox"/> Home Economics <input type="checkbox"/> Industrial Management	<input type="checkbox"/> Others
QUALIFICATIONS	Level of Education	<input type="checkbox"/> B.S	<input type="checkbox"/> M.S.	
COURSE TYPE	Course Type	<input type="checkbox"/> Entrepreneurship and Small Business Development Course	<input type="checkbox"/> Others	
COURSESELECTION	Course selection	<input type="checkbox"/> Compulsory	<input type="checkbox"/> Optional	
TRAINING	Entrepreneurship training	<input type="checkbox"/> I have University training. <input type="checkbox"/> None		

First Question: Occupational Status Choice Attitude Index (OSCA)

The aim of the question is to identify your approach about the following reasons are important to consider when you are to decide your future career path:

(A)	Following reasons are factors for becoming as an employee for an organisation (OEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Security (SECU)						
SECU1	Job security	1	2	3	4	5
SECU2	Job stability	1	2	3	4	5
Work load (WOLO)						
WOLO1	Few daily work hours	1	2	3	4	5
WOLO2	To have more spare time	1	2	3	4	5
WOLO3	Fixed working hours	1	2	3	4	5
WOLO4	Limited pressures of work	1	2	3	4	5
WOLO5	Ease at work and free from complexity	1	2	3	4	5
Social Environment (SOEN)						
SOEN1	Social moderate environment	1	2	3	4	5
SOEN2	To become socially active	1	2	3	4	5
Avoid Responsibility (AVRE)						
AVRE1	To take responsibility of the job only	1	2	3	4	5
AVRE2	To avoid being the main responsible person	1	2	3	4	5
AVRE3	To avoid more commitment but to be confined to the post holding	1	2	3	4	5
Career (CARE)						
CARE1	Opportunity for a career development	1	2	3	4	5
CARE2	Opportunity for promotion in the job	1	2	3	4	5
(B)	Following Reasons are factors for becoming self-employed with a full-time work (SEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Economic opportunity (ECOP)						
ECOP1	Existence of economic opportunity	1	2	3	4	5
ECOP2	Getting something rewarding as a result of self-employment	1	2	3	4	5
ECOP3	Obtain a greater share of the rewards and outcomes of self-employment	1	2	3	4	5
Challenge (CHAL)						
CHAL1	Achieve the spirit of challenge and initiative	1	2	3	4	5
CHAL2	Provide a great degree of enthusiasm and activity	1	2	3	4	5
CHAL3	Associate with self-motivation and self-interest	1	2	3	4	5
CHAL4	Provoke more incentives to work, in my own business	1	2	3	4	5
Autonomy (AUTO)						
AUTO1	Enjoy greater freedom of work	1	2	3	4	5
AUTO2	Exercise autonomy in work	1	2	3	4	5
AUTO3	To be able to be chief employer for my own concern	1	2	3	4	5
AUTO4	Enjoy the freedom to determine work assignments	1	2	3	4	5
Authority (AUTH)						
AUTH1	Possess the power to make decisions	1	2	3	4	5
AUTH2	Enjoyment of power	1	2	3	4	5

Self-Realisation (SERE)						
SERE1	Increase of self-actualization opportunities	1	2	3	4	5
SERE2	Perform to achieve personal dream work	1	2	3	4	5
SERE3	Provide opportunity for initiating productive work	1	2	3	4	5
SERE4	To spare area for the application of creative ideas	1	2	3	4	5
Participate in the whole process (PAPR)						
PAPR1	Participation in launching and implementing all phases of work	1	2	3	4	5
PAPR2	Follow-up the implementation of work assignments from A to Z	1	2	3	4	5
(C)	To what extent do you care about what your closed family, friends or people think when you are to decide whether to pursue a career as self-employed?	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	SUBJECTIVE NORMS (SUNO)					
SUNO1	My closed family thinks that I should pursue a career as self-employment	1	2	3	4	5
SUNO2	I care about the opinion of my family when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO3	My closest friends think that I should pursue a career as self-employment	1	2	3	4	5
SUNO4	I care what my closest friends think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO5	People who are important to me think that I should pursue a career as self-employment	1	2	3	4	5
SUNO6	I care what people who are important to me think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
(D) OCCUPATIONAL STATUS CHOICE INTENTION (OSCI)						
OSCI1	I much prefer to run my own business rather than be employed by someone else	1	2	3	4	5
OSCI2	It is very likely that I will pursue a career as self-employed	1	2	3	4	5
OSCI3	It is very likely that I will pursue a career as an employee in an organisation	1	2	3	4	5
(E) PERCEIVED BEHAVIOURAL CONTROL (PEBC)						
PEBC1	For me, being self-employed would be very easy	1	2	3	4	5
PEBC2	If I wanted to, I could easily pursue a career as self-employed	1	2	3	4	5
PEBC3	In case of being self-employed, I have complete control over the situation	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		Very few	Few	Not know	Numerou	Very Numerou
Scale						
PEBC4	The number of events outside my control, which could prevent me being self-employed are	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		Very low	Low	Neutral	High	Very N High
Scale						
PEBC5	If I become self-employed, the chances of success would be	1	2	3	4	5
PEBC6	If I pursue a career as self-employed, the chances of failure would be	1	2	3	4	5

Second Question: Learning from Your Entrepreneurship and small business development course (LEMO)

The aim of the question is to identify your approach about your learning after finishing your Entrepreneurship courses that may increase and enhance your understanding and consider when you are to decide your future career path after finishing your Entrepreneurship course:

(A)	To what extent did your Entrepreneurship courses increased the following (LEMO)	Scale	No confirmed benefit	Limited benefit	Neutral	Confirmed benefit	Large confirmed benefit
			1	2	3	4	5
LEMO1	Your understanding of the attitudes, values and motivation of entrepreneurs (i.e. why do entrepreneurs act?)		1	2	3	4	5
LEMO2	Your understanding of the actions someone has to take in order to start a business (i.e. what needs to be done?)		1	2	3	4	5
LEMO3	Your practical management skills in order to start a business (i.e. how do I start the venture?)		1	2	3	4	5
LEMO4	Your ability to develop networks of relations (i.e. who do I need to know?)		1	2	3	4	5
LEMO5	Your ability to identify an opportunity (i.e. when do I need to act to capture opportunities?)		1	2	3	4	5
(B)	INSPIRATION (INSP)	Scale	Not at all	Some extent no	Neutral	Some extent yes	To large extent
			1	2	3	4	5
INSP1	Do you remember any particular event or input during your Entrepreneurship course that caused a dramatic change in your heart and thinking to consider becoming an entrepreneur?		1	2	3	4	5
INSP2	Do you remember any particular event or input during your study Entrepreneurship course that made you to consider embarking on an entrepreneurial career?		1	2	3	4	5

Third Question: University Incubation Resources (UPRI)

The aim of the question is to determine your using of the following resources and Incubators at the university during your study of the Entrepreneurship courses:

(A)	To which extent have you used each of the following resources items at the university during your study of the Entrepreneurship course (UPRI)	Scale	Minimal utilisation	Limited benefit	Neutral	Confirmed benefit	Extensive utilisation
			1	2	3	4	5
UPRI1	A pool of entrepreneurial-minded classmates for building a team minimal utilisation		1	2	3	4	5
UPRI2	A pool of university technology		1	2	3	4	5
UPRI3	Advice from faculty and experts in the area of incubators		1	2	3	4	5
UPRI4	Advice from classmates		1	2	3	4	5
UPRI5	Advice from tech-transfer officers		1	2	3	4	5
UPRI6	Research resources (library / web)		1	2	3	4	5
UPRI7	Networking events and building relationships		1	2	3	4	5
UPRI8	Physical space for meetings		1	2	3	4	5
UPRI9	Business plan competitions (testing ground for the idea)		1	2	3	4	5
UPRI10	Seek funding from university		1	2	3	4	5
UPRI11	Referrals to investors		1	2	3	4	5

Fourth Question: Start-Up Activities

The aim of the fourth question is to identify your approach based on the current situation of establishing your own business after finishing your Entrepreneurship course:

START A NEW BUSINESS (STBU)		Yes	No
STBU1	Are you involved in evaluating a new business idea?		
STBU2	Are you trying to start a business for real, as opposed to just evaluating an idea out of interest or as part of an academic exercise?		
Have initiated or completed activities associated with starting a new business of the following:			
BUSINESS PLANNING (BUSP)		Yes	No
BUSP1	You prepared a proper business plan		
BUSP2	Organised a start-up team		
BUSP3	Looked for facilities and equipments		
BUSP4	Acquired facilities and equipments		
BUSP5	Developed products/service		
BUSP6	Conducted market research		
BUSP7	Devoted most of your time to the business		
FINANCING THE NEW FIRM (FINF)			
FINF1	Saved money to invest		
FINF2	Invested own money		

FINF3	Applied for bank funding		
FINF4	Received bank funding		
FINF5	Applied for government funding		
FINF6	Received government funding		
INTERACTION WITH THE EXTERNAL ENVIRONMENT (INEE)			
INEE1	Applied for licence, patents etc.		
INEE2	Hired employees.		
INEE3	Done sales promotion activities.		
INEE4	Done business registration.		
INEE5	Received first revenues.		
INEE6	Net income is positive.		

< Thank you for taking pain in completing this questionnaire >

An Investigation of the Role of Higher Education Institutions (HEIs) in Promoting Entrepreneurship Education Programmes (EEPs) in Saudi Arabia

**Survey Questionnaire
Time 1/Pre-Test (Control Group)**

Code number:

Note: Please distribute this questionnaire to male and female students at the beginning of their courses **NOT ANY OF** Entrepreneurship Courses.

Please tick mark with (✓) in the box for each statement of the following with appropriate answer.

Demographic (DMGR)

DEMOGRAPHIC		Employee	Self Employment	Unemployed Or Housewife
Father	Father's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother	Mother's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STUDENT'S INFORMATION				
INSTITUTIONS	University/ College	<input type="checkbox"/> KAU <input type="checkbox"/> KSU <input type="checkbox"/> KFUPM <input type="checkbox"/> CBA <input type="checkbox"/> PMU		
SEX	Sex	<input type="checkbox"/> Male		<input type="checkbox"/> Female
AGE	Age	<input type="checkbox"/> Less than 20 years	<input type="checkbox"/> 20 or less than 25 years	<input type="checkbox"/> More than 25 years
COLLEGE	College	<input type="checkbox"/> Engineering <input type="checkbox"/> Economics & Administration	<input type="checkbox"/> Home Economics <input type="checkbox"/> Industrial Management	<input type="checkbox"/> Others
QUALIFICATIONS	Level of Education	<input type="checkbox"/> B.S	<input type="checkbox"/> M.S.	
COURSE TYPE	Course Type	<input type="checkbox"/> Entrepreneurship and Small Business Development Course	<input type="checkbox"/> Others	
COURSELCTION	Course selection	<input type="checkbox"/> Compulsory		<input type="checkbox"/> Optional
TRAINING	Entrepreneurship training	<input type="checkbox"/> I have University training. <input type="checkbox"/> None		

First Question: Occupational Status Choice Attitude Index (OSCA)

The aim of the question is to identify your approach about the following reasons are important to consider when you are to decide your future career path:

(A)	Following reasons are factors for becoming as an employee for an organisation (OEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Security (SECU)						
SECU1	Job security	1	2	3	4	5
SECU2	Job stability	1	2	3	4	5
Work load (WOLO)						
WOLO1	Few daily work hours	1	2	3	4	5
WOLO2	To have more spare time	1	2	3	4	5
WOLO3	Fixed working hours	1	2	3	4	5
WOLO4	Limited pressures of work	1	2	3	4	5
WOLO5	Ease at work and free from complexity	1	2	3	4	5
Social Environment (SOEN)						
SOEN1	Social moderate environment	1	2	3	4	5
SOEN2	To become socially active	1	2	3	4	5
Avoid Responsibility (AVRE)						
AVRE1	To take responsibility of the job only	1	2	3	4	5
AVRE2	To avoid being the main responsible person	1	2	3	4	5
AVRE3	To avoid more commitment but to be confined to the post holding	1	2	3	4	5
Career (CARE)						
CARE1	Opportunity for a career development	1	2	3	4	5
CARE2	Opportunity for promotion in the job	1	2	3	4	5
(B)	Following Reasons are factors for becoming self-employed with a full-time work (SEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Economic opportunity (ECOP)						
ECOP1	Existence of economic opportunity	1	2	3	4	5
ECOP2	Getting something rewarding as a result of self-employment	1	2	3	4	5
ECOP3	Obtain a greater share of the rewards and outcomes of self-employment	1	2	3	4	5
Challenge (CHAL)						
CHAL1	Achieve the spirit of challenge and initiative	1	2	3	4	5
CHAL2	Provide a great degree of enthusiasm and activity	1	2	3	4	5
CHAL3	Associate with self-motivation and self-interest	1	2	3	4	5
CHAL4	Provoke more incentives to work, in my own business	1	2	3	4	5
Autonomy (AUTO)						
AUTO1	Enjoy greater freedom of work	1	2	3	4	5
AUTO2	Exercise autonomy in work	1	2	3	4	5
AUTO3	To be able to be chief employer for my own concern	1	2	3	4	5
AUTO4	Enjoy the freedom to determine work assignments	1	2	3	4	5
Authority (AUTH)						
AUTH1	Possess the power to make decisions	1	2	3	4	5
AUTH2	Enjoyment of power	1	2	3	4	5

Self-Realisation (SERE)						
SERE1	Increase of self-actualization opportunities	1	2	3	4	5
SERE2	Perform to achieve personal dream work	1	2	3	4	5
SERE3	Provide opportunity for initiating productive work	1	2	3	4	5
SERE4	To spare area for the application of creative ideas	1	2	3	4	5
Participate in the whole process (PAPR)						
PAPR1	Participation in launching and implementing all phases of work	1	2	3	4	5
PAPR2	Follow-up the implementation of work assignments from A to Z	1	2	3	4	5
(C)	To what extent do you care about what your closed family, friends or people think when you are to decide whether to pursue a career as self-employed?	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	SUBJECTIVE NORMS (SUNO)					
SUNO1	My closed family thinks that I should pursue a career as self-employment	1	2	3	4	5
SUNO2	I care about the opinion of my family when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO3	My closest friends think that I should pursue a career as self-employment	1	2	3	4	5
SUNO4	I care what my closest friends think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
SUNO5	People who are important to me think that I should pursue a career as self-employment	1	2	3	4	5
SUNO6	I care what people who are important to me think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
(D) OCCUPATIONAL STATUS CHOICE INTENTION (OSCI)						
OSCI1	I much prefer to run my own business rather than be employed by someone else	1	2	3	4	5
OSCI2	It is very likely that I will pursue a career as self-employed	1	2	3	4	5
OSCI3	It is very likely that I will pursue a career as an employee in an organisation	1	2	3	4	5
(E) PERCEIVED BEHAVIOURAL CONTROL (PEBC)						
PEBC1	For me, being self-employed would be very easy	1	2	3	4	5
PEBC2	If I wanted to, I could easily pursue a career as self-employed	1	2	3	4	5
PEBC3	In case of being self-employed, I have complete control over the situation	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		Very few	Few	Not know	Numerou	Very Numerou
Scale						
PEBC4	The number of events outside my control, which could prevent me being self-employed are	1	2	3	4	5
.....continuation PERCEIVED BEHAVIOURAL CONTROL		Very low	Low	Neutral	High	Very N High
Scale						
PEBC5	If I become self-employed, the chances of success would be	1	2	3	4	5
PEBC6	If I pursue a career as self-employed, the chances of failure would be	1	2	3	4	5

< Thank you for taking pain in completing this questionnaire >

An Investigation of the Role of Higher Education Institutions (HEIs) in Promoting Entrepreneurship Education Programmes (EEPs) in Saudi Arabia

Survey Questionnaire
Time 2 / Post-Test (Control Group)

Code number:

Note: Please distribute this questionnaire to male and female students at the ending of their courses **NOT ANY OF** Entrepreneurship Courses.

Please tick mark with (✓) in the box for each statement of the following with appropriate answer.

Demographic (DMGR)

DEMOGRAPHIC		Employee	Self Employment	Unemployed Or Housewife
Father	Father's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mother	Mother's occupation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STUDENT'S INFORMATION				
INSTITUTIONS	University/ College	<input type="checkbox"/> KAU <input type="checkbox"/> KSU <input type="checkbox"/> KFUPM <input type="checkbox"/> CBA <input type="checkbox"/> PMU		
SEX	Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female		
AGE	Age	<input type="checkbox"/> Less than 20 years	<input type="checkbox"/> 20 or less than 25 years	<input type="checkbox"/> More than 25 years
COLLEGE	College	<input type="checkbox"/> Engineering <input type="checkbox"/> Economics & Administration	<input type="checkbox"/> Home Economics <input type="checkbox"/> Industrial Management	<input type="checkbox"/> Others
QUALIFICATIONS	Level of Education	<input type="checkbox"/> B.S	<input type="checkbox"/> M.S.	
COURSE TYPE	Course Type	<input type="checkbox"/> Entrepreneurship and Small Business Development Course	<input type="checkbox"/> Others	
COURSSELECTION	Course selection	<input type="checkbox"/> Compulsory <input type="checkbox"/> Optional		
TRAINING	Entrepreneurship training	<input type="checkbox"/> I have University training. <input type="checkbox"/> None		

First Question: Occupational Status Choice Attitude Index (OSCA)

The aim of the question is to identify your approach about the following reasons are important to consider when you are to decide your future career path:

(A)	Following reasons are factors for becoming as an employee for an organisation (OEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Security (SECU)						
SECU1	Job security	1	2	3	4	5
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Work load (WOLO)						
WOLO1	Few daily work hours	1	2	3	4	5
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SOEN1	Social moderate environment	1	2	3	4	5
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(B)	Following Reasons are factors for becoming self-employed with a full-time work (SEMP)	Scale				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Economic opportunity (ECOP)						
ECOP1	Existence of economic opportunity	1	2	3	4	5
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SERE4	To spare area for the application of creative ideas	1	2	3	4	5
Participate in the whole process (PAPR)						
PAPR1	Participation in launching and implementing all phases of work	1	2	3	4	5
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(C)	To what extent do you care about what your closed family, friends or people think when you are to decide whether to pursue a career as self-employed?	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	SUBJECTIVE NORMS (SUNO)					
	Scale					
SUNO1	My closed family thinks that I should pursue a career as self-employment	1	2	3	4	5
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SUNO5	People who are important to me think that I should pursue a career as self-employment	1	2	3	4	5
SUNO6	I care what people who are important to me think when I decide whether or not to pursue a career as self-employed	1	2	3	4	5
(D) OCCUPATIONAL STATUS CHOICE INTENTION (OSCI)						
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(E) PERCEIVED BEHAVIOURAL CONTROL (PEBC)						
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PEBC3	In case of being self-employed, I have complete control over the situation	1	2	3	4	5
continuation PERCEIVED BEHAVIOURAL CONTROL	Very few	Few	Not know	Numerou	Very Numerou
	Scale					
PEBC4	The number of events outside my control, which could prevent me being self-employed are	1	2	3	4	5
continuation PERCEIVED BEHAVIOURAL CONTROL	Very low	Low	Neutral	High	Very N High
	Scale					
PEBC5	If I become self-employed, the chances of success would be	1	2	3	4	5
PEBC6	If I pursue a career as self-employed, the chances of failure would be	1	2	3	4	5

Second Question: Learning from Your course

The aim of the question is to identify your approach about your learning after finishing your course that may increase and enhance your understanding and consider when you are to decide your future career path after finishing your course:

(A)	To what extent did your courses increased the following	Scale	No confirmed benefit	Limited benefit	Neutral	Confirmed benefit	Large confirmed benefit
			1	2	3	4	5
LEMO1	Your understanding of the attitudes, values and motivation of entrepreneurs (i.e. why do entrepreneurs act?)		1	2	3	4	5
LEMO2	Your understanding of the actions someone has to take in order to start a business (i.e. what needs to be done?)		1	2	3	4	5
LEMO3	Your practical management skills in order to start a business (i.e. how do I start the venture?)		1	2	3	4	5
LEMO4	Your ability to develop networks of relations (i.e. who do I need to know?)		1	2	3	4	5
LEMO5	Your ability to identify an opportunity (i.e. when do I need to act to capture opportunities?)		1	2	3	4	5
(B)	INSPIRATION (INSP)	Scale	Not at all	Some extent no	Neutral	Some extent yes	To large extent
			1	2	3	4	5
INSP1	Do you remember any particular event or input during your course that caused a dramatic change in your heart and thinking to consider becoming an entrepreneur?		1	2	3	4	5
INSP2	Do you remember any particular event or input during your study course that made you to consider embarking on an entrepreneurial career?		1	2	3	4	5

Third Question: University Incubation Resources (UPRI)

The aim of the question is to determine your using of the following resources and Incubators at the university during your study your course:

(A)	To which extent have you used each of the following resources items at the university during your study your course (UPRI)	Scale	Minimal utilisation	Limited benefit	Neutral	Confirmed benefit	Extensive utilisation
UPRI1	A pool of entrepreneurial-minded classmates for building a team minimal utilisation		1	2	3	4	5
UPRI2	A pool of university technology		1	2	3	4	5
UPRI3	Advice from faculty and experts in the area of incubators		1	2	3	4	5
UPRI4	Advice from classmates		1	2	3	4	5
UPRI5	Advice from tech-transfer officers		1	2	3	4	5
UPRI6	Research resources (library / web)		1	2	3	4	5
UPRI7	Networking events and building relationships		1	2	3	4	5
UPRI8	Physical space for meetings		1	2	3	4	5
UPRI9	Business plan competitions (testing ground for the idea)		1	2	3	4	5
UPRI10	Seek funding from university		1	2	3	4	5
UPRI11	Referrals to investors		1	2	3	4	5

Fourth Question: Start-Up Activities

The aim of the fourth question is to identify your approach based on the current situation of establishing your own business after finishing your Course:

START A NEW BUSINESS (STBU)		Yes	No
STBU1	Are you involved in evaluating a new business idea?		
STBU2	Are you trying to start a business for real, as opposed to just evaluating an idea out of interest or as part of an academic exercise?		
Have initiated or completed activities associated with starting a new business of the following:			
BUSINESS PLANNING (BUSP)		Yes	No
BUSP1	You prepared a proper business plan		
BUSP2	Organised a start-up team		
BUSP3	Looked for facilities and equipments		
BUSP4	Acquired facilities and equipments		
BUSP5	Developed products/service		
BUSP6	Conducted market research		
BUSP7	Devoted most of your time to the business		
FINANCING THE NEW FIRM (FINF)			
FINF1	Saved money to invest		
FINF2	Invested own money		
FINF3	Applied for bank funding		
FINF4	Received bank funding		

FINF5	Applied for government funding		
FINF6	Received government funding		
INTERACTION WITH THE EXTERNAL ENVIRONMENT (INEE)			
INEE1	Applied for licence, patents etc.		
INEE2	Hired employees.		
INEE3	Done sales promotion activities.		
INEE4	Done business registration.		
INEE5	Received first revenues.		
INEE6	Net income is positive.		

< Thank you for taking pain in completing this questionnaire >

Arabic Version of the Questionnaires

حفظكم الله

سعادة

الطالب / الطالبة

السلام عليكم ورحمة الله وبركاته وبعد!!!

إن نجاح البحث العلمي يتطلب كما تعلمون تضافر الجهود من قبل كافة الأطراف، مع العلم أن المنفعة عامة لخدمة بلدنا الحبيب.

ويطيب لي أفيدكم بأنني مبتعث لدراسة درجة الدكتوراه بجامعة برونييل بالمملكة المتحدة، وأنني أقوم حالياً بجمع البيانات الميدانية من الطلاب اللذين يدرسون المقررات الخاصة بريادة الأعمال والمؤسسات الصغيرة وكذلك الطلاب اللذين لا يدرسون المقررات الخاصة بريادة الأعمال والمؤسسات الصغيرة ببعض الجامعات السعودية وعنوان البحث هو "التحقق من دور مؤسسات التعليم العالي السعودي في تعليم وتعزيز ريادة الأعمال في الجامعات السعودية : دراسة ميدانية".

أمل تكرمكم باستقطاع جزء من وقتكم الثمين للمشاركة في هذا البحث الهام وذلك بالتفضل بتعبئة الاستبانة المرفقة وذلك بموضوعية نظراً لأهمية آرائكم واتجاهاتكم لنجاح الجهد من وراء هذا البحث حتى لو شعرت أن بعض نقاط الاستبانة لا تنطبق عليك أرجو عدم إهمالها، مع التفضل بالإحاطة أن بيانات الاستبانة ستكون موضع السرية ولن يطلع عليها أحد غير الباحث، كما لن تستخدم إلا لأغراض هذا البحث.

وثقتي كبيرة في تعاونكم ومشاركتكم، وفقكم الله إلى ما يحب ويرضى.

مع تحياتي وتقديري!!!

الباحث

حسن بن قصادي المهدي

كلية ادارة الأعمال

جامعة برونييل - أكسبردج

جوال: 00966553255818

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إيميل: hassan_al_mahdi@hotmail.com

دور مؤسسات التعليم العالي في تعزيز تعليم ريادة الأعمال في الجامعات السعودية

Survey Questionnaire
Time 1/Pre-test (EEPs Group)

رقم الكود

ملاحظة: فضلاً يوزع على الطلاب/الطالبات عند بداية الدراسة بمقرر ريادة الأعمال.
فضلاً ضع (✓) في المربع أو الرقم المناسب لكل عبارة من العبارات التالية وذلك للدلالة على مدى موافقتك أو عدم موافقتكم على مضمونها.

الخصائص الديموغرافية DMGR:

الخصائص الديموغرافية				
عاطل/عاطلة عن العمل (ربة منزل)	عمل حر خاص به / بها	موظف	الوالد	الأم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مجال عمل الوالد (أغلب الفترات)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مجال عمل الأم (أغلب الفترات)	

بيانات خاصة بالطالب

الجامعة		الجامعة/الكلية	الجنس	الجنس
<input type="checkbox"/>	أنثى	<input type="checkbox"/>	نكر	السن
<input type="checkbox"/>	(25) سنة فأكثر	<input type="checkbox"/>	أقل من (20) سنة	السن
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	الهندسة الهندسة الصناعية	الكلية
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	مجازستير	الكلية
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	مقرر ريادة الأعمال وتطوير المنشآت الصغيرة	الشهادة
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	مقرر	المقرر الدراسي
<input type="checkbox"/>	إجباري	<input type="checkbox"/>	اختياري	تسجيل المقرر
<input type="checkbox"/>	نعم	<input type="checkbox"/>	لا	التدريب

السؤال الأول:

يهدف السؤال إلى التعرف على اتجاهاتك نحو الأسباب والدوافع التي قد تشجعك قبل بداية دراسة المقرر إما للعمل بوظيفة بالقطاع الحكومي والخاص أو بدء عملك الحر والتفرغ للعمل به.

أ						الوزن	من الأسباب التي تشجعك على العمل كموظف في القطاع الحكومي (OEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1	1		
الأمن والاستقرار الوظيفي (SECU)							
5	4	3	2	1	1	الأمن الوظيفي	SECU1
5	4	3	2	1	1	الاستقرار الوظيفي	SECU2
عبء العمل (WOLO)							
5	4	3	2	1	1	العمل اليومي لساعات أقل	WOLO1
5	4	3	2	1	1	إتاحة الفرصة لوقت فراغ أطول	WOLO2
5	4	3	2	1	1	برنامج وساعات عمل محددة	WOLO3
5	4	3	2	1	1	محدودية ضغوط العمل	WOLO4
5	4	3	2	1	1	سهولة العمل وخلوه من التعقيد	WOLO5
البيئة الاجتماعية (SOEN)							
5	4	3	2	1	1	التمتع بحياة اجتماعية متوازنة	SOEN1
5	4	3	2	1	1	أصبح نشاطاً اجتماعياً	SOEN2
المسؤولية عن العمل (AVRE)							
5	4	3	2	1	1	تحمل المسؤولية الخاصة بالوظيفة فقط	AVRE1
5	4	3	2	1	1	تجنب تحمل عبء المسؤولية الرئيسية عن المؤسسة كما هو بالعمل الحر	AVRE2
5	4	3	2	1	1	محدودية حجم عبء الالتزام بالوظيفة	AVRE3
المسار الوظيفي (CARE)							
5	4	3	2	1	1	وجود فرصة تطور المسار الوظيفي	CARE1
5	4	3	2	1	1	وجود فرص للترقية	CARE2
ب						الوزن	من الأسباب التي تشجعك على بدء عملك الحر الخاص بك والتفرغ للعمل به (SEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1	1		
الفرص الاقتصادية (ECOP)							
5	4	3	2	1	1	توفر الفرص الاقتصادية المربحة	ECOP1
5	4	3	2	1	1	الحصول على مقابل مجزي نتيجة العمل الحر الخاص بي	ECOP2
5	4	3	2	1	1	الحصول على حصة أكبر من مردودات ونواتج العمل الحر الخاص بي	ECOP3
روح المبادرة والتحدي (CHAL)							
5	4	3	2	1	1	ليحقق روح التحدي والمبادرة	CHAL1
5	4	3	2	1	1	ليوفر درجة كبيرة من الحماس والنشاط	CHAL2
5	4	3	2	1	1	يرتبط بالدوافع الذاتية والمصلحة الشخصية	CHAL3
5	4	3	2	1	1	يستثير مزيد من الحوافز للعمل الحر الخاص بي	CHAL4
الاستقلالية (AUTO)							
5	4	3	2	1	1	التمتع بحرية أكبر في العمل	AUTO1
5	4	3	2	1	1	ممارسة الاستقلالية في العمل	AUTO2
5	4	3	2	1	1	التمكن من أكون رئيساً وصاحب العمل	AUTO3
5	4	3	2	1	1	التمتع بحرية تحديد مهام العمل	AUTO4

السلطة (AUTH)					
5	4	3	2	1	امتلاك القوة اللازمة لاتخاذ القرارات
5	4	3	2	1	التمتع بالسلطة
تحقيق الذات (SERE)					
5	4	3	2	1	إزدياد فرص تحقيق الذات
5	4	3	2	1	أداة لتحقيق الحلم الشخصي في العمل
5	4	3	2	1	إتاحة الفرصة للمبادرة بعمل منتج جديد
5	4	3	2	1	يوفر مجال لتطبيق الأفكار الإبداعية
المشاركة في كافة مراحل العمل (PAPR)					
5	4	3	2	1	المشاركة في بدء وتنفيذ جميع مراحل العمل
5	4	3	2	1	متابعة تنفيذ مهام العمل من (الألف إلى الياء)
ت					
موافق تماماً	موافق	محايد	غير موافق	على الإطلاق	الى اي مدى تهتم بتفكير عائلتك المقربين، اصدقائك، أو الناس عندما تقرر اختيار عملك الحر (SUNO)
5	4	3	2	1	الوزن
المعايير الشخصية (SUNO)					
5	4	3	2	1	تعتقد أسرتي في وجوب المبادرة بإنشاء عمل حر خاص بي
5	4	3	2	1	أهتم برأي أسرتي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه
5	4	3	2	1	يعتقد أقرب أصدقائي في وجوب المبادرة بإنشاء عمل حر خاص بي
5	4	3	2	1	أهتم برأي أقرب أصدقائي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه
5	4	3	2	1	يعتقد الأشخاص ذوي الأهمية لي في وجوب المبادرة بإنشاء عمل حر خاص بي
5	4	3	2	1	أهتم برأي الأشخاص ذوي الأهمية لي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه
(ث) هدف اختيار الوضع الوظيفي (OSCI)					
5	4	3	2	1	أفضل بشدة إدارة عملي الخاص بدلاً من العمل لحساب آخرين
5	4	3	2	1	على الأرجح أنني سأبادر بإنشاء عمل حر خاص بي
5	4	3	2	1	على الأرجح أنني سأعمل كموظف في القطاع الحكومي أو الخاص
(ج) التحكم في السلوك (PEBC)					
5	4	3	2	1	بالنسبة لي يعتبر إنشاء عمل خاص بي سهل جداً
5	4	3	2	1	يمكنني إنشاء عمل حر خاص بي بسهولة إذا رغبت في ذلك
5	4	3	2	1	في حال إنشاء عمل حر خاص بي فإنه يمكنني تحمل أعباء ذلك
متعدد	متعدد	أحد	قليل	أحد	التعبير
5	4	3	2	1	الوزن
5	4	3	2	1	عدد العوامل خارج نطاق سيطرتي والتي يمكن أن تمنعني من إنشاء عمل حر خاص بي
مرتفع جداً	مرتفع	أحد	منخفض	منخفض	التعبير
5	4	3	2	1	الوزن
5	4	3	2	1	فرص النجاح في حال إنشاء عمل حر خاص بي
5	4	3	2	1	فرص الفشل في حال إنشاء عمل حر خاص بي

أشركم على تفضلكم بالإجابة،،

دور مؤسسات التعليم العالي في تعزيز تعليم ريادة الأعمال في الجامعات السعودية

Survey Questionnaire
Time 2/Post-test (EEPs Group)

رقم الكود

ملاحظة: فضلاً يوزع على الطلاب/الطالبات عند نهاية الدراسة بمقرر ريادة الأعمال.
 فضلاً ضع (✓) في المربع أو الرقم المناسب لكل عبارة من العبارات التالية وذلك للدلالة على مدى موافقتك
 أو عدم موافقتك على مضمونها.
 الخصائص الديموغرافية **DMGR**:

الخصائص الديموغرافية				
عاطل/عاطلة عن العمل (ربة منزل)	عمل حر خاص به / بها	موظف	الوالد	الأم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مجال عمل الوالد (أغلب الفترات)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مجال عمل الأم (أغلب الفترات)	

بيانات خاصة بالطالب

الجامعة		الجامعة/الكلية	الجنس	الجنس
<input type="checkbox"/>	أنثى	<input type="checkbox"/>	ذكر	الجنس
<input type="checkbox"/>	(25) سنة فأكثر	<input type="checkbox"/>	أقل من (20) سنة	السن
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	الهندسة الهندسة الصناعية	الكلية
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	بكالوريوس	الشهادة
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	مقرر ريادة الأعمال وتطوير المنشآت الصغيرة	المقرر الدراسي
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	اختياري	تسجيل المقرر
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	إجباري	تسجيل المقرر
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	نعم لا	التدريب
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	حصلت على برنامج تدريبي لريادة الأعمال بالجامعة	التدريب

السؤال الأول:

يهدف السؤال إلى التعرف على اتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة مقرر زيادة الأعمال إما بوظيفة بالقطاع الحكومي والخاص أو بدء عملك الحر والتفرغ للعمل به.

أ						الوزن	من الأسباب التي تشجعك على العمل كموظف في القطاع الحكومي (OEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1			
الأمن والاستقرار الوظيفي (SECU)							
5	4	3	2	1		الأمن الوظيفي	SECU1
5	4	3	2	1		الاستقرار الوظيفي	SECU2
عبء العمل (WOLO)							
5	4	3	2	1		العمل اليومي لساعات أقل	WOLO1
5	4	3	2	1		إتاحة الفرصة لوقت فراغ أطول	WOLO2
5	4	3	2	1		برنامج وساعات عمل محددة	WOLO3
5	4	3	2	1		محدودية ضغوط العمل	WOLO4
5	4	3	2	1		سهولة العمل وخلوه من التعقيد	WOLO5
البيئة الاجتماعية (SOEN)							
5	4	3	2	1		التمتع بحياة اجتماعية متوازنة	SOEN1
5	4	3	2	1		أصبح نشاطاً اجتماعياً	SOEN2
المسؤولية عن العمل (AVRE)							
5	4	3	2	1		تحمل المسؤولية الخاصة بالوظيفة فقط	AVRE1
5	4	3	2	1		تجنب تحمل عبء المسؤولية الرئيسية عن المؤسسة كما هو بالعمل الحر	AVRE2
5	4	3	2	1		محدودية حجم عبء الالتزام بالوظيفة	AVRE3
المسار الوظيفي (CARE)							
5	4	3	2	1		وجود فرصة تطور المسار الوظيفي	CARE1
5	4	3	2	1		وجود فرص للترقية	CARE2
ب						الوزن	من الأسباب التي تشجعك على بدء عملك الحر الخاص بك والتفرغ للعمل به (SEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1			
الفرص الاقتصادية (ECOP)							
5	4	3	2	1		توفر الفرص الاقتصادية المربحة	ECOP1
5	4	3	2	1		الحصول على مقابل مجزي نتيجة العمل الحر الخاص بي	ECOP2
5	4	3	2	1		الحصول على حصة أكبر من مردودات ونواتج العمل الحر الخاص بي	ECOP3
روح المبادرة والتحدي (CHAL)							
5	4	3	2	1		ليحقق روح التحدي والمبادرة	CHAL1
5	4	3	2	1		ليوفر درجة كبيرة من الحماس والنشاط	CHAL2
5	4	3	2	1		يرتبط بالدوافع الذاتية والمصلحة الشخصية	CHAL3
5	4	3	2	1		يستثير مزيد من الحوافز للعمل الحر الخاص بي	CHAL4
الاستقلالية (AUTO)							
5	4	3	2	1		التمتع بحرية أكبر في العمل	AUTO1
5	4	3	2	1		ممارسة الاستقلالية في العمل	AUTO2
5	4	3	2	1		التمكن من أكون رئيساً وصاحب العمل	AUTO3
5	4	3	2	1		التمتع بحرية تحديد مهام العمل	AUTO4

السلطة (AUTH)						
5	4	3	2	1	امتلاك القوة اللازمة لاتخاذ القرارات	AUTH1
5	4	3	2	1	التمتع بالسلطة	AUTH2
تحقيق الذات (SERE)						
5	4	3	2	1	إزدياد فرص تحقيق الذات	SERE1
5	4	3	2	1	أداة لتحقيق الحلم الشخصي في العمل	SERE2
5	4	3	2	1	إتاحة الفرصة للمبادرة بعمل منتج جديد	SERE3
5	4	3	2	1	يوفر مجال لتطبيق الأفكار الإبداعية	SERE4
المشاركة في كافة مراحل العمل (PAPR)						
5	4	3	2	1	المشاركة في بدء وتنفيذ جميع مراحل العمل	PAPR1
5	4	3	2	1	متابعة تنفيذ مهام العمل من (الألف إلى الياء)	PAPR2
ت						
موافق تماماً	موافق	محايد	غير موافق	على الإطلاق	الى اي مدى تهتم بتفكير عائلتك المقربين، اصدقائك، أو الناس عندما تقرر اختيار عملك الحر	(SUNO)
5	4	3	2	1	الوزن	
المعايير الشخصية (SUNO)						
5	4	3	2	1	تعتقد أسرتي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO1
5	4	3	2	1	أهتم برأي أسرتي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO2
5	4	3	2	1	يعتقد أقرب أصدقائي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO3
5	4	3	2	1	أهتم برأي أقرب أصدقائي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO4
5	4	3	2	1	يعتقد الأشخاص ذوي الأهمية لي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO5
5	4	3	2	1	أهتم برأي الأشخاص ذوي الأهمية لي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO6
(ث) هدف اختيار الوضع الوظيفي (OSCI)						
5	4	3	2	1	أفضل بشدة إدارة عملي الخاص بدلاً من العمل لحساب آخرين	OSCI1
5	4	3	2	1	على الأرجح أنني سأبادر بإنشاء عمل حر خاص بي	OSCI2
5	4	3	2	1	على الأرجح أنني سأعمل كموظف في القطاع الحكومي أو الخاص	OSCI3
(ج) التحكم في السلوك (PEBC)						
5	4	3	2	1	بالنسبة لي يعتبر إنشاء عمل خاص بي سهل جداً	PEBC1
5	4	3	2	1	يمكنني إنشاء عمل حر خاص بي بسهولة إذا رغبت في ذلك	PEBC2
5	4	3	2	1	في حال إنشاء عمل حر خاص بي فإنه يمكنني تحمّل أعباء ذلك	PEBC3
متعدد	متعدد	إلى حد ما	قليل	أقل	التعبير	
5	4	3	2	1	الوزن	
5	4	3	2	1	عدد العوامل خارج نطاق سيطرتي والتي يمكن أن تمنعني من إنشاء عمل حر خاص بي	PEBC4
مرتفع جداً	مرتفع	إلى حد ما	منخفض	أقل	التعبير	
5	4	3	2	1	الوزن	
5	4	3	2	1	فرص النجاح في حال إنشاء عمل حر خاص بي	PEBC5
5	4	3	2	1	فرص الفشل في حال إنشاء عمل حر خاص بي	PEBC6

السؤال الثاني: التعلّم من مقرر ريادة الأعمال (LEMO)
يهدف السؤال إلى التعرف على مدى استفادتك من مقرر ريادة في زيادة فهمك لاتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة المقرر لتحديد مستقبلك الوظيفي.

تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	أ	
					الوزن	مدى استفادتك من مقرر ريادة الأعمال في زيادة العوامل التالية. (LEMO)
5	4	3	2	1		
5	4	3	2	1		LEMO1 إلى أي مدى أسهم مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة في زيادة فهمك لاتجاهاتك وقيم ودوافع رواد الأعمال (مثال: لماذا يعمل رواد الأعمال؟)
5	4	3	2	1		LEMO2 إلى أي مدى أسهم مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة في زيادة فهمك لكافة الأعمال والإجراءات التي يجب أن يقوم بها أي شخص لبدء مشروعه الخاص (مثال: ماذا يجب القيام به لإنشاء المشروع الخاص؟)
5	4	3	2	1		LEMO3 إلى أي مدى ساعدك مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة في تنمية وزيادة مهاراتك الإدارية عملياً من أجل بدء مشروع خاص (مثال: كيف يمكن البدء في إنشاء مشروع خاص؟)
5	4	3	2	1		LEMO4 إلى أي مدى ساعدك مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة في تنمية وزيادة قدرتك على تطوير علاقات في بيئة الأعمال (مثال: من يجب التعرف عليهم عند إنشاء وتشغيل المشروع الخاص؟)
5	4	3	2	1		LEMO5 إلى أي مدى ساعدك مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة في تنمية وزيادة قدرتك على تحديد الفرص الاستثمارية المتاحة الخاصة (مثال: متى يجب أن أتصرف لاغتنام الفرص؟)
تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	ب	
					الوزن	التأثير والإلهام (INSP)
5	4	3	2	1		
5	4	3	2	1		INSP1 هل تتذكر حدث معين أو موقف أدى إلى التأثير فيك أو إلهامك وذلك أثناء دراستك مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة بحيث أدى إلى تغيير جذري في مشاعرك وتفكيرك نحو جدية النظر في أن تصبح من رواد الأعمال؟
5	4	3	2	1		INSP2 إلى أي مدى أثرت فيك المواقف أو الفعاليات أثناء دراستك مقرر ريادة الأعمال وتطوير المؤسسات الصغيرة لتفكر بجدية في إنشاء مشروعك الحر الخاص؟

لسؤال الثالث:

يهدف السؤال إلى التعرف على مدى استفادتك من الإمكانيات والموارد المتاحة والحاضنات بالجامعة أثناء دراسة مقرر ريادة الأعمال في زيادة فهمك لاتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة المقرر لتحديد مستقبلك الوظيفي (UPRI).

تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	أ	
					الوزن	الاستفادة من الإمكانيات والموارد المتاحة والحاضنات بالجامعة أثناء دراستك لمقرر ريادة الأعمال (UPRI)
5	4	3	2	1		
5	4	3	2	1		UPRI1 مجموعة من زملاء الدراسة من ذوي العقول ذات الميل نحو ريادة الأعمال لتكوين فريق عمل في هذا المجال
5	4	3	2	1		UPRI2 التقنيات المتاحة بالجامعة

تحقق استفاضة كبيرة	تحقق استفاضة	محايد	الاستفاضة محدودة	أي استفاضة لا تتحقق	الوزن	الاستفاضة من الإمكانيات والموارد المتاحة والحاضنات بالجامعة أثناء دراستك لمقرر ريادة الأعمال (UPRI)	(1)
5	4	3	2	1		التوجيه والنصح من أعضاء هيئة التدريس أو الخبراء في مجال الحاضنات والتأثر بهم	UPRI3
5	4	3	2	1		النصح والإرشاد من زملاء الدراسة	UPRI4
5	4	3	2	1		التوجيه والنصح من خبراء التقنية بالجامعة	UPRI5
5	4	3	2	1		الإمكانيات البحثية بالجامعة (المكتبة/الإنترنت)	UPRI6
5	4	3	2	1		بناء العلاقات خلال الفعاليات والمناسبات والمؤتمرات المختلفة	UPRI7
5	4	3	2	1		توفر التسهيلات والقاعات الخاصة بعقد الاجتماعات	UPRI8
5	4	3	2	1		لقاءات المناقشة بين الطلاب لعرض أفكار وأطر مشروعاتهم لريادة الأعمال (فرصة لاختبار فكرة مشروعك الصغير)	UPRI9
5	4	3	2	1		الدعم المالي من الجامعة لبدء مشروعك	UPRI10
5	4	3	2	1		إمكانية تقديمك وتزكيتك لمستثمرين للاستثمار في فكرة مشروعك الصغير	UPRI11

السؤال الرابع:

يهدف السؤال إلى التعرف على مدى امكانيتك في الشروع لأنشاء مشروعك الصغير بعد الانتهاء من دراستك مقرر ريادة الأعمال

م	بداية مشروعك (STBU)	نعم	لا
STBU1	هل تقوم حاليا بدراسة فكرة جديدة لمشروع ما؟	<input type="checkbox"/>	<input type="checkbox"/>
STBU2	هل تحاول بدء مشروعاً حقيقياً بك؟ سواء أكانت الفكرة فكرتك أو في إطار تدريب بكاليتك.	<input type="checkbox"/>	<input type="checkbox"/>
هل بادرت أو أكملت أي من الأنشطة التالية لبدء مشروعك:			
التخطيط لبدء المشروع (BUSP)			
BUSP1	أتممت إعداد خطة مناسبة لبدء المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP2	قمت بتكوين فريق عمل لبدء المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP3	قمت بالبحث عن مختلف التسهيلات والتجهيزات اللازمة للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP4	طلبت الحصول على التسهيلات والتجهيزات اللازمة للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP5	قمت بتصميم وتطوير المنتجات والخدمات التي سينتجها المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP6	قمت بإعداد بحث عن السوق	<input type="checkbox"/>	<input type="checkbox"/>
BUSP7	قمت بتخصيص معظم وقتك للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
تمويل المشروع الجديد (FINF)			
FINF1	ادخرت بعض المال للاستثمار	<input type="checkbox"/>	<input type="checkbox"/>
FINF2	استثمرت مالك الخاص في المشروع	<input type="checkbox"/>	<input type="checkbox"/>
FINF3	تقدمت بطلب للتمويل من البنك	<input type="checkbox"/>	<input type="checkbox"/>
FINF4	حصلت على التمويل اللازم من البنك	<input type="checkbox"/>	<input type="checkbox"/>
FINF5	تقدمت للحصول على تمويل لإنشاء مشروعك من الحكومة	<input type="checkbox"/>	<input type="checkbox"/>
FINF6	حصلت على التمويل الحكومي لإنشاء مشروعك	<input type="checkbox"/>	<input type="checkbox"/>
التفاعل مع بيئة الأعمال (INEE)			
INEE1	تقدمت بطلب للحصول على رخصة أو براءة اختراع أو غير ذلك	<input type="checkbox"/>	<input type="checkbox"/>
INEE2	قمت بتعيين موظف (موظفين)	<input type="checkbox"/>	<input type="checkbox"/>
INEE3	قمت بأنشطة ترويجية من أجل المبيعات	<input type="checkbox"/>	<input type="checkbox"/>
INEE4	أكملت تسجيل مشروعك في الجهة المختصة	<input type="checkbox"/>	<input type="checkbox"/>
INEE5	حصلت على أول دفعة من الإيرادات	<input type="checkbox"/>	<input type="checkbox"/>
INEE6	أصبح لديك دخل صافي من مشروعك الخاص	<input type="checkbox"/>	<input type="checkbox"/>

أشركم على تفضلكم بالإجابة،،

دور مؤسسات التعليم العالي في تعزيز تعليم ريادة الأعمال في الجامعات السعودية

Survey Questionnaire
Time 1/Pre-test (Control Group)

رقم الكود

ملاحظة: فضلاً يوزع على الطلاب/الطالبات عند بداية دراستهم مقرهم الدراسي.

فضلاً ضع (✓) في المربع أو الرقم المناسب لكل عبارة من العبارات التالية وذلك للدلالة على مدى موافقتك أو عدم موافقتكم على مضمونها.

الخصائص الديموغرافية DMGR:

الخصائص الديموغرافية				
عاطل/عاطلة عن العمل (ربة منزل)	عمل حر خاص به / بها	موظف		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الوالد	مجال عمل الوالد (أغلب الفترات)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الأم	مجال عمل الأم (أغلب الفترات)

بيانات خاصة بالطالب

الجامعة		الجامعة/الكلية	
الجنس	<input type="checkbox"/> أنثى <input type="checkbox"/> ذكر	الجنس	<input type="checkbox"/> ذكر <input type="checkbox"/> أنثى
السن	(20) أقل من <input type="checkbox"/> (25) سنة فأكثر <input type="checkbox"/>	السن	<input type="checkbox"/> أقل من (20) سنة <input type="checkbox"/>
الكلية	<input type="checkbox"/> الهندسة <input type="checkbox"/> الهندسة الصناعية <input type="checkbox"/> الاقتصاد والإدارة <input type="checkbox"/> أخرى ----- <input type="checkbox"/>	الكلية	<input type="checkbox"/> الهندسة <input type="checkbox"/> الهندسة الصناعية <input type="checkbox"/> الاقتصاد والإدارة <input type="checkbox"/> أخرى ----- <input type="checkbox"/>
الشهادة	<input type="checkbox"/> ماجستير	مستوى الدراسة	<input type="checkbox"/> بكالوريوس
المقرر الدراسي	<input type="checkbox"/> أخرى ----- <input type="checkbox"/>	اسم المقرر	مقرر ريادة الأعمال وتطوير المنشآت الصغيرة <input type="checkbox"/>
تسجيل المقرر	<input type="checkbox"/> إجباري	طبيعة المقرر	<input type="checkbox"/> اختياري
التدريب	<input type="checkbox"/> نعم <input type="checkbox"/> لا	حصلت على برنامج تدريبي لريادة الأعمال بالجامعة	

السؤال الأول:

يهدف السؤال إلى التعرف على اتجاهاتك نحو الأسباب والدوافع التي قد تشجعك قبل بداية دراسة المقرر إما للعمل بوظيفة بالقطاع الحكومي والخاص أو بدء عملك الحر والتفرغ للعمل به.

أ						الوزن	من الأسباب التي تشجعك على العمل كموظف في القطاع الحكومي (OEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق			
5	4	3	2	1			
الأمن والاستقرار الوظيفي (SECU)							
5	4	3	2	1		الأمن الوظيفي	SECU1
5	4	3	2	1		الاستقرار الوظيفي	SECU2
عبء العمل (WOLO)							
5	4	3	2	1		العمل اليومي لساعات أقل	WOLO1
5	4	3	2	1		إتاحة الفرصة لوقت فراغ أطول	WOLO2
5	4	3	2	1		برنامج وساعات عمل محددة	WOLO3
5	4	3	2	1		محدودية ضغوط العمل	WOLO4
5	4	3	2	1		سهولة العمل وخلوه من التعقيد	WOLO5
البيئة الاجتماعية (SOEN)							
5	4	3	2	1		التمتع بحياة اجتماعية متوازنة	SOEN1
5	4	3	2	1		أصبح نشاطاً اجتماعياً	SOEN2
المسؤولية عن العمل (AVRE)							
5	4	3	2	1		تحمل المسؤولية الخاصة بالوظيفة فقط	AVRE1
5	4	3	2	1		تجنب تحمل عبء المسؤولية الرئيسية عن المؤسسة كما هو بالعمل الحر	AVRE2
5	4	3	2	1		محدودية حجم عبء الالتزام بالوظيفة	AVRE3
المسار الوظيفي (CARE)							
5	4	3	2	1		وجود فرصة تطور المسار الوظيفي	CARE1
5	4	3	2	1		وجود فرص للترقية	CARE2
ب						الوزن	من الأسباب التي تشجعك على بدء عملك الحر الخاص بك والتفرغ للعمل به (SEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق			
5	4	3	2	1			
الفرص الاقتصادية (ECOP)							
5	4	3	2	1		توفر الفرص الاقتصادية المربحة	ECOP1
5	4	3	2	1		الحصول على مقابل مجزي نتيجة العمل الحر الخاص بي	ECOP2
5	4	3	2	1		الحصول على حصة أكبر من مردودات ونواتج العمل الحر الخاص بي	ECOP3
روح المبادرة والتحدى (CHAL)							
5	4	3	2	1		ليحقق روح التحدى والمبادرة	CHAL1
5	4	3	2	1		ليوفر درجة كبيرة من الحماس والنشاط	CHAL2
5	4	3	2	1		يرتبط بالدوافع الذاتية والمصلحة الشخصية	CHAL3
5	4	3	2	1		يستثير مزيد من الحوافز للعمل الحر الخاص بي	CHAL4
الاستقلالية (AUTO)							
5	4	3	2	1		التمتع بحرية أكبر في العمل	AUTO1
5	4	3	2	1		ممارسة الاستقلالية في العمل	AUTO2

5	4	3	2	1	التمكن من أكون رئيساً وصاحب العمل	AUTO3
5	4	3	2	1	التمتع بحرية تحديد مهام العمل	AUTO4
السلطة (AUTH)						
5	4	3	2	1	امتلاك القوة اللازمة لاتخاذ القرارات	AUTH1
5	4	3	2	1	التمتع بالسلطة	AUTH2
تحقيق الذات (SERE)						
5	4	3	2	1	إزدياد فرص تحقيق الذات	SERE1
5	4	3	2	1	أداة لتحقيق الحلم الشخصي في العمل	SERE2
5	4	3	2	1	إتاحة الفرصة للمبادرة بعمل منتج جديد	SERE3
5	4	3	2	1	يوفر مجال لتطبيق الأفكار الإبداعية	SERE4
المشاركة في كافة مراحل العمل (PAPR)						
5	4	3	2	1	المشاركة في بدء وتنفيذ جميع مراحل العمل	PAPR1
5	4	3	2	1	متابعة تنفيذ مهام العمل من (الألف إلى الياء)	PAPR2
موافق تماماً	موافق	إيجابي	محايد	غير موافق	على الإطلاق	ت الى اي مدى تهتم بتفكير عائلتك المقربين، اصدقائك، أو الناس عندما تقرر اختيار عملك الحر (SUNO)
5	4	3	2	1	الوزن	
المعايير الشخصية (SUNO)						
5	4	3	2	1	تعتقد أسرتي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO1
5	4	3	2	1	أهتم برأي أسرتي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO2
5	4	3	2	1	يعتقد أقرب أصدقائي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO3
5	4	3	2	1	أهتم برأي أقرب أصدقائي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO4
5	4	3	2	1	يعتقد الأشخاص ذوي الأهمية لي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO5
5	4	3	2	1	أهتم برأي الأشخاص ذوي الأهمية لي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO6
(ث) هدف اختيار الوضع الوظيفي (OSCI)						
5	4	3	2	1	أفضل بشدة إدارة عملي الخاص بدلاً من العمل لحساب آخرين	OSCI1
5	4	3	2	1	على الأرجح أنني سأبادر بإنشاء عمل حر خاص بي	OSCI2
5	4	3	2	1	على الأرجح أنني سأعمل كموظف في القطاع الحكومي أو الخاص	OSCI3
(ج) التحكم في السلوك (PEBC)						
5	4	3	2	1	بالنسبة لي يعتبر إنشاء عمل خاص بي سهل جداً	PEBC1
5	4	3	2	1	يمكنني إنشاء عمل حر خاص بي بسهولة إذا رغبت في ذلك	PEBC2
5	4	3	2	1	في حال إنشاء عمل حر خاص بي فإنه يمكنني تحمل أعباء ذلك	PEBC3
متعدد	متعدد	إيجابي	محايد	غير موافق	على الإطلاق	التعبير
5	4	3	2	1	الوزن	
5	4	3	2	1	عدد العوامل خارج نطاق سيطرتي والتي يمكن أن تمنعني من إنشاء عمل حر خاص بي	PEBC4
متعدد	متعدد	إيجابي	محايد	غير موافق	على الإطلاق	التعبير
5	4	3	2	1	الوزن	
5	4	3	2	1	فرص النجاح في حال إنشاء عمل حر خاص بي	PEBC5
5	4	3	2	1	فرص الفشل في حال إنشاء عمل حر خاص بي	PEBC6

أشركم على تفضلكم بالإجابة،،

دور مؤسسات التعليم العالي في تعزيز تعليم ريادة الأعمال في الجامعات السعودية

Survey Questionnaire
Time 2/Post-test (Control Group)

رقم الكود

ملاحظة: فضلاً يوزع على الطلاب/الطالبات عند نهاية الدراسة بمقرراتهم الدراسية.
فضلاً ضع (✓) في المربع أو الرقم المناسب لكل عبارة من العبارات التالية وذلك للدلالة على مدى موافقتك أو عدم موافقتك على مضمونها.
الخصائص الديموغرافية **DMGR**:

الخصائص الديموغرافية				
عاطل/عاطلة عن العمل (ربة منزل)	عمل حر خاص به / بها	موظف	الوالد	مجال عمل الوالد (أغلب الفترات)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		مجال عمل الأم (أغلب الفترات)

بيانات خاصة بالطالب

الجامعة		الجامعة/الكلية	الجنس	الجنس
<input type="checkbox"/>	أنثى	<input type="checkbox"/>	نكر	السن
<input type="checkbox"/>	(25) سنة فأكثر	<input type="checkbox"/>	أقل من (20) سنة	السن
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	الهندسة	الكلية
<input type="checkbox"/>	الاقتصاد والإدارة	<input type="checkbox"/>	الهندسة الصناعية	الكلية
<input type="checkbox"/>	اقتصاد منزلي	<input type="checkbox"/>	بكالوريوس	الشهادة
<input type="checkbox"/>	ماجستير	<input type="checkbox"/>	مقرر ريادة الأعمال وتطوير المنشآت الصغيرة	المقرر الدراسي
<input type="checkbox"/>	أخرى -----	<input type="checkbox"/>	اختياري	تسجيل المقرر
<input type="checkbox"/>	إجباري	<input type="checkbox"/>	اختياري	تسجيل المقرر
<input type="checkbox"/>	نعم	<input type="checkbox"/>	لا	التدريب
<input type="checkbox"/>	حصلت على برنامج تدريبي لريادة الأعمال بالجامعة	<input type="checkbox"/>	لا	التدريب

السؤال الأول:

يهدف السؤال إلى التعرف على اتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة مقرراتهم الدراسية إما بوظيفة بالقطاع الحكومي والخاص أو بدء عملك الحر والتفرغ للعمل به.

أ						الوزن	من الأسباب التي تشجعك على العمل كموظف في القطاع الحكومي (OEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1			
الأمن والاستقرار الوظيفي (SECU)							
5	4	3	2	1		الأمن الوظيفي	SECU1
5	4	3	2	1		الاستقرار الوظيفي	SECU2
عبء العمل (WOLO)							
5	4	3	2	1		العمل اليومي لساعات أقل	WOLO1
5	4	3	2	1		إتاحة الفرصة لوقت فراغ أطول	WOLO2
5	4	3	2	1		برنامج وساعات عمل محددة	WOLO3
5	4	3	2	1		محدودية ضغوط العمل	WOLO4
5	4	3	2	1		سهولة العمل وخلوه من التعقيد	WOLO5
البيئة الاجتماعية (SOEN)							
5	4	3	2	1		التمتع بحياة اجتماعية متوازنة	SOEN1
5	4	3	2	1		أصبح نشاطاً اجتماعياً	SOEN2
المسؤولية عن العمل (AVRE)							
5	4	3	2	1		تحمل المسؤولية الخاصة بالوظيفة فقط	AVRE1
5	4	3	2	1		تجنب تحمل عبء المسؤولية الرئيسية عن المؤسسة كما هو بالعمل الحر	AVRE2
5	4	3	2	1		محدودية حجم عبء الالتزام بالوظيفة	AVRE3
المسار الوظيفي (CARE)							
5	4	3	2	1		وجود فرصة تطور المسار الوظيفي	CARE1
5	4	3	2	1		وجود فرص للترقية	CARE2
ب						الوزن	من الأسباب التي تشجعك على بدء عملك الحر الخاص بك والتفرغ للعمل به (SEMP)
موافق تماماً	موافق	محايد	غير موافق	غير موافق على الإطلاق	1		
5	4	3	2	1			
الفرص الاقتصادية (ECOP)							
5	4	3	2	1		توفر الفرص الاقتصادية المربحة	ECOP1
5	4	3	2	1		الحصول على مقابل مجزي نتيجة العمل الحر الخاص بي	ECOP2
5	4	3	2	1		الحصول على حصة أكبر من مردودات ونواتج العمل الحر الخاص بي	ECOP3
روح المبادرة والتحدي (CHAL)							
5	4	3	2	1		ليحقق روح التحدي والمبادرة	CHAL1
5	4	3	2	1		ليوفر درجة كبيرة من الحماس والنشاط	CHAL2
5	4	3	2	1		يرتبط بالدوافع الذاتية والمصلحة الشخصية	CHAL3
5	4	3	2	1		يستثير مزيد من الحوافز للعمل الحر الخاص بي	CHAL4
الاستقلالية (AUTO)							

5	4	3	2	1	التمتع بحرية أكبر في العمل	AUTO1
5	4	3	2	1	ممارسة الاستقلالية في العمل	AUTO2
5	4	3	2	1	التمكن من أكون رئيساً وصاحب العمل	AUTO3
5	4	3	2	1	التمتع بحرية تحديد مهام العمل	AUTO4
السلطة (AUTH)						
5	4	3	2	1	امتلاك القوة اللازمة لاتخاذ القرارات	AUTH1
5	4	3	2	1	التمتع بالسلطة	AUTH2
تحقيق الذات (SERE)						
5	4	3	2	1	إزدياد فرص تحقيق الذات	SERE1
5	4	3	2	1	أداة لتحقيق الحلم الشخصي في العمل	SERE2
5	4	3	2	1	إتاحة الفرصة للمبادرة بعمل منتج جديد	SERE3
5	4	3	2	1	يوفر مجال لتطبيق الأفكار الإبداعية	SERE4
المشاركة في كافة مراحل العمل (PAPR)						
5	4	3	2	1	المشاركة في بدء وتنفيذ جميع مراحل العمل	PAPR1
5	4	3	2	1	متابعة تنفيذ مهام العمل من (الألف إلى الياء)	PAPR2
موافق تماماً	موافق	محايد	غير موافق	على الإطلاق	الى اي مدى تهتم بتفكير عائلتك المقربين، اصدقائك، أو الناس عندما تقرر اختيار عملك الحر	ت (SUNO)
5	4	3	2	1	الوزن	
المعايير الشخصية (SUNO)						
5	4	3	2	1	تعتقد أسرتي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO1
5	4	3	2	1	أهتم برأي أسرتي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO2
5	4	3	2	1	يعتقد أقرب أصدقائي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO3
5	4	3	2	1	أهتم برأي أقرب أصدقائي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO4
5	4	3	2	1	يعتقد الأشخاص ذوي الأهمية لي في وجوب المبادرة بإنشاء عمل حر خاص بي	SUNO5
5	4	3	2	1	أهتم برأي الأشخاص ذوي الأهمية لي تجاه ما أقرره بإنشاء عمل حر خاص بي من عدمه	SUNO6
(ث) هدف اختيار الوضع الوظيفي (OSCI)						
5	4	3	2	1	أفضل بشدة إدارة عملي الخاص بدلاً من العمل لحساب آخرين	OSCI1
5	4	3	2	1	على الأرجح أنني سأبادر بإنشاء عمل حر خاص بي	OSCI2
5	4	3	2	1	على الأرجح أنني سأعمل كموظف في القطاع الحكومي أو الخاص	OSCI3
(ج) التحكم في السلوك (PEBC)						
5	4	3	2	1	بالنسبة لي يعتبر إنشاء عمل خاص بي سهل جداً	PEBC1
5	4	3	2	1	يمكنني إنشاء عمل حر خاص بي بسهولة إذا رغبت في ذلك	PEBC2
5	4	3	2	1	في حال إنشاء عمل حر خاص بي فإنه يمكنني تحمّل أعباء ذلك	PEBC3
متعدد	متعدد	محايد	منخفض	منخفض	التعبير	الوزن
5	4	3	2	1		
5	4	3	2	1	عدد العوامل خارج نطاق سيطرتي والتي يمكن أن تمنعني من إنشاء عمل حر خاص بي	PEBC4
منخفض	منخفض	محايد	مرتفع	مرتفع	التعبير	

5	4	3	2	1	الوزن	
5	4	3	2	1		فرص النجاح في حال إنشاء عمل حر خاص بي
5	4	3	2	1		فرص الفشل في حال إنشاء عمل حر خاص بي

السؤال الثاني: التعلّم من مقرراتهم الدراسية (LEMO) يهدف السؤال إلى التعرف على مدى استفادتك من مقرر زيادة في زيادة فهمك لاتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة المقرر لتحديد مستقبلك الوظيفي.

تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	الوزن	مدى استفادتك من مقرر زيادة الأعمال في زيادة العوامل التالية. (LEMO)	أ
5	4	3	2	1		إلى أي مدى اسهم مقررك الدراسي في زيادة فهمك لاتجاهاتك وقيم ودوافع رواد الأعمال (مثال: لماذا يعمل رواد الأعمال؟)	LEMO1
5	4	3	2	1		إلى أي مدى اسهم مقررك الدراسي في زيادة فهمك لكافة الأعمال والإجراءات التي يجب أن يقوم بها أي شخص لبدء مشروعه الخاص (مثال: ماذا يجب القيام به لإنشاء المشروع الخاص؟)	LEMO2
5	4	3	2	1		إلى أي مدى ساعدك مقررك الدراسي في تنمية وزيادة مهاراتك الإدارية عملياً من أجل بدء مشروع خاص (مثال: كيف يمكن البدء في إنشاء مشروع خاص؟)	LEMO3
5	4	3	2	1		إلى أي مدى ساعدك مقررك الدراسي في تنمية وزيادة قدرتك على تطوير علاقات في بيئة الأعمال (مثال: من يجب التعرف عليهم عند إنشاء وتشغيل المشروع الخاص؟)	LEMO4
5	4	3	2	1		إلى أي مدى ساعدك مقررك الدراسي في تنمية وزيادة قدرتك على تحديد الفرص الاستثمارية المتاحة الخاصة (مثال: متى يجب أن تصرّف لاغتنام الفرص؟)	LEMO5
تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	الوزن	التأثير والإلهام (INSP)	ب
5	4	3	2	1		هل تتذكر حدث معين أو موقف أدى إلى التأثير فيك أو إلهامك وذلك أثناء دراستك مقررك الدراسي بحيث أدى إلى تغيير جذري في مشاعرك وتفكيرك نحو جدية النظر في أن تصبح من رواد الأعمال؟	INSP1
5	4	3	2	1		إلى أي مدى أثرت فيك المواقف أو الفعاليات أثناء دراستك مقررك الدراسي لتفكر بجدية في إنشاء مشروعك الحر الخاص؟	INSP2

لسؤال الثالث:

يهدف السؤال إلى التعرف على مدى استفادتك من الإمكانات والموارد المتاحة والحاضنات بالجامعة أثناء دراسة مقررك الدراسي في زيادة فهمك لاتجاهاتك نحو الأسباب والدوافع التي قد تشجعك بعد الانتهاء من دراسة المقرر لتحديد مستقبلك الوظيفي (UPRI).

تحققت استفادة كبيرة	تحققت استفادة	محايد	محدودة الاستفادة	لا تتحقق أي استفادة	الوزن	الاستفادة من الإمكانات والموارد المتاحة والحاضنات بالجامعة أثناء دراستك مقررك الدراسي (UPRI)	أ
5	4	3	2	1		مجموعة من زملاء الدراسة من ذوي العقول ذات الميل نحو ريادة الأعمال لتكوين فريق عمل في هذا المجال	UPRI1
5	4	3	2	1		التقنيات المتاحة بالجامعة	UPRI2
5	4	3	2	1		التوجيه والنصح من أعضاء هيئة التدريس أو الخبراء في مجال	UPRI3

تحقق استفاضة كبيرة	تحقق استفاضة	محايد	الاستفاضة محدودة	أي استفاضة لا تحقق	الوزن	الاستفاضة من الإمكانيات والموارد المتاحة والحاضنات بالجامعة أثناء دراستك مقررک الدراسي (UPRI)	(١)
						الحاضنات والتأثر بهم	
	5	4	3	2	1	النصح والإرشاد من زملاء الدراسة	UPRI4
	5	4	3	2	1	التوجيه والنصح من خبراء التقنية بالجامعة	UPRI5
	5	4	3	2	1	الإمكانيات البحثية بالجامعة (المكتبة/الإنترنت)	UPRI6
	5	4	3	2	1	بناء العلاقات خلال الفعاليات والمناسبات والمؤتمرات المختلفة	UPRI7
	5	4	3	2	1	توفر التسهيلات والقاعات الخاصة بعقد الاجتماعات	UPRI8
	5	4	3	2	1	لقاءات المناقشة بين الطلاب لعرض أفكار وأطر مشروعاتهم لريادة الأعمال (فرصة لاختبار فكرة مشروعك الصغير)	UPRI9
	5	4	3	2	1	الدعم المالي من الجامعة لبدء مشروعك	UPRI10
	5	4	3	2	1	إمكانية تقديمك وتزكيتك لمستثمرين للاستثمار في فكرة مشروعك الصغير	UPRI11

السؤال الرابع:

يهدف السؤال إلى التعرف على مدى امكانيتك في الشروع لأنشاء مشروعك الصغير بعد الانتهاء من دراستك مقررک الدراسي

م	بداية مشروعك (STBU)	نعم	لا
STBU1	هل تقوم حاليا بدراسة فكرة جديدة لمشروع ما؟	<input type="checkbox"/>	<input type="checkbox"/>
STBU2	هل تحاول بدء مشروعاً حقيقياً بك؟ سواءً أكانت الفكرة فكرتك أو في إطار تدريب بكاليتك.	<input type="checkbox"/>	<input type="checkbox"/>
هل بادرت أو أكملت أي من الأنشطة التالية لبدء مشروعك:			
التخطيط لبدء المشروع (BUSP)			
BUSP1	أتممت إعداد خطة مناسبة لبدء المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP2	قمت بتكوين فريق عمل لبدء المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP3	قمت بالبحث عن مختلف التسهيلات والتجهيزات اللازمة للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP4	طلبت الحصول على التسهيلات والتجهيزات اللازمة للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP5	قمت بتصميم وتطوير المنتجات والخدمات التي سينتجها المشروع	<input type="checkbox"/>	<input type="checkbox"/>
BUSP6	قمت بإعداد بحث عن السوق	<input type="checkbox"/>	<input type="checkbox"/>
BUSP7	قمت بتخصيص معظم وقتك للمشروع	<input type="checkbox"/>	<input type="checkbox"/>
تمويل المشروع الجديد (FINF)			
FINF1	ادخرت بعض المال لاستثماره	<input type="checkbox"/>	<input type="checkbox"/>
FINF2	استثمرت مالك الخاص في المشروع	<input type="checkbox"/>	<input type="checkbox"/>
FINF3	تقدمت بطلب للتمويل من البنك	<input type="checkbox"/>	<input type="checkbox"/>
FINF4	حصلت على التمويل اللازم من البنك	<input type="checkbox"/>	<input type="checkbox"/>
FINF5	تقدمت للحصول على تمويل لإنشاء مشروعك من الحكومة	<input type="checkbox"/>	<input type="checkbox"/>
FINF6	حصلت على التمويل الحكومي لإنشاء مشروعك	<input type="checkbox"/>	<input type="checkbox"/>
التفاعل مع بيئة الأعمال (INEE)			
INEE1	تقدمت بطلب للحصول على رخصة أو براءة اختراع أو غير ذلك	<input type="checkbox"/>	<input type="checkbox"/>
INEE2	قمت بتعيين موظف (موظفين)	<input type="checkbox"/>	<input type="checkbox"/>
INEE3	قمت بانشطة ترويجية من أجل المبيعات	<input type="checkbox"/>	<input type="checkbox"/>
INEE4	أكملت تسجيل مشروعك في الجهة المختصة	<input type="checkbox"/>	<input type="checkbox"/>
INEE5	حصلت على أول دفعة من الإيرادات	<input type="checkbox"/>	<input type="checkbox"/>
INEE6	أصبح لديك دخل صافي من مشروعك الخاص	<input type="checkbox"/>	<input type="checkbox"/>

أشركم على تفضلكم بالإجابة،،

Appendix 2

Survey Questionnaire Coding and labelling

Q. No.	Question Code	Question Label
1	FATHER	Father's occupation
2	MOTHER	Mother's occupation
3	INSTITUTIONS	University/College
4	SEX	Sex
5	AGE	Age
6	COLLEGE	College
7	QUALIFICATIONS	Level of Education
8	COURSE TYPE	Course Type
9	COURSSELCTION	Course selection
10	TRAINING	Entrepreneurship Training
11	SECU1	Job security.
12	SECU2	Job stability.
13	WOLO1	Few daily work hours.
14	WOLO2	To have more spare time.
15	WOLO3	Fixed working hours.
16	WOLO4	Limited pressures of work.
17	WOLO5	Ease at work and free from complexity.
18	SOEN1	Social moderate environment
19	SOEN2	To become socially active
20	AVRE1	To take responsibility of the job only.
21	AVRE2	To avoid being the main responsible person.
22	AVRE3	To avoid more commitment but to be confined to the post holding.
23	CARE1	Opportunity for a career development
24	CARE2	Opportunity for promotion in the job.
25	ECOP1	Existence of economic opportunity
26	ECOP2	Getting something rewarding as a result of self-employment
27	ECOP3	Obtain a greater share of the rewards and outcomes of self-employment
28	CHAL1	Achieve the spirit of challenge and initiative
29	CHAL2	Provide a great degree of enthusiasm and activity
30	CHAL3	Associate with self-motivation and self-interest
31	CHAL4	Provoke more incentives to work, in my own business

Appendix 2

32	AUTO1	Enjoy greater freedom of work
33	AUTO2	Exercise autonomy in work
34	AUTO3	To be able to be chief employer for my own concern
35	AUTO4	Enjoy the freedom to determine work assignments
36	AUTH1	Possess the power to make decisions
37	AUTH2	Enjoyment of power
38	SERE1	Increase of self-actualization opportunities
39	SERE2	Perform to achieve personal dream work
40	SERE3	Provide opportunity for initiating productive work
41	SERE4	To spare area for the application of creative ideas
42	PAPR1	Participation in launching and implementing all phases of work
43	PAPR2	Follow-up the implementation of work assignments from A to Z
44	SUNO1	My closed family thinks that I should pursue a career as self-employment
45	SUNO2	I care about the opinion of my family when I decide whether or not to pursue a career as self-employed
46	SUNO3	My closest friends think that I should pursue a career as self-employment
47	SUNO4	I care what my closest friends think when I decide whether or not to pursue a career as self-employed
48	SUNO5	People who are important to me think that I should pursue a career as self-employment
49	SUNO6	I care what people who are important to me think when I decide whether or not to pursue a career as self-employed
50	OSCI1	I much prefer to run my own business rather than be employed by someone else
51	OSCI2	It is very likely that I will pursue a career as self-employed
52	OSCI3	It is very likely that I will pursue a career as an employee in an organisation
53	PEBC1	For me, being self-employed would be very easy
54	PEBC2	If I wanted to, I could easily pursue a career as self-employed
55	PEBC3	In case of being self-employed, I have complete control over the situation
56	PEBC4	The number of events outside my control, which could prevent me being self-employed are
57	PEBC5	If I become self-employed, the chances of success would be
58	PEBC6	If I pursue a career as self-employed, the chances of failure would be
59	LEMO1	Your understanding of the attitudes, values and motivation of entrepreneurs (i.e. why do entrepreneurs act?)
60	LEMO2	Your understanding of the actions someone has to take in order to start a business (i.e. what needs to be done?)
61	LEMO3	Your practical management skills in order to start a business (i.e. how do I start the venture?)
62	LEMO4	Your ability to develop networks of relations (i.e. who do I need to know?)
63	LEMO5	Your ability to identify an opportunity (i.e. when do I need to act to capture opportunities?)

Appendix 2

64	INSP1	Do you remember any particular event or input during your Entrepreneurship course that caused a dramatic change in your heart and thinking to consider becoming an entrepreneur?
65	INSP2	Do you remember any particular event or input during your study Entrepreneurship course that made you to consider embarking on an entrepreneurial career?
66	UPRI1	A pool of entrepreneurial-minded classmates for building a team minimal utilisation
67	UPRI2	A pool of university technology
68	UPRI3	Advice from faculty and experts in the area of incubators
69	UPRI4	Advice from classmates
70	UPRI5	Advice from tech-transfer officers
71	UPRI6	Research resources (library / web)
72	UPRI7	Networking events and building relationships
73	UPRI8	Physical space for meetings
74	UPRI9	Business plan competitions (testing ground for the idea)
75	UPRI10	Seek funding from university
76	UPRI11	Referrals to investors
77	STBU1	Are you involved in evaluating a new business idea?
78	STBU2	Are you trying to start a business for real, as opposed to just evaluating an idea out of interest or as part of an academic exercise?
79	BUSP1	You prepared a proper business plan
80	BUSP2	Organized a start-up team
81	BUSP3	Looked for facilities and equipments
82	BUSP4	Acquired facilities and equipments
83	BUSP5	Developed products/service
84	BUSP6	Conducted market research
85	BUSP7	Devoted most of your time to the business
86	FINF1	Saved money to invest
87	FINF2	Invested own money
88	FINF3	Applied for bank funding
89	FINF4	Received bank funding
90	FINF5	Applied for government funding
91	FINF6	Received government funding
92	INEE1	Applied for license, patents etc.
93	INEE2	Hired employees.
94	INEE3	Done sales promotion activities.
95	INEE4	Done business registration.
96	INEE5	Received first revenues.
97	INEE6	Net income is positive.

Survey Questionnaire Coding and labelling

Q. No.	Variable Code	Variable Name	Question Numbers
1	Demography Characteristics	Demography	1-10
2	SECU	Security	11-12
3	WOLO	Work load	13-17
4	SOEN	Social Environment	18-19
5	AVRE	Avoid Responsibility	20-22
6	CARE	Career	23-24
7	ECOP	Economic opportunity	25-27
8	CHAL	Challenge	28-31
9	AUTO	Autonomy	32-35
10	AUTH	Authority	36-37
11	SERE	Self-Realisation	38-41
12	PAPR	Participate in the whole process	42-43
13	SUNO	Subjective Norms	44-49
14	OSCI	Occupational Status Choice Intention	50-52
15	PEBC	Perceived Behaviour Control	53-58
16	LEMO	Learning From Entrepreneurship Module	59-63
17	INSP	Inspiration	64-65
18	UPRI	University Incubation Resources	66-76
19	STBU	Start A new Business	77-78
20	BUSP	Business Planning	79-85
21	FINF	Financing New Firm	86-91
22	INEE	Interaction With External Environment	92-97

Appendix 3

Pre-test (EEPs Group): Missing Value by Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes(a)	
				High	Count	Percent	Low
SECU1	508	4.10	.958	8	1.6	40	0
SECU2	508	4.12	.925	8	1.6	28	0
WOLO1	511	3.36	1.063	5	1.0	22	0
WOLO2	511	3.25	1.091	5	1.0	0	0
WOLO3	512	3.88	1.008	4	.8	0	0
WOLO4	509	3.45	1.057	7	1.4	24	0
WOLO5	511	3.37	1.222	5	1.0	45	0
SOEN1	513	3.87	1.136	3	.6	0	0
SOEN2	510	3.76	1.097	6	1.2	0	0
AVRE1	510	3.51	1.128	6	1.2	28	0
AVRE2	506	3.37	1.138	10	1.9	26	0
AVRE3	508	3.40	1.067	8	1.6	29	0
CARE1	506	3.92	1.221	10	1.9	0	0
CARE2	507	3.95	1.193	9	1.7	0	0
ECOP1	507	3.93	1.084	9	1.7	0	0
ECOP2	509	4.00	.995	7	1.4	45	0
ECOP3	509	4.05	1.011	7	1.4	42	0
CHAL1	509	3.98	.982	7	1.4	47	0
CHAL2	512	4.08	.933	4	.8	37	0
CHAL3	513	4.04	.932	3	.6	35	0
CHAL4	512	4.00	.945	4	.8	39	0
AUTO1	510	4.21	.979	6	1.2	39	0
AUTO2	506	4.19	.960	10	1.9	41	0
AUTO3	506	4.14	1.021	10	1.9	42	0
AUTO4	507	4.00	1.022	9	1.7	0	0
AUTH1	507	3.87	1.085	9	1.7	0	0
AUTH2	510	3.64	1.102	6	1.2	0	0
SERE1	511	4.07	1.068	5	1.0	49	0
SERE2	513	4.19	.991	3	.6	39	0
SERE3	511	3.92	1.058	5	1.0	0	0
SERE4	509	4.08	1.069	7	1.4	49	0
PAPR1	509	3.93	.930	7	1.4	0	0
PAPR2	511	3.95	1.010	5	1.0	0	0
SUNO1	510	3.25	1.142	6	1.2	0	0
SUNO2	508	3.81	1.057	8	1.6	0	0
SUNO3	507	3.50	1.100	9	1.7	26	0
SUNO4	507	3.55	1.087	9	1.7	26	0
SUNO5	507	3.49	1.069	9	1.7	23	0
SUNO6	508	3.75	1.047	8	1.6	21	0
PEBC1	507	2.65	1.092	9	1.7	0	30
PEBC2	505	2.86	1.136	11	2.1	0	0

PEBC3	505	3.53	1.078	11	2.1	31	0
PEBC4	503	2.16	1.173	13	2.5	0	0
PEBC5	504	2.27	1.202	12	2.3	0	0
PEBC6	505	2.07	1.316	11	2.1	0	96
OSCI1	510	3.72	1.229	6	1.2	0	0
OSCI2	507	3.59	1.152	9	1.7	0	0
OSCI3	507	3.39	1.115	9	1.7	38	0

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR)

Pre-test (Control Group): Missing Value By Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes(a)	
				High	Count	Percent	Low
SECU1	193	3.77	1.246	3	1.5	0	0
SECU2	193	3.93	1.184	3	1.5	0	0
WOLO1	194	3.44	1.142	2	1.0	15	0
WOLO2	190	3.42	1.160	6	3.1	13	0
WOLO3	192	3.87	1.012	4	2.0	0	0
WOLO4	193	3.60	1.128	3	1.5	10	0
WOLO5	190	3.65	1.189	6	3.1	0	0
SOEN1	193	3.77	1.159	3	1.5	0	0
SOEN2	193	3.76	1.139	3	1.5	0	0
AVRE1	194	3.35	1.147	2	1.0	21	0
AVRE2	195	3.19	1.201	1	.5	0	0
AVRE3	195	3.32	1.131	1	.5	19	0
CARE1	191	3.77	1.234	5	2.6	0	0
CARE2	190	3.93	1.209	6	3.1	0	0
ECOP1	192	4.03	1.053	4	2.0	15	0
ECOP2	194	4.00	1.008	2	1.0	19	0
ECOP3	194	4.07	1.125	2	1.0	0	0
CHAL1	195	3.71	1.157	1	.5	0	0
CHAL2	192	3.86	.958	4	2.0	0	0
CHAL3	192	3.92	1.038	4	2.0	0	0
CHAL4	192	3.82	1.045	4	2.0	0	0
AUTO1	193	4.10	1.068	3	1.5	0	0
AUTO2	194	3.98	1.089	2	1.0	0	0
AUTO3	194	3.95	1.128	2	1.0	0	0
AUTO4	193	3.85	1.046	3	1.5	0	0
AUTH1	193	3.55	1.361	3	1.5	0	0
AUTH2	194	3.47	1.260	2	1.0	19	0
SERE1	194	4.12	.984	2	1.0	15	0
SERE2	194	4.21	.970	2	1.0	15	0
SERE3	194	4.04	1.012	2	1.0	0	0

SERE4	194	4.19	.990	2	1.0	13	0
PAPR1	196	3.77	1.051	0	.0	0	0
PAPR2	193	3.81	1.064	3	1.5	0	0
SUNO1	192	3.32	1.152	4	2.0	12	0
SUNO2	191	3.62	1.078	5	2.6	9	0
SUNO3	194	3.42	1.090	2	1.0	12	0
SUNO4	194	3.46	1.054	2	1.0	9	0
SUNO5	194	3.40	1.116	2	1.0	11	0
SUNO6	191	3.57	1.088	5	2.6	10	0
PEBC1	193	2.63	1.058	3	1.5	0	8
PEBC2	191	2.90	1.088	5	2.6	0	0
PEBC3	191	3.54	1.035	5	2.6	8	0
PEBC4	191	2.04	1.055	5	2.6	0	0
PEBC5	192	2.26	1.137	4	2.0	0	11
PEBC6	191	2.14	1.360	5	2.6	0	0
OSCI1	192	2.86	1.405	4	2.0	0	0
OSCI2	193	3.05	1.255	3	1.5	0	0
OSCI3	192	2.92	1.249	4	2.0	0	0

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Post-test (EEPs Group): Missing Value By Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes(a,b)	
				High	Count	Percent	Low
SECU1	521	4.02	1.087	2	.4	54	0
SECU2	518	4.03	1.016	5	1.0	51	0
WOLO1	520	3.42	1.085	3	.6	26	0
WOLO2	521	3.35	1.127	2	.4	31	0
WOLO3	520	3.79	1.011	3	.6	0	0
WOLO4	520	3.48	1.033	3	.6	14	0
WOLO5	522	3.41	1.197	1	.2	39	0
SOEN1	521	3.90	1.054	2	.4	0	0
SOEN2	520	3.83	1.041	3	.6	0	0
AVRE1	519	3.43	1.114	4	.8	29	0
AVRE2	522	3.40	1.103	1	.2	25	0
AVRE3	523	3.38	1.086	0	.0	24	0
CARE1	520	3.87	1.160	3	.6	0	0
CARE2	521	4.02	1.107	2	.4	0	0
ECOP1	521	3.92	1.084	2	.4	61	0
ECOP2	521	3.98	.989	2	.4	0	0
ECOP3	523	4.00	1.036	0	.0	0	0
CHAL1	521	4.11	.927	2	.4	28	0
CHAL2	521	4.19	.860	2	.4	25	0
CHAL3	520	4.14	.877	3	.6	22	0

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CHAL4	520	4.23	.839	3	.6	17	0
AUTO1	521	4.35	.839	2	.4	22	0
AUTO2	519	4.28	.856	4	.8	22	0
AUTO3	520	4.14	.920	3	.6	28	0
AUTO4	518	4.14	.904	5	1.0	26	0
AUTH1	521	3.87	1.126	2	.4	0	0
AUTH2	520	3.63	1.108	3	.6	21	0
SERE1	523	4.30	.870	0	.0	19	0
SERE2	520	4.37	.752	3	.6	14	0
SERE3	521	4.22	.851	2	.4	21	0
SERE4	521	4.40	.768	2	.4	12	0
PAPR1	523	3.95	1.031	0	.0	52	0
PAPR2	521	3.88	1.077	2	.4	0	0
SUNO1	520	3.47	1.053	3	.6	28	0
SUNO2	519	3.76	1.058	4	.8	28	0
SUNO3	520	3.65	1.040	3	.6	18	0
SUNO4	522	3.62	1.070	1	.2	26	0
SUNO5	521	3.56	1.060	2	.4	17	0
SUNO6	521	3.82	1.029	2	.4	0	0
PEBC1	520	2.96	1.170	3	.6	0	0
PEBC2	522	3.23	1.140	1	.2	0	0
PEBC3	523	2.40	1.196	0	.0	0	39
PEBC4	523	2.05	1.234	0	.0	0	89
PEBC5	522	2.28	1.150	1	.2	.	.
PEBC6	521	2.03	1.349	2	.4	0	95
OSCI1	520	3.80	1.192	3	.6	0	0
OSCI2	520	3.78	1.102	3	.6	0	0
OSCI3	521	3.53	1.121	2	.4	35	0
LEMO1	519	3.99	.977	4	.8	55	0
LEMO2	523	3.98	.987	0	.0	54	0
LEMO3	522	3.87	.991	1	.2	0	0
LEMO4	523	3.74	1.095	0	.0	0	0
LEMO5	522	3.75	1.074	1	.2	0	0
UPRI1	520	3.34	1.093	3	.6	39	0
UPRI2	521	2.74	1.089	2	.4	0	30
UPRI3	522	3.29	1.199	1	.2	0	0
UPRI4	522	3.15	1.146	1	.2	0	0
UPRI5	521	2.72	1.242	2	.4	0	0
UPRI6	523	3.10	1.167	0	.0	0	0
UPRI7	519	3.31	1.177	4	.8	49	0
UPRI8	521	3.16	1.136	2	.4	0	0
UPRI9	520	3.17	1.245	3	.6	0	0
UPRI10	523	2.40	1.264	0	.0	0	0
UPRI11	521	2.89	1.211	2	.4	0	0
UPRI12	523	2.65	1.299	0	.0	0	0
INSP1	523	3.34	1.263	0	.0	0	0
INSP2	519	3.64	1.177	4	.8	42	0
STBU1	523	1.38	.486	0	.0	0	0

STBU2	523	1.34	.474	0	.0	0	0
BUSP1	523	1.60	.503	0	.0	0	1
BUSP2	522	1.74	.441	1	.2	0	0
BUSP3	523	1.61	.488	0	.0	0	0
BUSP4	523	1.76	.425	0	.0	.	.
BUSP5	523	1.66	.475	0	.0	0	0
BUSP6	523	1.60	.489	0	.0	0	0
BUSP7	523	1.79	.409	0	.0	.	.
FINF1	523	1.67	.472	0	.0	0	0
FINF2	523	1.76	.430	0	.0	.	.
FINF3	523	1.89	.317	0	.0	.	.
FINF4	522	1.91	.292	1	.2	.	.
FINF5	523	1.90	.297	0	.0	.	.
FINI6	522	1.89	.307	1	.2	.	.
INEE1	522	1.91	.292	1	.2	.	.
INEE2	522	1.87	.341	1	.2	.	.
INEE3	522	1.82	.386	1	.2	.	.
INEE4	523	1.88	.321	0	.0	.	.
INEE5	523	1.88	.330	0	.0	.	.
INEE6	523	1.88	.326	0	.0	.	.

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

b . indicates that the inter-quartile range (IQR) is zero.

Post-test (Control Group): Missing Value By Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes(a,b)	
				High	Count	Percent	Low
SECU1	196	3.49	1.279	13	6.2	0	0
SECU2	194	3.63	1.224	15	7.2	0	0
WOLO1	207	3.40	1.234	2	1.0	23	0
WOLO2	195	3.39	1.163	14	6.7	17	0
WOLO3	194	3.73	1.043	15	7.2	10	0
WOLO4	196	3.69	1.048	13	6.2	8	0
WOLO5	199	3.64	1.145	10	4.8	13	0
SOEN1	197	3.75	1.137	12	5.7	0	0
SOEN2	199	3.76	1.092	10	4.8	0	0
AVRE1	202	3.45	1.167	7	3.3	21	0
AVRE2	197	3.37	1.097	12	5.7	17	0
AVRE3	202	3.44	1.046	7	3.3	15	0
CARE1	201	3.77	1.145	8	3.8	0	0
CARE2	197	3.92	1.104	12	5.7	0	0
ECOP1	202	3.92	1.162	7	3.3	0	0
ECOP2	207	4.01	1.033	2	1.0	0	0
ECOP3	208	4.03	1.148	1	.5	0	0
CHAL1	207	4.08	.905	2	1.0	11	0
CHAL2	203	4.09	.854	6	2.9	6	0

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CHAL3	202	4.08	.976	7	3.3	0	0
CHAL4	199	4.12	.874	10	4.8	8	0
AUTO1	203	3.86	1.101	6	2.9	0	0
AUTO2	207	3.95	.944	2	1.0	0	0
AUTO3	200	3.80	.992	9	4.3	0	0
AUTO4	207	3.82	1.077	2	1.0	0	0
AUTH1	206	3.97	1.093	3	1.4	0	0
AUTH2	207	3.65	1.082	2	1.0	9	0
SERE1	200	4.07	.972	9	4.3	15	0
SERE2	201	3.99	1.010	8	3.8	0	0
SERE3	203	3.98	.992	6	2.9	0	0
SERE4	199	3.97	.992	10	4.8	18	0
PAPR1	202	3.50	1.181	7	3.3	14	0
PAPR2	199	3.63	1.111	10	4.8	10	0
SUNO1	202	3.30	1.146	7	3.3	0	0
SUNO2	201	3.71	1.018	8	3.8	5	0
SUNO3	204	3.52	1.048	5	2.4	8	0
SUNO4	201	3.45	1.109	8	3.8	13	0
SUNO5	207	3.45	1.055	2	1.0	8	0
SUNO6	201	3.62	.978	8	3.8	4	0
OSCI1	199	3.71	1.221	10	4.8	0	0
OSCI2	204	3.71	1.069	5	2.4	8	0
OSCI3	201	3.50	1.040	8	3.8	13	0
PEBC1	201	2.80	1.096	8	3.8	0	0
PEBC2	202	3.12	1.091	7	3.3	0	0
PEBC3	201	3.59	.929	8	3.8	6	0
PEBC4	203	1.87	1.078	6	2.9	0	32
PEBC5	201	2.30	1.218	8	3.8	.	.
PEBC6	205	1.93	1.381	4	1.9	0	37
LEMO1	201	3.44	1.143	8	3.8	16	0
LEMO2	200	3.36	1.116	9	4.3	15	0
LEMO3	201	3.36	1.241	8	3.8	25	0
LEMO4	202	3.31	1.264	7	3.3	0	0
LEMO5	207	3.27	1.255	2	1.0	0	0
UPRI1	202	2.99	1.232	7	3.3	0	0
UPRI2	200	2.69	1.176	9	4.3	0	0
UPRI3	202	3.11	1.249	7	3.3	0	0
UPRI4	201	3.21	1.103	8	3.8	18	0
UPRI5	198	2.96	1.179	11	5.3	0	0
UPRI6	198	3.15	1.285	11	5.3	0	0
UPRI7	198	3.22	1.187	11	5.3	0	0
UPRI8	202	3.09	1.121	7	3.3	0	0
UPRI9	199	2.86	1.282	10	4.8	0	0
UPRI10	200	1.84	1.041	9	4.3	0	0
UPRI11	200	2.53	1.125	9	4.3	0	11
UPRI12	199	2.11	1.188	10	4.8	0	0
INSP1	202	3.03	1.423	7	3.3	0	0
INSP2	203	3.26	1.249	6	2.9	0	0

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STBU1	204	1.44	.498	5	2.4	0	0
STBU2	197	1.37	.484	12	5.7	0	0
BUSP1	198	1.74	.441	11	5.3	0	0
BUSP2	200	1.83	.381	9	4.3	.	.
BUSP3	197	1.63	.484	12	5.7	0	0
BUSP4	198	1.79	.410	11	5.3	.	.
BUSP5	198	1.76	.427	11	5.3	.	.
BUSP6	196	1.66	.476	13	6.2	0	0
BUSP7	201	1.81	.396	8	3.8	.	.
FINF1	199	1.68	.468	10	4.8	0	0
FINF2	198	1.78	.413	11	5.3	.	.
FINF3	200	1.87	.337	9	4.3	.	.
FINF4	203	1.88	.329	6	2.9	.	.
FINF5	202	1.90	.299	7	3.3	.	.
FINF6	204	1.89	.317	5	2.4	.	.
INEE1	205	1.83	.373	4	1.9	.	.
INEE2	203	1.88	.329	6	2.9	.	.
INEE3	202	1.81	.392	7	3.3	.	.
INEE4	203	1.90	.299	6	2.9	.	.
INEE5	203	1.86	.351	6	2.9	.	.
INEE6	201	1.86	.352	8	3.8	.	.

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

b . indicates that the inter-quartile range (IQR) is zero.

Appendix 4

Figure: Outliers for EEPs Group at Pre-test

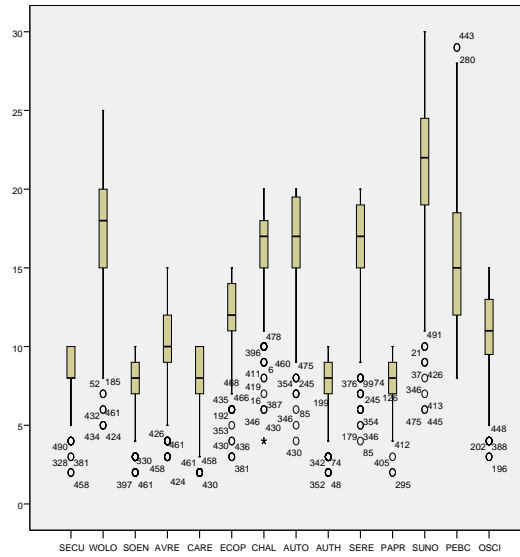


Figure: Outliers for Control Group at Pre-test

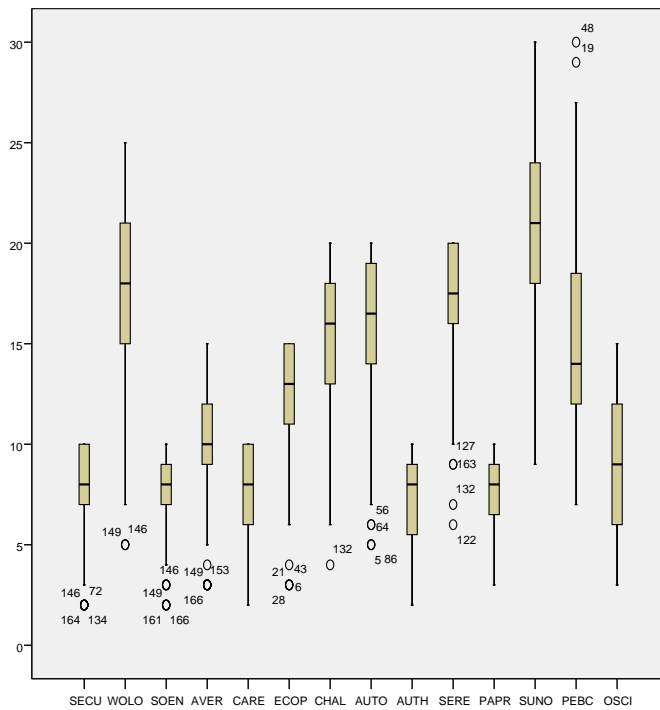


Figure: Outliers for EEPs Group at Post-test

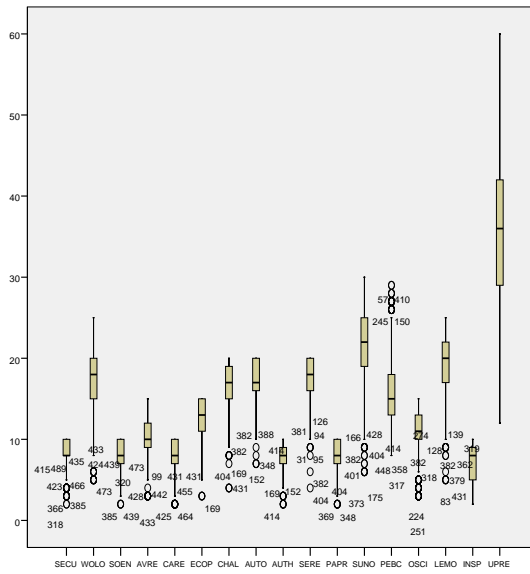
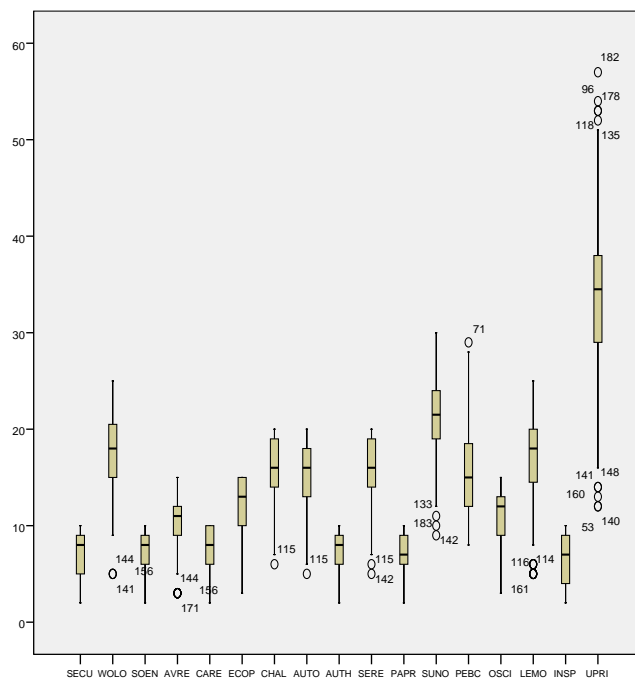


Figure: Outliers for Control Group at Post-test



Appendix 5

Table: Normality for EEPs Group at Pre-test

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
SECU	.175	491	.000	.868	491	.000
WOLO	.080	491	.000	.979	491	.000
SOEN	.190	491	.000	.890	491	.000
AVRE	.100	491	.000	.968	491	.000
CARE	.189	491	.000	.848	491	.000
ECOP	.159	491	.000	.906	491	.000
CHAL	.163	491	.000	.910	491	.000
AUTO	.145	491	.000	.886	491	.000
AUTH	.177	491	.000	.912	491	.000
SERE	.168	491	.000	.867	491	.000
PART	.175	491	.000	.912	491	.000
SUNO	.095	491	.000	.970	491	.000
PEBC	.130	491	.000	.940	491	.000
OSCI	.168	491	.000	.917	491	.000

a. Lilliefors significance correction. Note: Df = Degree of freedom, Sig. = Significance.

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunities, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control and **OSCI** = Occupational status choice intention.

Table: Normality for Control Group at Pre-test

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
SECU	.179	184	.000	.841	184	.000
WOLO	.091	184	.001	.965	184	.000
SOEN	.164	184	.000	.894	184	.000
AVER	.145	184	.000	.943	184	.000
CARE	.206	184	.000	.848	184	.000
ECOP	.179	184	.000	.851	184	.000
CHAL	.140	184	.000	.928	184	.000
AUTO	.139	184	.000	.896	184	.000
AUTH	.194	184	.000	.895	184	.000
SERE	.162	184	.000	.881	184	.000
PAPR	.206	184	.000	.903	184	.000
SUNO	.103	184	.000	.976	184	.003
PEBC	.158	184	.000	.934	184	.000
OSCI	.119	184	.000	.956	184	.000

a. Lilliefors significance correction. Note: Df = Degree of freedom, Sig. = Significance.

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunities, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control and **OSCI** = Occupational status choice intention.

Table: Normality for EEPs Group at Post-test

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
SECU	.215	491	.000	.827	491	.000
WOLO	.085	491	.000	.972	491	.000
SOEN	.193	491	.000	.887	491	.000
AVRE	.097	491	.000	.966	491	.000
CARE	.203	491	.000	.840	491	.000
ECOP	.167	491	.000	.890	491	.000
CHAL	.134	491	.000	.887	491	.000
AUTO	.148	491	.000	.894	491	.000
AUTH	.161	491	.000	.902	491	.000
SERE	.164	491	.000	.862	491	.000
PAPR	.189	491	.000	.885	491	.000
SUNO	.100	491	.000	.959	491	.000
PEBC	.137	491	.000	.938	491	.000
OSCI	.188	491	.000	.909	491	.000
LEMO	.128	491	.000	.942	491	.000
INSP	.215	491	.000	.876	491	.000
UPRE	.060	491	.000	.993	491	.020

a. Lilliefors significance correction. Note: Df = Degree of freedom, Sig. = Significance.

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

Table: Normality for Control Group at Post-test

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
SECU	.165	184	.000	.908	184	.000
WOLO	.120	184	.000	.965	184	.000
SOEN	.175	184	.000	.910	184	.000
AVRE	.157	184	.000	.922	184	.000
CARE	.160	184	.000	.889	184	.000
ECOP	.161	184	.000	.864	184	.000
CHAL	.127	184	.000	.918	184	.000
AUTO	.107	184	.000	.944	184	.000
AUTH	.171	184	.000	.902	184	.000
SERE	.139	184	.000	.922	184	.000
PAPR	.158	184	.000	.925	184	.000
SUNO	.119	184	.000	.971	184	.001
PEBC	.186	184	.000	.902	184	.000
OSCI	.170	184	.000	.910	184	.000
LEMO	.120	184	.000	.949	184	.000
INSP	.196	184	.000	.869	184	.000
UPRI	.075	184	.014	.982	184	.016

a. Lilliefors significance correction. Note: Df = Degree of freedom, Sig. = Significance

Note: **SECU** = Security, **WOLO** = Workload, **SOEN** = Social environment, **AVRE** = Avoid responsibility, **CARE** = Career, **ECOP** = Economic opportunity, **CHAL** = Challenge, **AUTO** = Autonomy, **AUTH** = Authority, **SERE** = Self-realisation, **PAPR** = Participate in the whole process, **SUNO** = Subjective norms, **PEBC** = Perceived behavioural control, **OSCI** = Occupational status choice intention, **LEMO** = Learning from the module, **INSP** = Inspiration and **UPRI** = Utilisation of programme resources.

Table: Homogeneity of Variance for EEPs at Pre-test

		Levene Statistic	df1	df2	Sig.
SECU	Based on Mean	1.513	1	489	.219
	Based on Median	1.178	1	489	.278
	Based on Median and with adjusted df	1.178	1	481.012	.278
WOLO	Based on trimmed mean	2.330	1	489	.128
	Based on Mean	2.941	1	489	.087
	Based on Median	3.324	1	489	.069
	Based on Median and with adjusted df	3.324	1	487.236	.069
	Based on trimmed mean	3.183	1	489	.075
	Based on Mean	1.918	1	489	.167
SOEN	Based on Median	1.401	1	489	.237
	Based on Median and with adjusted df	1.401	1	487.402	.237
	Based on trimmed mean	2.169	1	489	.141
AVRE	Based on Mean	1.841	1	489	.175
	Based on Median	1.812	1	489	.179
	Based on Median and with adjusted df	1.812	1	486.895	.179
CARE	Based on trimmed mean	2.062	1	489	.152
	Based on Mean	1.679	1	489	.196
	Based on Median	1.003	1	489	.317
	Based on Median and with adjusted df	1.003	1	488.274	.317
	Based on trimmed mean	.875	1	489	.350
	Based on Mean	.601	1	489	.439
ECOP	Based on Median	.630	1	489	.428
	Based on Median and with adjusted df	.630	1	487.851	.428
	Based on trimmed mean	.644	1	489	.423
CHAL	Based on Mean	2.482	1	489	.116
	Based on Median	2.597	1	489	.108
	Based on Median and with adjusted df	2.597	1	488.991	.108
AUTO	Based on trimmed mean	2.619	1	489	.106
	Based on Mean	5.174	1	489	.023
	Based on Median	4.268	1	489	.039
	Based on Median and with adjusted df	4.268	1	486.151	.039
	Based on trimmed mean	4.546	1	489	.033
	Based on Mean	8.119	1	489	.005
AUTH	Based on Median	5.116	1	489	.024
	Based on Median and with adjusted df	5.116	1	462.615	.024

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SERE	Based on trimmed mean	8.512	1	489	.004
	Based on Mean	.080	1	489	.777
	Based on Median	.027	1	489	.870
	Based on Median and with adjusted df	.027	1	470.834	.870
PAPR	Based on trimmed mean	.044	1	489	.834
	Based on Mean	6.146	1	489	.014
	Based on Median	4.998	1	489	.026
	Based on Median and with adjusted df	4.998	1	477.821	.026
SUNO	Based on trimmed mean	4.117	1	489	.043
	Based on Mean	7.763	1	489	.006
	Based on Median	6.687	1	489	.010
	Based on Median and with adjusted df	6.687	1	470.986	.010
PEBC	Based on trimmed mean	7.737	1	489	.006
	Based on Mean	.007	1	489	.932
	Based on Median	.028	1	489	.867
	Based on Median and with adjusted df	.028	1	485.936	.867
OSCI	Based on trimmed mean	.004	1	489	.952
	Based on Mean	5.360	1	489	.021
	Based on Median	2.895	1	489	.090
	Based on Median and with adjusted df	2.895	1	465.017	.090
	Based on trimmed mean	5.201	1	489	.023

Note: df = degree of freedom, Sig. = Significance

Note: **SECU**= Security, **WOLO**= Work load, **SOEN**= Social environment, **AVRE**= Avoid Responsibility, **CARE**= Career, **ECOP**= Economic opportunities, **CHAL**= Challenge, **AUTO**= Autonomy, **AUTH**= Authority **SERE**= Self realisation, **PAPR**= Participate in the whole process, **SUNO**= Subjective norm, **PEBC**= Perceived behavioural control, **OSCI**= Occupational status choice intention

Table: Homogeneity of Variance for Control Group at Pre-test

		Levene Statistic	df1	df2	Sig.
SECU	Based on Mean	.528	1	182	.468
	Based on Median	.367	1	182	.545
	Based on Median and with adjusted df	.367	1	180.851	.545
WOLO	Based on trimmed mean	.455	1	182	.501
	Based on Mean	.005	1	182	.944
	Based on Median	.105	1	182	.746
	Based on Median and with adjusted df	.105	1	169.308	.746
SOEN	Based on trimmed mean	.026	1	182	.871
	Based on Mean	.037	1	182	.848
	Based on Median	.008	1	182	.927

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	Based on Median and with adjusted df	.008	1	173.470	.927
AVRE	Based on trimmed mean	.022	1	182	.882
	Based on Mean	4.033	1	182	.046
	Based on Median	3.954	1	182	.048
	Based on Median and with adjusted df	3.954	1	180.924	.048
CARE	Based on trimmed mean	3.860	1	182	.051
	Based on Mean	.442	1	182	.507
	Based on Median	.095	1	182	.758
	Based on Median and with adjusted df	.095	1	179.209	.758
ECOP	Based on trimmed mean	.273	1	182	.602
	Based on Mean	3.447	1	182	.065
	Based on Median	3.853	1	182	.051
	Based on Median and with adjusted df	3.853	1	181.992	.051
CHAL	Based on trimmed mean	3.582	1	182	.060
	Based on Mean	.029	1	182	.865
	Based on Median	.128	1	182	.720
	Based on Median and with adjusted df	.128	1	177.876	.720
AUTO	Based on trimmed mean	.076	1	182	.782
	Based on Mean	.595	1	182	.442
	Based on Median	.401	1	182	.527
	Based on Median and with adjusted df	.401	1	181.959	.527
AUTH	Based on trimmed mean	.414	1	182	.521
	Based on Mean	.258	1	182	.612
	Based on Median	.173	1	182	.678
	Based on Median and with adjusted df	.173	1	181.194	.678
SERE	Based on trimmed mean	.195	1	182	.659
	Based on Mean	1.999	1	182	.159
	Based on Median	2.063	1	182	.153
	Based on Median and with adjusted df	2.063	1	179.655	.153
PAPR	Based on trimmed mean	2.161	1	182	.143
	Based on Mean	1.236	1	182	.268
	Based on Median	.511	1	182	.476
	Based on Median and with adjusted df	.511	1	181.922	.476
SUNO	Based on trimmed mean	.956	1	182	.329
	Based on Mean	.155	1	182	.695
	Based on Median	.193	1	182	.661
	Based on Median and with adjusted df	.193	1	182.000	.661

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PEBC	Based on trimmed mean	.208	1	182	.649
	Based on Mean	.001	1	182	.973
	Based on Median	.000	1	182	.994
	Based on Median and with adjusted df	.000	1	181.963	.994
OSCI	Based on trimmed mean	.000	1	182	.991
	Based on Mean	.284	1	182	.595
	Based on Median	.255	1	182	.615
	Based on Median and with adjusted df	.255	1	181.196	.615
	Based on trimmed mean	.281	1	182	.597

Note: df = degree of freedom, Sig. = Significance

Note: SECU= Security, WOLO= Work load, SOEN= Social environment, AVRE= Avoid Responsibility, CARE= Career, ECOP= Economic opportunities, CHAL= Challenge, AUTO= Autonomy, AUTH= Authority SERE= Self realisation, PAPR= Participate in the whole process, SUNO= Subjective norm, PEBC= Perceived behavioural control, OSCI= Occupational status choice intention

Table: Homogeneity of Variance for EEPs Group at Post-test

		Levene Statistic	df1	df2	Sig.
SECU	Based on Mean	.708	1	489	.401
	Based on Median	.827	1	489	.364
	Based on Median and with adjusted df	.827	1	488.811	.364
WOLO	Based on trimmed mean	1.639	1	489	.201
	Based on Mean	9.548	1	489	.002
	Based on Median	9.030	1	489	.003
	Based on Median and with adjusted df	9.030	1	478.877	.003
SOEN	Based on trimmed mean	8.989	1	489	.003
	Based on Mean	14.414	1	489	.000
	Based on Median	9.131	1	489	.003
	Based on Median and with adjusted df	9.131	1	465.541	.003
AVRE	Based on trimmed mean	10.815	1	489	.001
	Based on Mean	5.676	1	489	.018
	Based on Median	5.380	1	489	.021
	Based on Median and with adjusted df	5.380	1	486.531	.021
CARE	Based on trimmed mean	5.788	1	489	.017
	Based on Mean	5.231	1	489	.023
	Based on Median	2.755	1	489	.098
	Based on Median and with adjusted df	2.755	1	488.999	.098
ECOP	Based on trimmed mean	3.950	1	489	.047
	Based on Mean	3.064	1	489	.081
	Based on Median	2.750	1	489	.098

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CHAL	Based on Median and with adjusted df	2.750	1	473.535	.098
	Based on trimmed mean	3.352	1	489	.068
	Based on Mean	8.872	1	489	.003
	Based on Median	7.731	1	489	.006
	Based on Median and with adjusted df	7.731	1	418.143	.006
AUTO	Based on trimmed mean	7.846	1	489	.005
	Based on Mean	2.794	1	489	.095
	Based on Median	2.527	1	489	.113
	Based on Median and with adjusted df	2.527	1	484.789	.113
AUTH	Based on trimmed mean	2.423	1	489	.120
	Based on Mean	12.233	1	489	.001
	Based on Median	8.780	1	489	.003
	Based on Median and with adjusted df	8.780	1	461.632	.003
SERE	Based on trimmed mean	8.808	1	489	.003
	Based on Mean	12.646	1	489	.000
	Based on Median	9.712	1	489	.002
	Based on Median and with adjusted df	9.712	1	438.121	.002
PAPR	Based on trimmed mean	12.505	1	489	.000
	Based on Mean	6.325	1	489	.012
	Based on Median	7.569	1	489	.006
	Based on Median and with adjusted df	7.569	1	477.368	.006
SUNO	Based on trimmed mean	6.329	1	489	.012
	Based on Mean	.000	1	489	.997
	Based on Median	.003	1	489	.956
	Based on Median and with adjusted df	.003	1	485.842	.956
PEBC	Based on trimmed mean	.010	1	489	.922
	Based on Mean	2.564	1	489	.110
	Based on Median	1.250	1	489	.264
	Based on Median and with adjusted df	1.250	1	478.658	.264
OSCI	Based on trimmed mean	2.123	1	489	.146
	Based on Mean	.007	1	489	.934
	Based on Median	.001	1	489	.969
	Based on Median and with adjusted df	.001	1	488.344	.969
LEMO	Based on trimmed mean	.017	1	489	.896
	Based on Mean	.059	1	489	.808
	Based on Median	.013	1	489	.909
	Based on Median and with adjusted df	.013	1	488.598	.909
INSP	Based on trimmed mean	.018	1	489	.893
	Based on Mean	3.335	1	489	.068

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UPRE	Based on Median	1.170	1	489	.280
	Based on Median and with adjusted df	1.170	1	483.324	.280
	Based on trimmed mean	2.906	1	489	.089
	Based on Mean	4.553	1	489	.033
	Based on Median	4.275	1	489	.039
	Based on Median and with adjusted df	4.275	1	488.964	.039
	Based on trimmed mean	4.510	1	489	.034

Note: df = degree of freedom, Sig. = Significance

Note: **SECU**= Security, **WOLO**= Work load, **SOEN**= Social environment, **AVRE**= Avoid Responsibility, **CARE**= Career, **ECOP**= Economic opportunity, **CHAL**= Challenge, **AUTO**= Autonomy, **AUTH**= Authority **SERE**= Self realisation, **PAPR**= Participate in the whole process, **SUNO**= Subjective norm, **PEBC**= Perceived behavioural control, **OSCI**= Occupational status choice intention, **LEMO**= Learning from the module, **INSP**= Inspiration, **UPRI**= Utilisation of program resources

Table: Homogeneity of Variance for Control Group at Post-test

		Levene Statistic	df1	df2	Sig.
SECU	Based on Mean	1.563	1	182	.213
	Based on Median	.968	1	182	.326
	Based on Median and with adjusted df	.968	1	179.083	.326
WOLO	Based on trimmed mean	1.354	1	182	.246
	Based on Mean	1.666	1	182	.198
	Based on Median	1.386	1	182	.241
	Based on Median and with adjusted df	1.386	1	181.999	.241
SOEN	Based on trimmed mean	1.497	1	182	.223
	Based on Mean	.014	1	182	.906
	Based on Median	.128	1	182	.721
	Based on Median and with adjusted df	.128	1	179.750	.721
AVRE	Based on trimmed mean	.017	1	182	.895
	Based on Mean	2.887	1	182	.091
	Based on Median	2.984	1	182	.086
	Based on Median and with adjusted df	2.984	1	179.862	.086
CARE	Based on trimmed mean	3.099	1	182	.080
	Based on Mean	6.781	1	182	.010
	Based on Median	6.768	1	182	.010
	Based on Median and with adjusted df	6.768	1	181.999	.010
ECOP	Based on trimmed mean	5.798	1	182	.017
	Based on Mean	4.329	1	182	.039
	Based on Median	2.521	1	182	.114
	Based on Median and with adjusted df	2.521	1	175.403	.114

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CHAL	Based on trimmed mean	3.852	1	182	.051
	Based on Mean	2.298	1	182	.131
	Based on Median	2.602	1	182	.108
	Based on Median and with adjusted df	2.602	1	176.711	.108
AUTO	Based on trimmed mean	2.223	1	182	.138
	Based on Mean	.299	1	182	.585
	Based on Median	.190	1	182	.663
	Based on Median and with adjusted df	.190	1	181.963	.663
AUTH	Based on trimmed mean	.299	1	182	.585
	Based on Mean	.313	1	182	.576
	Based on Median	.277	1	182	.599
	Based on Median and with adjusted df	.277	1	181.008	.599
SERE	Based on trimmed mean	.310	1	182	.578
	Based on Mean	4.834	1	182	.029
	Based on Median	4.858	1	182	.029
	Based on Median and with adjusted df	4.858	1	179.358	.029
PAPR	Based on trimmed mean	4.420	1	182	.037
	Based on Mean	2.276	1	182	.133
	Based on Median	2.576	1	182	.110
	Based on Median and with adjusted df	2.576	1	181.422	.110
SUNO	Based on trimmed mean	2.539	1	182	.113
	Based on Mean	.432	1	182	.512
	Based on Median	.322	1	182	.571
	Based on Median and with adjusted df	.322	1	181.155	.571
PEBC	Based on trimmed mean	.366	1	182	.546
	Based on Mean	8.379	1	182	.004
	Based on Median	5.460	1	182	.021
	Based on Median and with adjusted df	5.460	1	181.977	.021
OSCI	Based on trimmed mean	8.673	1	182	.004
	Based on Mean	.398	1	182	.529
	Based on Median	.131	1	182	.718
	Based on Median and with adjusted df	.131	1	181.899	.718
LEMO	Based on trimmed mean	.239	1	182	.626
	Based on Mean	.604	1	182	.438
	Based on Median	.297	1	182	.586
	Based on Median and with adjusted df	.297	1	176.308	.587
INSP	Based on trimmed mean	.510	1	182	.476
	Based on Mean	.222	1	182	.638
	Based on Median	.309	1	182	.579

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UPRI	Based on Median and with adjusted df	.309	1	177.588	.579
	Based on trimmed mean	.315	1	182	.575
	Based on Mean	.165	1	182	.685
	Based on Median	.057	1	182	.812
	Based on Median and with adjusted df	.057	1	179.667	.812
	Based on trimmed mean	.132	1	182	.717

Note: df = degree of freedom, Sig. = Significance

Note: **SECU**= Security, **WOLO**= Work load, **SOEN**= Social environment, **AVRE**= Avoid Responsibility, **CARE**= Career, **ECOP**= Economic opportunity, **CHAL**= Challenge, **AUTO**= Autonomy, **AUTH**= Authority **SERE**= Self realisation, **PAPR**= Participate in the whole process, **SUNO**= Subjective norm, **PEBC**= Perceived behavioural control, **OSCI**= Occupational status choice intention, **LEMO**= Learning from the module, **INSP**= Inspiration, **UPRI**= Utilisation of program resources

Appendix 6

Table: KMO and Bartlett's Tests for EEPs Group at Pre-test (Part 1)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.841
Bartlett's Test of Sphericity	Approx. Chi-Square
	6850.284
	Df
	528
	Sig.
	.000

Table: KMO and Bartlett's Tests for EEPs Group at Post-test (Part 1)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.818
Bartlett's Test of Sphericity	Approx. Chi-Square
	8637.172
	Df
	528
	Sig.
	.000

Table: KMO and Bartlett's Tests for Control Group at Pre-test (Part 1)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.746
Bartlett's Test of Sphericity	Approx. Chi-Square
	3611.840
	Df
	528
	Sig.
	.000

Table: KMO and Bartlett's Tests for Control Group at Post-test (Part 1)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.752
Bartlett's Test of Sphericity	Approx. Chi-Square
	3566.325
	Df
	528
	Sig.
	.000

Appendix 6

Table: KMO and Bartlett's Tests for EEPs Group at Pre-test (Part 2)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.760	
Bartlett's Test of Sphericity	Approx. Chi-Square	2157.443
	Df	66
	Sig.	.000

Table: KMO and Bartlett's Tests for EEPs Group at Post-test (Part 2)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.820	
Bartlett's Test of Sphericity	Approx. Chi-Square	6291.090
	Df	300
	Sig.	.000

Table: KMO and Bartlett's Tests for Control Group at Pre-test (Part 2)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.713	
Bartlett's Test of Sphericity	Approx. Chi-Square	735.093
	Df	45
	Sig.	.000

Table: KMO and Bartlett's Tests for Control Group at Post-test (Part 2)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.781	
Bartlett's Test of Sphericity	Approx. Chi-Square	2424.445
	Df	253
	Sig.	.000

Appendix 7

Table: Communalities for EEPs Group at Pre-test (Part 1)

	Initial	Extraction
SECU1	1.000	.794
SECU2	1.000	.759
WOLO1	1.000	.708
WOLO2	1.000	.679
WOLO3	1.000	.441
WOLO4	1.000	.618
WOLO5	1.000	.538
SOEN1	1.000	.816
SOEN2	1.000	.840
AVRE1	1.000	.681
AVRE2	1.000	.748
AVRE3	1.000	.720
CARE1	1.000	.835
CARE2	1.000	.857
ECOP1	1.000	.660
ECOP2	1.000	.745
ECOP3	1.000	.778
CHAL1	1.000	.721
CHAL2	1.000	.764
CHAL3	1.000	.528
CHAL4	1.000	.602
AUTO1	1.000	.675
AUTO2	1.000	.681
AUTO3	1.000	.687
AUTO4	1.000	.685
AUTH1	1.000	.794
AUTH2	1.000	.821
SERE1	1.000	.768
SERE2	1.000	.776
SERE3	1.000	.710
SERE4	1.000	.710
PAPR1	1.000	.762
PAPR2	1.000	.773

Extraction Method: Principal Component Analysis.

Table: Communalities for EEPs Group at Post-test (Part 1)

	Initial	Extraction
SECU1	1.000	.895
SECU2	1.000	.901
WOLO1	1.000	.744
WOLO2	1.000	.754
WOLO3	1.000	.621
WOLO4	1.000	.694
WOLO5	1.000	.620
SOEN1	1.000	.816
SOEN2	1.000	.835
AVRE1	1.000	.698
AVRE2	1.000	.712
AVRE3	1.000	.738
CARE1	1.000	.890
CARE2	1.000	.896
ECOP1	1.000	.785
ECOP2	1.000	.863
ECOP3	1.000	.779
CHAL1	1.000	.756
CHAL2	1.000	.804
CHAL3	1.000	.596
CHAL4	1.000	.700
AUTO1	1.000	.688
AUTO2	1.000	.668
AUTO3	1.000	.696
AUTO4	1.000	.663
AUTH1	1.000	.790
AUTH2	1.000	.810
SERE1	1.000	.691
SERE2	1.000	.765
SERE3	1.000	.687
SERE4	1.000	.691
PAPR1	1.000	.840
PAPR2	1.000	.866

Extraction Method: Principal Component Analysis.

Table: Communalities for Control Group at Pre-test (Part 1)

	Initial	Extraction
SECU1	1.000	.902
SECU2	1.000	.893
WOLO1	1.000	.772
WOLO2	1.000	.715
WOLO3	1.000	.697
WOLO4	1.000	.689
WOLO5	1.000	.570
SOEN1	1.000	.850
SOEN2	1.000	.877
AVRE1	1.000	.633
AVRE2	1.000	.774
AVRE3	1.000	.709
CARE1	1.000	.914
CARE2	1.000	.910
ECOP1	1.000	.783
ECOP2	1.000	.839
ECOP3	1.000	.840
CHAL1	1.000	.791
CHAL2	1.000	.781
CHAL3	1.000	.763
CHAL4	1.000	.757
AUTO1	1.000	.850
AUTO2	1.000	.819
AUTO3	1.000	.773
AUTO4	1.000	.745
AUTH1	1.000	.841
AUTH2	1.000	.884
SERE1	1.000	.771
SERE2	1.000	.755
SERE3	1.000	.707
SERE4	1.000	.667
PAPR1	1.000	.720
PAPR2	1.000	.877

Extraction Method: Principal Component Analysis.

Table: Communalities for Control Group at Post-test (Part 1)

	Initial	Extraction
SECU1	1.000	.878
SECU2	1.000	.872
WOLO1	1.000	.818
WOLO2	1.000	.761
WOLO3	1.000	.640
WOLO4	1.000	.692
WOLO5	1.000	.712
SOEN1	1.000	.859
SOEN2	1.000	.843
AVRE1	1.000	.670
AVRE2	1.000	.788
AVRE3	1.000	.751
CARE1	1.000	.899
CARE2	1.000	.860
ECOP1	1.000	.819
ECOP2	1.000	.867
ECOP3	1.000	.864
CHAL1	1.000	.740
CHAL2	1.000	.796
CHAL3	1.000	.649
CHAL4	1.000	.800
AUTO1	1.000	.789
AUTO2	1.000	.728
AUTO3	1.000	.732
AUTO4	1.000	.747
AUTH1	1.000	.770
AUTH2	1.000	.814
SERE1	1.000	.784
SERE2	1.000	.738
SERE3	1.000	.726
SERE4	1.000	.789
PAPR1	1.000	.867
PAPR2	1.000	.883

Extraction Method: Principal Component Analysis.

Table: Communalities for EEPs Group at Pre-test (Part 2)

Factor	Initial	Extraction
SUNO2	1.000	.577
SUNO3	1.000	.544
SUNO4	1.000	.537
SUNO5	1.000	.511
SUNO6	1.000	.547
PEBC3	1.000	.513
PEBC4	1.000	.786
PEBC5	1.000	.812
PEBC6	1.000	.815
OSCI1	1.000	.767
OSCI2	1.000	.757
OSCI3	1.000	.592

Extraction Method: Principal Component Analysis.

Table: Communalities for EEPs Group at Post-test (Part 2)

Factor	Initial	Extraction
SUNO2	1.000	.596
SUNO3	1.000	.556
SUNO4	1.000	.624
SUNO5	1.000	.617
SUNO6	1.000	.632
PEBC3	1.000	.741
PEBC4	1.000	.838
PEBC5	1.000	.801
PEBC6	1.000	.850
OSCI1	1.000	.764
OSCI2	1.000	.792
OSCI3	1.000	.501
LEMO1	1.000	.610
LEMO2	1.000	.663
LEMO3	1.000	.746
LEMO4	1.000	.690
LEMO5	1.000	.622
INSP1	1.000	.805
INSP2	1.000	.816
UPRI2	1.000	.500
UPRI9	1.000	.516
UPRI10	1.000	.730
UPRI11	1.000	.686
UPRI3	1.000	.740
UPRI1	1.000	.534

Extraction Method: Principal Component Analysis.

Table: Communalities for Control Group at Pre-test (Part 2)

Factor	Initial	Extraction
SUNO2	1.000	.515
SUNO3	1.000	.617
SUNO4	1.000	.545
SUNO5	1.000	.641
SUNO6	1.000	.835
PEBC3	1.000	.857
PEBC4	1.000	.848
PEBC5	1.000	.746
PEBC6	1.000	.808
OSCI1	1.000	.566
OSCI2	1.000	.515
OSCI3	1.000	.617

Extraction Method: Principal Component Analysis.

Table: Communalities for Control Group at Post-test (Part 2)

Factor	Initial	Extraction
SUNO2	1.000	.515
SUNO3	1.000	.651
SUNO4	1.000	.687
SUNO5	1.000	.627
SUNO6	1.000	.539
OSCI1	1.000	.771
OSCI2	1.000	.749
OSCI3	1.000	.721
PEBC4	1.000	.886
PEBC5	1.000	.874
PEBC6	1.000	.903
LEMO1	1.000	.654
LEMO2	1.000	.705
LEMO3	1.000	.807
LEMO4	1.000	.800
LEMO5	1.000	.748
UPRI2	1.000	.600
UPRI3	1.000	.535
UPRI4	1.000	.679
UPRI5	1.000	.681
UPRI9	1.000	.581
INSP1	1.000	.836
INSP2	1.000	.807
SUNO2	1.000	.515
SUNO3	1.000	.651

Extraction Method: Principal Component Analysis.

Table: Group Statistics at P-test

Variables	Groups	N	Mean	Std. Deviation	Std. Error Mean
Subjective Norms	EEPs.	491	3.5964	.72170	.03257
	Control	184	3.5208	.75206	.05544
Perceived behavioural control	EEPs.	491	2.6677	.93171	.04205
	Cont	184	2.6051	.81378	.05999
Intention.	EEP.	491	3.6049	.94427	.04261
	Cont	184	3.2518	3.96279	.29214
Attitudes	EEPs	491	.4448	.79949	.03608
	Cont	184	.3326	1.36142	.10037

Table: Independent Samples t-test at P-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Subjective Norms	Equal variances assumed	.513	.474	1.197	674	.232	.07557	.06311	-.04834	.19948
	Equal variances not assumed			1.175	317.000	.241	.07557	.06430	-.05094	.20208
Perceived behavioural control	Equal variances assumed	11.178	.001	.804	674	.422	.06261	.07790	-.09033	.21556
	Equal variances not assumed			.855	373.304	.393	.06261	.07326	-.08144	.20667
Intention	Equal variances assumed	7.489	.006	1.842	674	.066	.35308	.19171	-.02335	.72951
	Equal variances not assumed			1.196	190.838	.233	.35308	.29523	-.22926	.93541
Attitudes	Equal variances assumed	2.969	.085	1.319	674	.188	.11221	.08510	-.05489	.27931
	Equal variances not assumed			1.052	231.909	.294	.11221	.10665	-.09792	.32234

Appendix 8

Figure: Scree Plot for EEPs Group at Pre-tes (Part 1)

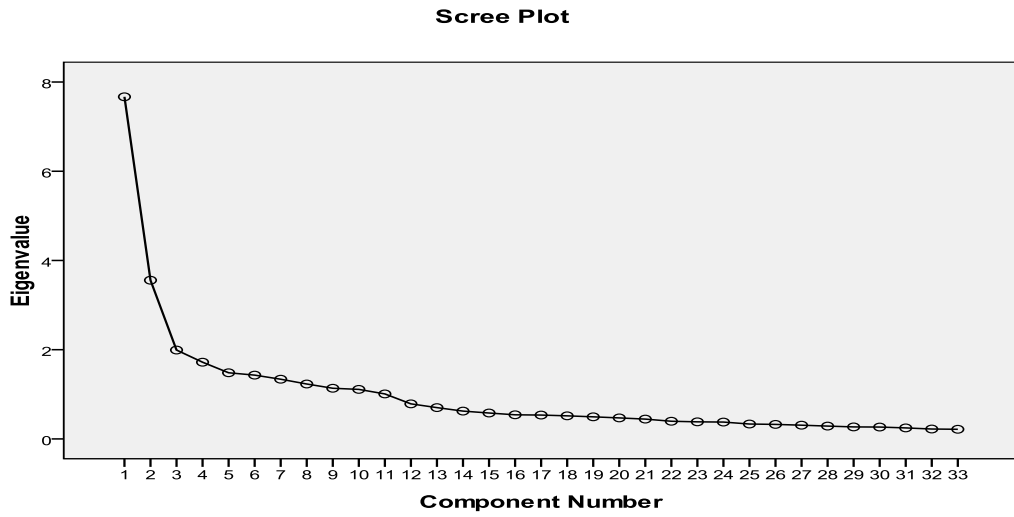


Figure: Scree Plot for EEPs Group at Post-test (Part 1)

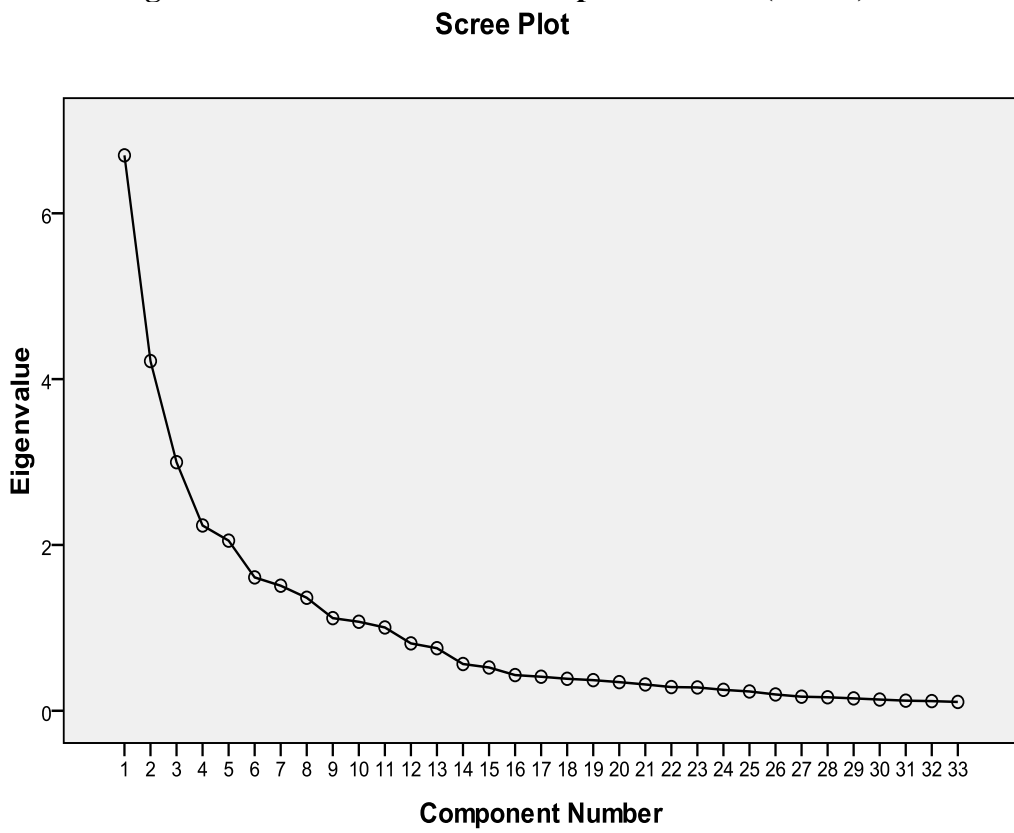


Figure: Scree Plot for Control Group at Pre-test (Part 1)
Scree Plot

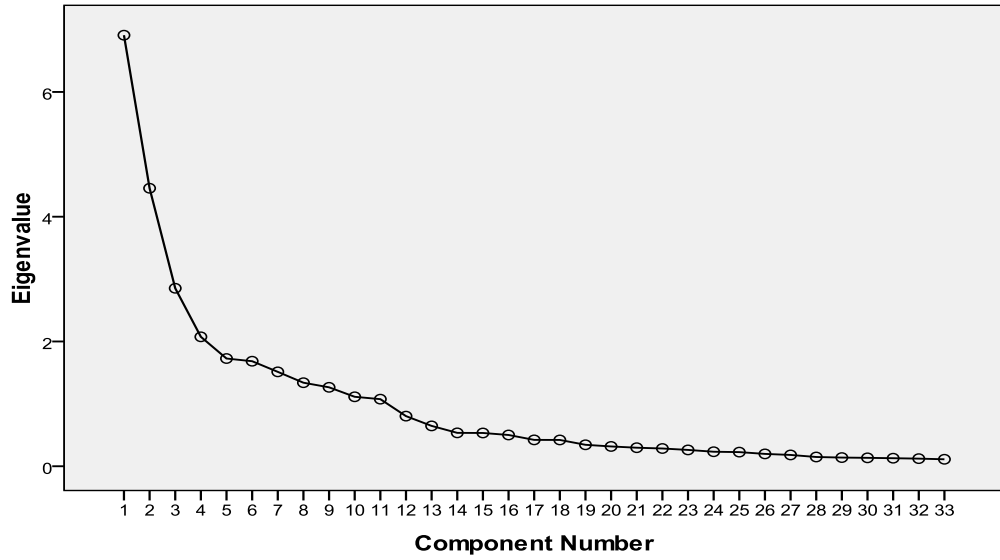


Figure: Scree Plot for Control Group at Post-test (Part 1)
Scree Plot

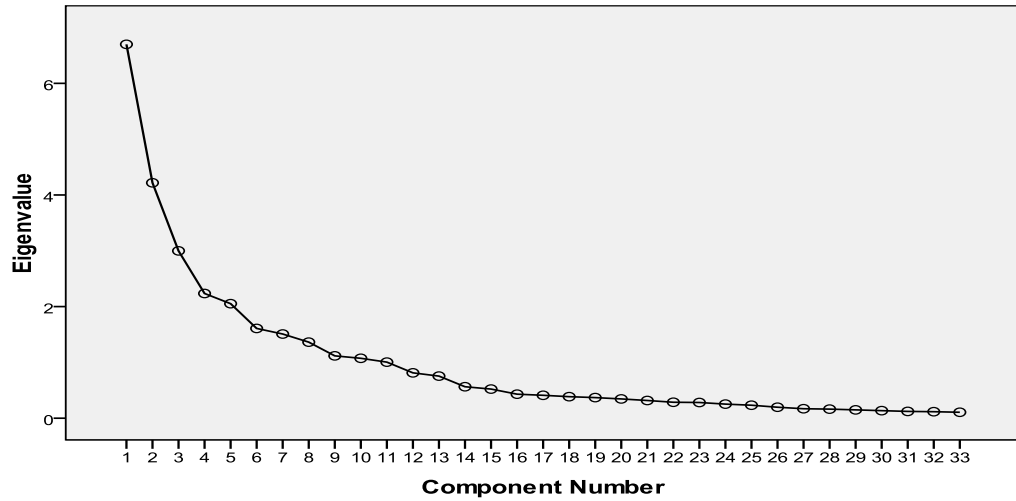


Figure: Scree Plot for EEPs Group at Pre-test (Part 2)

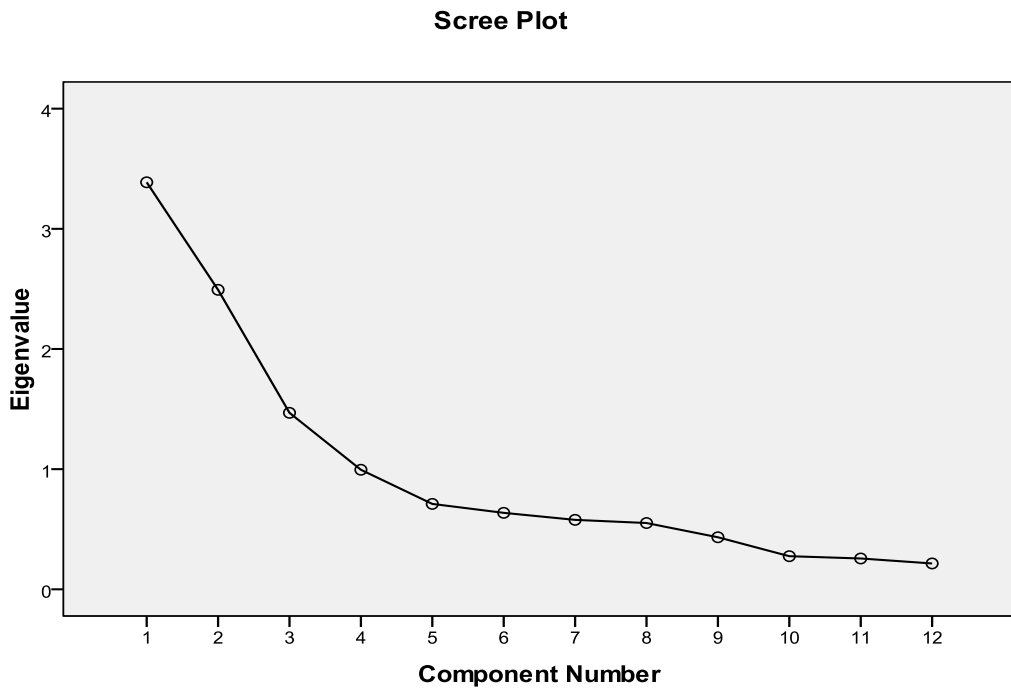


Figure: Scree Plot for Control Group at Pre-test (Part 2)

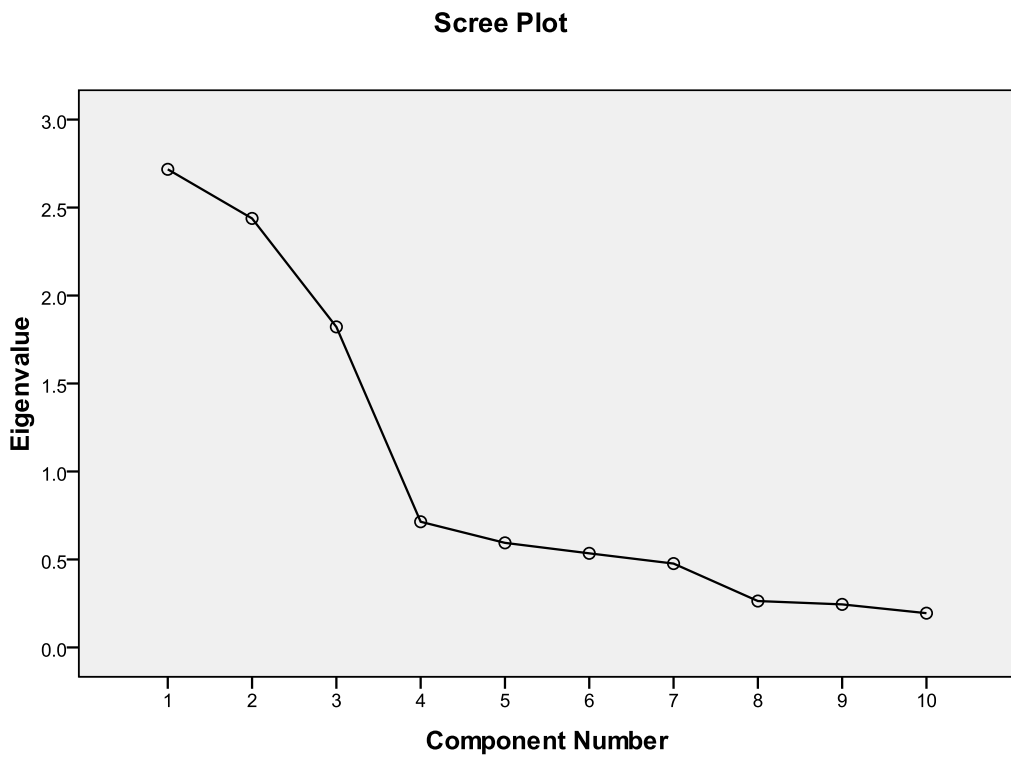


Figure: Scree Plot for EEPs Group at Post-test (Part 2)

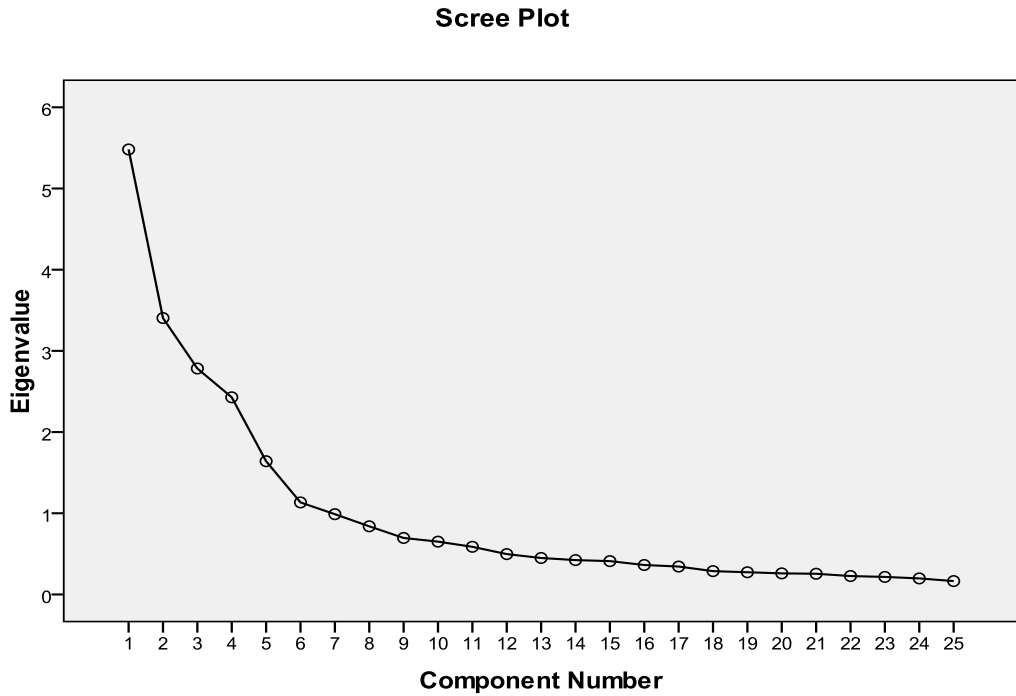


Figure: Scree Plot for Control Group at Post-test (Part 2)

