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**A study of entrepreneurial intentions of
students at FET colleges in South
Africa**

***A research report submitted by
Blessing Vusumuzi Skosana
581890***

Supervisor: Mr Rob Venter

Co-Supervisor: Prof Boris Urban

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ABSTRACT

Purpose: The aim of the study is to measure entrepreneurial intentions of students in their last year of study in Further Education and Training institutions (FETs) in South Africa. The study explored the impact of the following aspects on EI: personal backgrounds (gender, study discipline, and entrepreneurial family backgrounds); geographical location; and the self-assessed supportiveness of the contextual environment. Lastly, the strength of association between antecedents to entrepreneurial intentions and EI itself were also explored.

Design: A questionnaire was administered to 360 final-year students undertaking technical and entrepreneurship-related studies at FETs in four different provinces in South Africa. Regression, Stepwise regression, ANOVA, t-test, and correlation matrix analyses were conducted to test the proposed relationships.

Findings: FET students generally exhibit high levels of entrepreneurial intentions. Gender, study discipline and geographic location have no direct influence on entrepreneurial intentions. Entrepreneurial family background, however, exerts a significant influence on entrepreneurial intentions. Furthermore, conviction has the strongest association with entrepreneurial intentions compared with the other antecedents that were tested, that is, general attitudes, image of entrepreneurship and FET supportiveness.

Research limitations: The use of cross-sectional non-experimental design does not allow for conclusions to be drawn regarding causality. Only five FETs participated in the study; therefore, the generalisability of the findings to all FETs nationally is limited.

Practical implications: The study indicates high levels of entrepreneurial intentions in circumstances where literature has found the opposite findings. It therefore becomes critical to find integrated teaching methods that take into account the South African environment in order to harness the high entrepreneurial intentions of students.

Key words: Further Education and Training, Students, Entrepreneurial intentions, South Africa.

DECLARATION

I, Blessing Vusumuzi Skosana declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Mr Blessing Vusumuzi Skosana



Signed at Midrand On the 15th day of September 2012

DEDICATION

To my late father (Dingane) who dared to spend time and money to give us an education. Being an educator himself, he taught me the value of education, the greatest gift of all. I dedicate this labour of love to both him and my mother (Saletta) for the valuable contribution that they have made to my life. Thank you Majali ka Thamane for all your love and support. I thank God that he chose your seed and womb to bear me. I will forever cherish and love you for all you have done to make me the man I am today. I love you with all that I have. I dedicate this thesis to you. God bless you both, always. Love. Honour. Respect.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the Study

The purpose of this research is to investigate the entrepreneurial intentions (meaning the probability of starting a business in the foreseeable future) of students in Further Education and Training colleges (FETs) in South Africa. A derived model of entrepreneurial intention by Autio, Keeley, Klofsten and Ulfstedt (1997), which was adjusted from Davidsson's (1995) model in order to account for characteristics that are unique to students, is used for this purpose. The study investigates the impact that personal characteristics such as gender or family history of entrepreneurship exert on students' intentions to start their own businesses. Similarly, the influence of environmental factors such as the geographic location of FETs, or exposure to government support programmes designed for small businesses and youths, is explored. Lastly, the study investigates the strength of the relationships or associations between various antecedents to entrepreneurial intentions and the outcome of entrepreneurial intention.

In this report, the measure of intention has been sub-categorised into timeframes of 1 to 2 years (immediate intention), 3 to 5 years (medium-term intention) and lastly, more than 5 years after graduating (long-term intention) from FET. The sooner the respondents intended to found their own firms, the higher their intention was perceived to be. The rationale is that the shorter the timeframe within which students intend to realise their aims, the greater the need for those students to start taking some fairly concrete steps towards realising their intentions.

1.2 Context of the Study

1.2.1 *South Africa's need of SMEs for economic growth*

The development of Small Medium Enterprises (SMEs) is a critical agenda for government. FETs and other higher education institutions are hubs of young people willing to be taught new skills that could contribute positively to both SME and skills development in South Africa. FETs are aimed at development and up-skilling of technical skills such as plumbing, boiler making, diesel mechanics, electrical engineering, and computer engineering, to name but a few. Business management, which includes components of content related to entrepreneurship, has always been one of the courses offered; however as an independent course it is not integrated into technical courses such as plumbing, electrical engineering, etcetera. Business management courses were never intended to develop entrepreneurship as a construct or to develop entrepreneurs, but rather to teach one how to become an effective manager in a business. In their current format, FETs therefore currently miss a key opportunity to position themselves as hubs of youth entrepreneurship by continuing to offer technical education, while integrating this with entrepreneurial (business management) training.

In support of this view, the Green Paper on Further Education and Training (Department of Education, 1998) argues for an expanded, diversified and revitalised FET sector that provides for the development of self-employment, small businesses, entrepreneurs and the community. It also promotes the need for the development of intermediate to high-level skills, which are required in the manufacturing sector. Therefore, FET graduates emerge from such training with critical skills that could potentially exert an impact on the economy, whether at local or national level. However, these skills need to be harnessed in order to achieve the desirable high growth and entrepreneurial impact. Entrepreneurial intentions of students remain critical in order to increase early-stage entrepreneurship among the youth, particularly in the manufacturing sector, and to develop entrepreneurs who would display high growth in South Africa.

According to the National Planning Commission's (NPC) National Development Plan Vision for 2030 (National Planning Commission, 2011), SMEs will play an important role in the creation of employment in South Africa. Similarly, the 2006 FinScope small-business survey (Finmark Trust, 2007) indicates that 90% of jobs created between 1998 and 2005 were in micro, small and medium firms. This is so despite the total early-stage entrepreneurial activity rates in South Africa that are approximately half of those in other comparable developing countries (*Ibid*).

According to the Development Bank of Southern Africa (DBSA) (Development Bank of Southern Africa, 2011), the overall challenge for FETs is that the system must grow substantially in order to produce the quantity and quality of skills required by the country. The colleges need to be supported in their current extremely 'fragile' state. Interaction with the workplace would also be invaluable to ensure that the curriculum is current and meets the expectations of potential employers (*Ibid*).

1.2.2 *The problem of youth unemployment*

There is a growing recognition among governments and international bi-lateral and multi-lateral organisations that as jobs become scarce, youth entrepreneurship should become an important strategy for integrating youths into labour markets, thereby addressing the unemployment challenges (Maclsaac, 1996). According to Maclsaac (*Ibid*), evidence indicates that when jobs are scarce, young persons are generally more likely to be negatively impacted; hence the high unemployment rate among youth. This assertion is borne out by the Labour Force survey (Statistics South Africa, 2008) according to which respondents aged between 15 and 34 years comprised three-quarters of the total number of the unemployed. According to Maclsaac (1996), supporting youth entrepreneurship can contribute towards the social and economic empowerment of youths.

Maclsaac (*Ibid*) states two key rationales for supporting development of young entrepreneurs. The first rationale focuses on the potential to generate output, employment and income. The author indicates that entrepreneurship is central to innovation, economic growth and job creation; therefore, the creation of SMEs

contributes substantially to job creation and income generation, and provides employment opportunities for an increasing number of students.

The second rationale for targeting young student entrepreneurs in South Africa is welfare improvement. Maclsaac (*Ibid*) opines that entrepreneurship can enable young people to earn a livelihood in order to support themselves and their families, thus reducing poverty levels. Various researchers, such as Kantor (2001), argue that supporting this rationale of self-employment and entrepreneurship increases the self-esteem and confidence of youths, consequently leading to greater self-control over their lives in both social and economic spheres.

1.3 Problem Statement

1.3.1 *Main problem*

Students in FETs either undertake business management courses, or else they are trained to become qualified artisans in various disciplines such as electrical engineering, diesel mechanics, plumbing, and so forth. The business management (entrepreneurial) courses are offered as a study discipline independent of and segregated from the technical discipline; there is therefore minimal overlap in courses studied by students pursuing technical vs. business management fields of study. In the various technical programmes offered by FETs, if an element of business management is incorporated, it is limited to costing. Costing as an element of business management on its own does not increase the students' entrepreneurial abilities to recognise and execute opportunities. According to the GUESSS 2011 report (Sieger, Fueglistaller, and Zellweger, 2011), business management and economics courses have a positive influence on the entrepreneurial intentions of students. Lack of exposure to these courses at FETs, therefore, generally results in the production of graduates who are job seekers instead of the much-needed entrepreneurs who fuel the economy. This situation could be further exacerbated by a lack of focus in the FET curricula to develop an entrepreneurial culture among

students. There are insufficient programmes at FETs that are directed at encouraging and improving the entrepreneurial intentions of students.

1.3.2 Sub-problems

The first sub-problem was to investigate the extent to which the personal backgrounds of students exert an influence on their overall entrepreneurial intentions. Personal background has a direct correlation with self-efficacy, and as such a direct impact on entrepreneurial behaviour, Krueger (1993). In this study, the following elements of personal background were tested: gender, study discipline and entrepreneurial family-history.

The second sub-problem was to investigate the extent to which the FET environment to which students are exposed influences the entrepreneurial intentions of students. To this end, firstly, the impact on entrepreneurial intention that geographical locations of FETs, vis-à-vis rural vs. urban vs. metro-township, was explored.

Secondly, whether FET students have gained knowledge of and exposure to government SMME support programmes, and the impact that such exposure has had on their entrepreneurial intentions, was studied. The focus was limited to support programmes provided by Development Finance Institutions (DFIs), namely, Khula, the National Youth Development Agency (NYDA) and the Small Enterprise Development Agency (SEDA).

The third sub-problem was to investigate which of the antecedents has a stronger relationship with entrepreneurial intentions in the context of students. The antecedents that were tested were conviction, FET environment (DFI exposure), image of entrepreneurship (pay-off) and general attitudes (the valuation of money, and respondents' achievement motivation).

1.4 Significance of the Study

An FET is one of the higher education institutions through which young people may pass on their way towards their working life. It is therefore expected that FET students will be making career decisions imminently after, and often before, graduation. For FET students to view entrepreneurship as a possible career choice, they have to possess intentions to start their own businesses. Entrepreneurial intentions are influenced by education, social networks and exposure, among others Autio *et al.* (1997). Entrepreneurial intentions constitute the most significant predictor of whether one will indeed start a venture. In relation to FET students, it is important to establish the levels of entrepreneurial intentions of students so that the colleges can develop programmes that are targeted to produce students who are endowed with an enterprising culture. This study adopts the view that the career preferences of FET students can be influenced towards entrepreneurship by providing programmes that will encourage entrepreneurial intentions of students, and consequently increase early-stage entrepreneurial activity.

According to Davidsson (1995), since the 1970s, large firms in western countries have experienced a decline in their abilities to create a net increase in employment. This has resulted in continuous high levels of unemployment thus validating the notion that small new firms are critical role players in the creation of new jobs (*Ibid*). This is equally a reality in the South African economic environment. The economic development focus should fall on enabling the SME sector to enable it to become a significant job creator given the current unemployment challenges. South Africa's approach is to develop opportunities for both employment and entrepreneurship in the manufacturing sector (National Planning Commission, 2011). FETs provide a wide spectrum of students who are technically skilled to manufacture products and/or offer services. These students can be positioned to create ventures that are sustainable as part of their training at the FETs. This training will create greater opportunity alertness, thus increasing the entrepreneurial intentions of students, and overall, produce students with an enterprising culture.

The significance of this study is to furnish insights for the Department of Economic Development, the Department of Higher Education and Training, and the Department of Trade and Industry to recognise and further explore the entrepreneurial value that can be created by supporting FET students to create sustainable small businesses. Among the recommendations that were made in the 2010 Global Entrepreneurship Monitor (GEM) (Kelley, Bosma, Amorós, and Global Entrepreneurship Research Association, 2011), the need to strengthen and support FETs and other entities that support enterprise development, was cited. Further, the GEM report argued that a focus on entrepreneurial skills development is necessary to create an awareness of entrepreneurship as a viable career option and that SMME development is critical to improving youth employment and skilling.

This current study will also assist the Department of Higher Education (DoHE) to realign its FET curriculum to be more relevant to students who are likely to become future entrepreneurs. Various authors such as Lüthje and Frank (2002), Charney and Libecap (2000), and Robinson and Sexton (1994), have all advanced the notion that there is a positive correlation between education and business creation. Business creation is linked to entrepreneurial intentions because they precede the creation of a new venture. According to Kirby (2002), researchers most often do not distinguish between education and its reputed outcome: knowledge. Education is simply used as a proxy for knowledge. Further, Kirby (*Ibid*) argues that for many years a number of entrepreneurship programmes have been introduced in many different parts of the world. However, they hardly focus on developing skills, attributes and behaviours required for successful entrepreneurship.

Similarly, Meager (2003) advances that a large portion of academic institutions do not offer entrepreneurship training; instead, entrepreneurship is “packaged” as a component of other business programmes. In the case of FETs, it is “packaged” with business management as an independent discipline of study. There is evidence of advantages to stimulating youth entrepreneurship; young entrepreneurs are more likely to hire fellow youths (*Ibid*). Young entrepreneurs are viewed as being potentially more likely to be responsive to new economic opportunities and trends;

young entrepreneurs have generally better computer skills; young people are more present in high growth sectors; and young people with entrepreneurial skills are considered to be better employees (*Ibid*). Therefore, FETs are crucial hubs of young people that can be used to develop and harness entrepreneurship and capitalise on the advantages that are inherent to youth entrepreneurship. In this manner, a significant contribution to early-stage entrepreneurship, developing the SME sector and creating jobs can be made.

1.5 Delimitations of the Study

The following are identified as delimitations of this study:

- The research does not focus on a comparison of which group of students is more likely to start a venture from a specific programme among technical students;
- Data were collected from students in different disciplines of study in five (5) different FET colleges located in four (4) provinces in South Africa, which could therefore reduce the generalisability of the findings.

1.6 Definition of terms

The following are the definitions of terms used in the report:

DFI – Development Finance Institutions. These are institutions through which government funding reaches communities as part of the government’s push to facilitate economic growth and job-creation. For the purposes of this study, Khula, NYDA and SEDA are referred to as DFIs

DoHE – The Department of Higher Education and Training (South Africa) is the custodian of all higher education and training institutions, which include FET colleges. Training and development is a key mandate for the department.

DTI – Department of Trade and Industry (South Africa), whose primary focus is to promote structural transformation towards a dynamic industrial and globally competitive economy, provides a predictable, competitive, equitable and socially-responsible environment, conducive to investment, trade and enterprise development.

FETs – Further Education and Training colleges offer all learning and training programmes for the National Qualifications Framework (NQF) Levels 2 to 4, or the equivalent of Grades 10 to 12 in the school system. It is the band within the NQF that follows directly on General Education and Training (GET) and precedes Higher Education (HE). Learners enter FETs after the completion of the compulsory phase of education up to Grade 9 or Level 1 of the NQF. FET is not compulsory education, and by definition, has no age limit. Its goal is to promote lifelong learning and education on-the-job. FETs offer vocational programmes that strive to provide high quality education and training to help equip students with the qualifications and skills needed to start out on a chosen career path. Public FETs also work closely with stakeholders from various industries to help fulfil the great need that exists for trained, skilled and qualified employees through customised education and training programmes. The education and training offered at public FETs is customised and responsive to the needs of learners and industry, and the careers they encourage

are essential for the economic upliftment of the South African economy. This study focuses on public FETs

FET students – people enrolled at FETs between the ages of 18 and 35, and in their final year of study.

GEM – The Global Entrepreneurship Monitor research programme is an annual assessment of the national level of entrepreneurial activity. The research programme, based on a harmonised assessment of the level of national entrepreneurial activity for all participating countries, involves exploration of the role of entrepreneurship in national economic growth. Systematic differences continue, with few highly entrepreneurial countries reflecting low economic growth.

GUESSS – The Global University Entrepreneurial Spirit Students' Survey investigates intentions and behaviour of students worldwide and their decisions to start entrepreneurial ventures. This is an international report that compares entrepreneurial intentions and behaviour of South African students with those of their international counterparts.

Metro-Township – A metropolitan area refers to a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure, and housing. A metropolitan area usually encompasses multiple jurisdictions and municipalities: neighbourhoods, townships and cities. Metropolitan areas have become key economic and political regions in South Africa. The term township usually refers to the often underdeveloped urban living areas that, from the late 19th century until the end of apartheid, were reserved for non-whites (black Africans, Coloureds and Indians). Townships were usually located on the periphery of towns and cities. In this report, Tshwane and Ekurhuleni FETs are considered metro-township since they are located in Mamelodi (within the Tshwane metro council) and Katlehong (within the Ekurhuleni metro council) respectively. Tshwane and Ekurhuleni metro councils are both situated in Gauteng province.

NYDA – The National Youth Development Agency is mandated to develop young people (18 – 35 years), including women, through guidance and support of initiatives

across sectors of society and spheres of government. NYDA embarks on initiatives that seek to advance the economic development of young people, develop and coordinate the implementation of the Integrated Youth Development Plan and Strategy for South Africa.

Rural – The Rural Development Framework (RDF) of 1997 defines rural areas as “sparsely populated areas in which people farm or depend on natural resources, including the villages and small towns that are dispersed throughout these areas”. The main types of rural areas can be categorised as commercial farming or communal areas. Commercial farming areas cover much of the country, characterised by large farms interspersed with small towns.

In this report, Sekhukhune FET is considered rural, as it is located in Groblersdal, which is an agricultural based small town in the Limpopo province.

SEDA – The Small Enterprise Development Agency is an agency of the South African Department of Trade and Industry (DTI) established in December 2004, through the National Small Business Amendment Act, (Act 29 of 2004). SEDA is mandated is to design and implement a standard and common national delivery network for small enterprise development; and to integrate government-funded small enterprise support agencies across all tiers of government. For the purposes of this study, it has been classified under Developmental Finance Institutions (DFIs).

Furthermore, its mandate is to broaden participation in the economy in order to strengthen economic development.

SMMEs – Small Micro and Medium Enterprises, interchangeably also referred to as Small and Medium Enterprises/ Small and Medium-sized Enterprises (SMEs).

Urban – An urban area (urbanised area agglomeration, population centre or urban centre) is a continuously built up land mass of urban development. It generally constitutes the “urban footprint” – the lighted area that can be observed from an airplane on a clear night.

In this report, Nkgangala and Umgungundlovu FETs are considered urban, as they are located in Witbank (Mpumalanga province) and Umgungundlovu (formerly Pietermaritzburg, in KwaZulu-Natal province).

1.7 Assumptions

1.7.1 *Research Assumptions*

The following assumptions were generated:

- That the general outlook of the curricula of FETs is the same or similar for the same or similar programmes;
- All participating FETs would avail their students to participate in the study;
- That the students would have sufficient knowledge about entrepreneurship and entrepreneurial education;
- That the majority of students registered at FETs would fall within the youth category according to the South African legal meaning of youth (being people between the ages of 18 and 35); and
- It was assumed that the Department of Higher Education and Training, the Department of Economic Development and the Department of Trade and Industry would be keen to collaborate in developing entrepreneurship using FETs as one of the hubs.

1.7.2 *Research Ethics*

This research is based upon the ethical principles of honesty, objectivity and confidentiality. The research methods and procedures, as well as report data and results are reported honestly and free of fabrication, falsification, or misrepresentation. In the research design, data analysis and interpretation, bias and self-deception have been avoided. The informed consent of participants was sought

through a covering letter explaining the reasons for the research and requesting their completion of a paper survey. To ensure the confidentiality of the questionnaire respondents, no attempt has been made to identify them by any means or form.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The South African Development Indicators for 2009 (Presidency - Republic of South Africa, 2009) reveal that 47.8% of unemployed people were between the ages of 15-24 years, with a further 27.6% in the 25-34 year age bracket; meaning that, in total, just over 75% of the unemployed people falls within the age group of 15-34, which is the official categorisation of “youths” in South Africa. Importantly, a significant number of FET-graduates are among these unemployed youths. Lewis and Massey (2003) suggest that some governments, including that of South Africa, have begun to develop policies that provide support to young people with entrepreneurial intent, with some having already acted upon this intent to facilitate youth entrepreneurship. In South Africa, such programmes are provided by SEDA, Khula and the NYDA. This appears to be an indication that government accepts that youth entrepreneurship can contribute to economic development. However, the bigger question is whether FET students have entrepreneurial intentions that will position them to maximise the benefits that accompany youth entrepreneurship in South Africa.

The South African government acknowledges that the small business sector is a key driver and contributor to economic growth at national, regional (provincial) and local levels (Rogerson, 1997; Kesper, 2000; Morris and Brennan, 2000). It has been suggested that creating an enabling culture through government policies, procedures and small business practices can facilitate a business environment that is supportive of entrepreneurial activity and demand. This approach tends to encourage the activity of start-up ventures and regional economic development (Morris and Brennan, 2000). In South Africa, the Department of Trade and Industry (DTI) developed the Integrated Strategy for the Promotion of Entrepreneurship and Small

Enterprises (Department of Trade and Industry, 2005). There are three pillars to the strategy, firstly increasing the supply of financial and non-financial support services; secondly, creating demand for small enterprise products and services, and lastly, reducing small enterprise regulatory constraints (DTI, 2005). This strategy supports one of the core objectives of reviving and focusing on FETs by government: “VETs (FETs) are a crucial tool of economic development” (Godfrey 1991; Crouch, Fiengold and Sakolo 1999; King and McGrath 2002).

The DTI has ventured further and developed a draft National Youth Economic Empowerment Strategy and Implementation Framework 2009-2019. The draft framework focuses on broad youth-related economic empowerment issues. It outlines, as part of its mission, its aim of fostering “human capital development with a special focus on youth entrepreneurship, business management and technical skills” (Department of Trade and Industry, 2009, p. 11). While this effort is being ploughed into youth entrepreneurship, research findings indicate that in South Africa, young people understand entrepreneurship as a ‘stop-gap’ measure while in search of formal employment (Chigunta, Schnurr, James-Wilson, and Torres, 2005).

2.2. Definition of Topic

Davidsson (1995) asserts that empirical research in entrepreneurship was focused on the psychological characteristics of founders, and that there were no links to the developments in psychology. A characteristic approach was often drawn, and almost endless lists of entrepreneurial characteristics were suggested (Hornaday, 1982). It was later discovered, however, that this type of research was largely inadequate to answer the question “What makes individuals found new ventures?” beyond accounting for a small fraction of the answer (Davidsson, 1992; Gartner, 1989; Louw and MacMillan, 1988). Empirical evidence has over the years indicated more and more that personal background characteristics have a stronger influence on the decision for an individual to found a new venture than the influence of psychological characteristics (Reynolds, 1991; Stanworth, Blythe, Granger and Stanworth, 1989).

The decision to found a new venture can be regarded as reasoned action or planned behaviour, therefore, the association between entrepreneurial intentions and actual behaviour are fairly strong (Ajzen, 1991; Sheppard, Hartwick and Warshaw, 1988). There are distinctive advantages of comparisons between non-entrepreneurs and entrepreneurs that arise from studies of entrepreneurial intentions. Firstly, it is by far a small minority that chooses to engage in new venture creation and the factors that drive such a decision can be as contextual as they can be intrinsic and psychological. As such, any attempt to produce a narrow list of the determinants of entrepreneurial behaviour is unlikely to be either scientific or accurate. In contrast, “the intentions-based approach offers testable, theory-driven models of how exogenous factors [demographics, traits, current situation] affect [entrepreneurial] attitudes, intentions, and behaviour” (Krueger and Carsrud, 1993, p. 316).

Secondly, the said approach frustrates the misconception of identifying as determinants of entrepreneurial behaviour such as individual characteristics that in fact develop as a result of running one’s venture. It has been debated whether an internal locus-of-control (Rotter, 1966; Brockhaus, 1982) propels individuals to found their own venture, or whether it is the desire of venture owner-managers to have more perceived control of their destiny. Lastly, for policy decisions that are aimed at stimulating new venture creation, it becomes important to gain a clear understanding of the type of individuals who would consider starting a venture. Reynolds (1995) suggests the type of research that would be helpful for such purposes. The type of research is directed towards the understanding of antecedents of entrepreneurial intentions that may be instrumental in developing potential entrepreneurs into real venture founders.

There are various models that have been used to test entrepreneurial intentions. According to Izquierdo and Buelens (2008), these models include Shapero’s (1982) entrepreneurial event model. In terms of this model, entrepreneurial intentions rely on three elements: perceived desirability, likelihood to act, and perceived feasibility.

A model based on Ajzen's (1991) theory of planned behaviour (TPB) is also well recognised. According to Ajzen, intentions are explained by: attitudes toward behaviour, subjective norms, and perception of behavioural control.

Bird (1988) developed another model which argues that entrepreneurial intentions are based on a combination of both personal and contextual factors. Boyd and Vozikis (1994) further developed Bird's model and included the concept of self-efficacy, which is derived from social learning theory.

Lastly, Davidsson (1995) developed a model, which argues that entrepreneurial intentions can be influenced by:

- conviction, characterised by general attitudes (change, compete, money, achievement, and autonomy) and domain attitudes (payoff, societal contribution and know-how); and
- conviction in relation to personal variables, which include age, gender, education, vicarious experience and radical change experience.

This model was later adjusted by Autio *et al.* (1997) in order to account for the situation and environment of the student, which has an influence on entrepreneurial intentions (EI). The current study investigates the entrepreneurial intentions of FET students using this very adapted model by Autio *et al.* (*Ibid*). This model is known as the base model and was designed to investigate university students' intentions to start their own ventures.

In the study of entrepreneurial intentions, the theory of planned behaviour is essential. This alludes to the individual's intention to perform certain behaviour. There are three main conceptual propositions of which intention is a result:

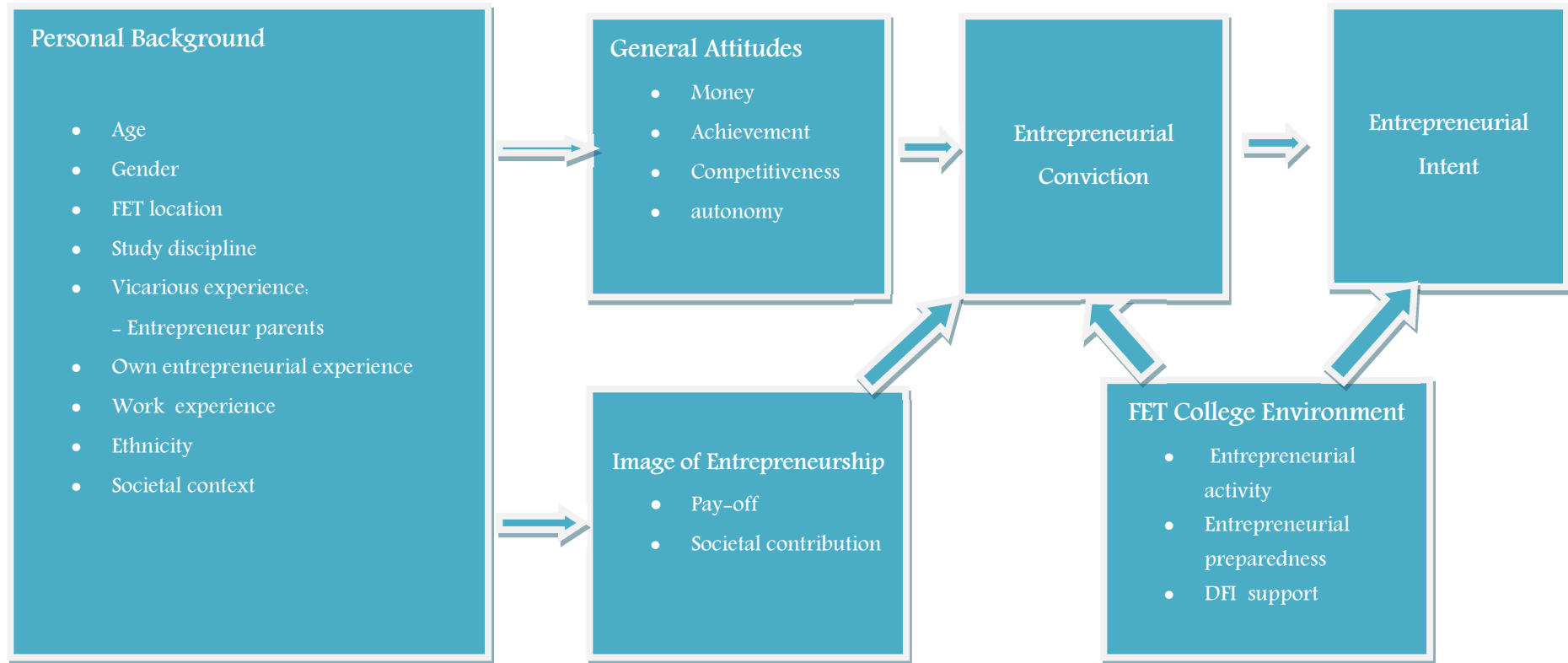
- **Attitude toward behaviour:** According to Ajzen (1991), when new matters or need for decisions arise to which a response is required to evaluate these, an individual will draw relevant information from their stored memory, which influences their beliefs. Due to evaluative implications, attitudes towards

behaviour are automatically formed. The model encompasses the notion of perceived desirability (or lack thereof). This is in line with the model developed by Shapero and Sokol (1982), which indicates perceived desirability as one of the components.

- **Subjective norms:** These factors that relate to the perceptions of others and their opinions of the proposed behaviour, which has a direct influence on whether the individual will perform the behaviour (Ajzen, 1991). These perceptions are considered to be of less importance and relevance for individuals with a resilient internal locus of control (Ajzen, 1991 and 2002) than for those with an orientation towards strong action (Bagozzi, Baumgartner and Yi, 1992). These perceptions also influence the notions of the individual's desire and perceived feasibility in Shapero and Sokol's model (1982).
- **Perceived behavioural control:** These factors refer to the individual's perception of difficulty or ease to perform the behaviour (Ajzen, 1991). The concept of perceived behavioural control was introduced into the theory of planned behaviour to facilitate non-volitional elements that are inherent in all behaviours (Ajzen, 2002). These factors relate to perceptions of the behaviour's feasibility, which are an essential predictor of the behaviour. Individuals usually choose to follow the behaviour they believe they will enable them to master and control.

The base model which forms the conceptual framework for this study encapsulates these three major conceptual determinants. It is important to note that the purpose of this study is not to test the base model or components thereof, but rather, to extrapolate a few aspects of the model to form the basis of the conceptual framework used for this study.

Figure 1: Base Model



Source: Autio *et al.* (1997) adjusted from Davidsson (1995) model

Entrepreneurial intent is moderated by conviction and social context variables. In the model illustrated above, social context variables take into account the traits of the university (in this case, FET) environment and situational variables. This model advances that personal background variables influence general attitudinal outlook (money orientation, need for achievement, competitiveness, and autonomy) and image of entrepreneurship influences students' perception of entrepreneurship as a career alternative. Personal background variables indicated in this model encompass variables that are unique to students, for example, work experience and the breadth of the experience, gender and age.

2.3. The Rationale of the Base Model

2.3.1. *The variables in the base model*

2.3.1.1. *Intention*

Davidsson (1995) argues that the decision to start a new venture is largely assumed to be planned over a period and is thus preceded by an intention to start the venture. It is important to note that at times the intention is shaped only shortly before the actual decision. There are also some cases where the intention never leads to the execution of the behaviour. Thus entrepreneurial intentions are assumed to be a predictor, even if imperfect. Reitan (1996) identified a number of different measures for intentions, including short-term intentions which were measured by starting a new venture within two years and long term plans to start a new venture at 'some point of time'. Evidence suggests that situational variables exert a greater influence on individuals who are willing to start their venture within the short term (two years) than individuals whose intentions are long term (*Ibid*). In this report, intention has been subcategorised into timeframes of 1 to 2 years (immediate intention), 3 to 5 years (medium term intention), and lastly, more than 5 years (long term intention) after graduating from the FET. The sooner the respondents intended to found their own firms the higher their intention was perceived to be.

2.3.1.2. Conviction

Davidsson (1995) argues that, in terms of his model, the antecedent that plays a major determinant of entrepreneurial intention is the person's conviction. Conviction enables the individual to perceive entrepreneurship as a suitable alternative career option. This concept also has close links with *perceived self-efficacy*, which has been encompassed in previous academic discussions (Boyd and Vozikis, 1994; Krueger and Brazeal, 1994; Krueger and Carsrud, 1993). Further this concept has been dealt with in various empirical studies on entrepreneurial intentions and behaviour (Scherer, Adams, Carley, and Wiebe, 1989; Krueger, 1994). In order to operationalise this concept, it will involve more items than the likes of 'I would manage (and like) running my own firm'. It will have to include items that also suggest that taking the entrepreneurial career option will be instrumental to improving the individuals' economic living standard. The conviction variable can be regarded as a variety of acts in the Ajzen-Fishbein type attitude models (Ajzen & Fishbein, 1980). Rogers (1983) argues that the conviction is key to the model of adoption of innovations; this model refers to a psychological process that is not completely different from the process that leads to the individuals' decision to found a new venture.

2.3.1.3. Social context (Situation)

Situational factors are key to entrepreneurial decision. This is highlighted in the models proposed by Bird (1993), Martin (1984) and Shapero and Sokol (1982). The studies indicate that current employment status and changes in it can be assumed to be one of the most critical situational influences. It is important to note that not all studies have arrived at the same conclusion (cf. Hamilton, 1989; Reynolds, 1991). A number of studies have revealed a positive relationship between unemployment and new venture creation (cf. Davidsson, Lindmark and Olofsson, 1994; Reynolds, Storey and Westhead, 1994; Storey, 1994).

Autio *et al.* (1997) adjusted the model to suit the social context of the students. The situational traits of these variables are influenced by the breadth of work experience

and while age influences the said variables. Marital status also exhibited a positive correlation on how quickly would students start their own venture after graduation. As graduation draws near, the question regarding career choice becomes more of a reality than a dream for students. Therefore, it is possible that background variables in the data have a direct positive influence on conviction and intent. In a study conducted by Reynolds (1995), the students had high levels of nascent entrepreneurship. Due to sufficient previous findings that demonstrate the key role played by role models with regards to entrepreneurial behaviour, elements of the depth of working experience such as exposure to parents or close relatives as entrepreneurs, previous work experience in SMEs, have a direct positive influence on conviction and intent (*Ibid*). The changes made to accommodate the social context of students, therefore, took the environment of universities (in this report, FETs) and the number of completed years of study into consideration.

Situational variables have been empirically tested and indicate the strongest positive direct influence on behaviour, or have demonstrated a strong association between intentions and behaviour (cf. Krueger and Carsrud, 1993). Reynolds (1995) argues that a significant influence on pre-decision variables should also be expected. In the base model in Figure 1, employment status is expected to influence students' intentions, since venture creation is understood to constitute planned behaviour and conviction.

2.3.1.4. General attitudes

Autio, Keeley, Klofsten, Parker and Hay (2001) pointed out that attitudes have been shown to explain approximately 50% of the variance in intentions. Attitudes have been recognised as independent variables that predicted the variance in entrepreneurial intention by previous researchers (Kolvereid, 1997; Schwarz, Wdowiak, Almer-Jarz, Breitenecker, 2009; Lüthje and Franke, 2003; Autio *et al.*, 2001). Background exerts an impact on general attitudes and on the person's image of entrepreneurship. According to Lüthje and Franke (2003), attitude toward entrepreneurship was the most important determinant of the intention to become

self-employed, and this attitude is influenced by the personality (i.e. risk-taking propensity and internal locus of control) of the respondents.

There are crucial difference between “general attitudes” and “domain attitudes” in the present context of this model and study. The measures (agree-disagree statements) of the former are more general while the latter places a specific focus on entrepreneurship and small firms (Davidsson, 1995). Davidsson (*Ibid*) included a number of general attitudes that previous research suggests may be of importance in this context. This theory assumes that having more or less of these general attitudes exerts a direct influence on conviction, which consequently influences the decision on whether and individual will found a new firm or not (*Ibid*).

i. **Change-orientation**

Change orientation is similar to Ronen’s (1983) argument on “quest for novelty” as a key driver for entrepreneurs (cf. also Wärneryd, 1988). The measure reflects a general positive or negative outlook towards life changes.

ii. **Competitiveness**

According to Lynn (1991), competitiveness emerged as the most important variable in a study of the relationships between national culture and economic growth. This study does not test the level of competitiveness of students as one of the tested antecedents and its relationship to entrepreneurial intentions.

iii. **Valuation of money**

In a study conducted by Lynn (*Ibid*), high valuation of money proved to be the second most important variable, which is the reason for its inclusion here. Bamberger (1986), Cromie (1988) and Hamilton (1988) all argue that the prospect of making more money ranks low as a motivator for entrepreneurs to found a new firm. The measures used for competitiveness and valuation of money are similar to those used in Lynn’s (1991) study.

iv. **Achievement motivation**

Empirical research has over time used and criticised achievement motivation as a psychological concept in entrepreneurship research (cf. Davidsson, 1989, 1991; Wärneryd, 1988).

McClelland (1961) conducted a study which concluded that in the main, achievement motivation does have an influence on one starting a business, but not as a major predictor for entrepreneurial behaviour (*Ibid*). A meta-analysis that was conducted indicates a positive relationship in 20 out of 23 studies using various operationalisations methods of the propensity to take a risk and entrepreneurship (Johnson, 1990, cit. in Shaver and Scott, 1991). According to Davidsson (1995), a positive correlation has been established between competitiveness and achievement motivation, which are similar concepts. However, Davidsson (*Ibid*) argues that they are not similar. Competitiveness relates to comparisons with other individuals, while achievement motivation relates to performance compared to an individual's internal standards (*Ibid*).

v. **Autonomy**

Autonomy refers to the independence of an individual. In many countries, as tested by various scholars, autonomy has continuously shown to be one of the most frequently indicated reasons by individuals for establishing a venture or the reason for the desire to establish one (Bamberger, 1986; Cromie, 1988; Hamilton, 1988; Scheinberg and MacMillan, 1988; Scott and Twomey, 1988).

vi. **Attitude towards entrepreneurship**

Educators and practitioners are positioned to influence entrepreneurial attitudes. In the context of a new venture, Robinson, Stimpson, Huefner and Hunt (1991) argue it is necessary to distinguish between the general attitudes that relate to the broad psychological character of the individual and the domain attitudes, which refers to the person's particular attitude towards entrepreneurship.

Gelard and Saleh (2011) argue that empirical findings indicate that there is a positive relationship between a positive attitude towards entrepreneurship and entrepreneurial intent. This relationship has demonstrated to be unreliable. The inconclusive nature of the results is largely due to a wide distinction in the research context and different methods used to measure both independent and dependent variables that accommodate the context of the university student. Douglas (1999) investigated the relationship between the intention to create a new venture and the person's attitudes toward income, independence, risk, and work effort. The results of the study seem to indicate that individuals with a more positive attitude toward autonomy and risk savvy displayed higher prospects of becoming entrepreneurs. In the same study it was found that people's attitudes to work efforts had a negative correlation to the intention of being self-employed. It was also found that there was no significant difference in regarding attitude towards income (money) (*Ibid*). In contrast to the findings of Douglas, in a study conducted by Wang and Wong (2004), they found an insignificant influence of risk-averse attitudes on entrepreneurial intent.

A survey of university business students conducted by Krueger (2000) found a positive association that supports the theory of planned behaviour. Personal attitudes toward the action of entrepreneurial behaviour and self-efficiency, that is, the act itself is a significant predictor of entrepreneurial intention. In the same study it was found that there is a non-significant influence of perceived social norm on entrepreneurial intent. In a study conducted by Franke and Luthje (2004), which analysed the entrepreneurial desires of students in business courses at two universities in German-speaking countries and one of the leading USA academic institutions, there was evidence of a strong positive relationship between the attitude toward self-employment and entrepreneurial intention.

Luthje and Franke (2003) conducted a study of students in technical disciplines at the Massachusetts Institute of Technology in order to examine the impact of personal characters and predictors of entrepreneurial intention. The results indicate that attitude toward entrepreneurship was the most significant predictor for perceived environmental conditions for starting a new venture.

vii. **Environmental conditions**

Other studies have focused on the environmental conditions as a predictor of individuals' desires to create a new venture. The environment in which students find themselves can provide certain indicators that explain the relationship between personal related factors and entrepreneurial intent (Luthje and Franke, 2003). Therefore, it is within reason to focus on the entrepreneurial process as a rooted process in a social, cultural and economic context.

Previous research has acknowledged the significance of external factors that influence an individual's entrepreneurial interest focused on a person's social networks, the image of society regarding entrepreneurs, socio-cultural norms, and hindrances to entrepreneurship (Autio *et al.*, 1997; Begley, Wee-Liang, Larasati, Rab, Zamora, and Nanayakkara, 1997; Luthje and Franke, 2003). However, empirical studies linking the external conditions for entrepreneurship and the individuals' career choices also provided inconsistent results (Davidsson, 1995).

Raijman (2001) studied the role of social networks that are inherent in the lives of individuals and the extent to which the social networks are predictors of entrepreneurial intent. The results indicate that when the individual has close relatives who are self-employed, this increases the likelihood of the individual becoming self-employed. Begley *et al.* (1997) conducted a study on the influence of four socio-cultural environments of entrepreneurship on business students' interest in becoming entrepreneurs. The study was conducted in seven countries; the conditions that were analysed were importance of work, value of innovation, shame of failure, and status of entrepreneurship in a society. The study found that the social status of entrepreneurship was a good predictor of entrepreneurial intent. The other predictors, namely shame of failure and relevance of work in a society, were found to be insignificant predictors.

In other studies, Raijaman (2001), Begley *et al.* (1997) and Luthje and Franke (2003) found a negative correlation between value of innovation and entrepreneurial intent, that is, individuals who believed innovation was highly regarded were less likely to

want to start a company. Luthje and Franke (2003) demonstrated in the study that students' entrepreneurial intent was also directly affected by perceived barriers related to entrepreneurship and support factors. When students perceive the environment for business founders as hostile or too restrictive, for example, prevalent poor credit conditions, they are less likely to become entrepreneurs irrespective of their attitude toward self-employment.

In another study, Franke and Luthje (2004) studied the influence of the university environment on entrepreneurial intent. Results of that study suggest that where there is negative appraisal for venture creation at the universities, it follows that students will have low EI. While positive appraisal occurs by providing the required knowledge to students and support activities to create new ventures, there will be high EI. A study carried out by Turker, Onvural, Kursunluoglu and Pinar (2005) also investigated the influence of both internal (motivation and self-confidence) and external factors (perceived level of education, opportunities, and support) on entrepreneurial intentions of university students. The results of the study confirmed that both the internal factors (motivation and self-confidence) and one external factor (perceived level of support) were significant predictors of entrepreneurial intent of students.

2.3.1.5. Domain attitudes

viii. Expected payoff

The index of payoff consists of an evaluation of the financial and other rewards of entrepreneurship as weighed against the input costs of workload and the risks borne. This type of operationalisation of beliefs is similar to the explanatory models based on microeconomic utility theory or expectancy theory (Vroom, 1964).

ix. Societal contribution

The second domain is the attitude variable – societal contribution – which relates to the perception of the respondents with regards to entrepreneurial action as a value in society. This dimension is included due to findings that other cultures seem to play a

vital role in promoting venture creation (Scheinberg and MacMillan, 1988; McGrath, MacMillan, Yang and Tsai, 1992). Payoff and societal contribution attitudes relate to the participants' beliefs regarding the realities of the founders of new firms and business owner-managers.

x. **Perceived know-how**

The third domain is the attitude variable – perceived know-how – which relates to the individual concerned. This is a self-assessed measure of the individual to establish if they were to be given an opportunity or had a good business concept; whether they believe that they have sufficient know-how to pursue the opportunity. As pointed out by Shaver and Scott (1991) the influence of exogenous factors such as educational and vicarious work experience are likely to be mediated by variables like perceived know-how.

2.3.1.6. Personal background

Stanworth *et al.* (1989) argue that consistent relationships have been continuously demonstrated between certain personal background variables and entrepreneurial behaviour.

xi. **Gender**

There is generally a substantial over-representation of males among new venture creators in most countries (cf. de Wit and van Winden, 1989, for Swedish evidence). Empirical study has found that there was more than twice the number of nascent entrepreneurs in the male category than in the female category in the US. Matthews and Moser (1995) also found higher entrepreneurial intent among males compared with their female counterparts.

In entrepreneurship research, it appears that there is little learned about the mediators between gender and entrepreneurial intent. Scherer, Brodzinsky and Wiebe (1990) refer to research that has established that women have lower perceptions of self-efficacy for careers in which they have low representation. Davidsson (1995) argues that in the case of women, know-how is the strongest

mediator for conviction compared with the other variables that were included in his study. However, this does not mean that other attitudes such as achievement motivation and competitiveness are not relevant mediators, which can be inferred from the study carried out by Hofstede (1980).

xii. **Entrepreneurial role-models**

Entrepreneurship studies have indicated that apart from the over-representation of males in entrepreneurship, there is also a consistent over representation of individuals who do have close role models. In a study of 600 respondents in the United Kingdom, between 30% and 47% of individuals with entrepreneurial intent, or had started or were about to start their venture, had a father who is or had been in business. In a study conducted by Reynolds (1989), the role model variable was not included. However, other empirical studies have found similar results, for example, de Wit and van Winden (1989). Similarly, other studies highlighted social learning perspectives on entrepreneurship (Boyd and Vozikis, 1994; Krueger, 1994; Krueger and Brazael, 1994; Scherer *et al*, 1989). Not only do role models become an area of interest for scholars, their qualitative aspects of role models also come into play. Scherer *et al* (1989) reported that the presence of a role model influences the level of entrepreneurial preparedness as well as the career path of the individual. Further, it is reported that the role model's perceived performance has a separate influence and enhances the positive influence. Similarly, Krueger (1993) found a positive correlation between perceived "positiveness" of the role model experience and perceived desire for new venture creation.

The role model effect is perceived to be an enabler of the effects of vicarious entrepreneurship experience, which in turn becomes a critical source of self-efficacy (cf. Boyd and Vozikis, 1994). That being the case, role models should have a direct or indirect influence on conviction. Another way to obtain vicarious entrepreneurship experience is to work in a small, owner-managed business. An overwhelming number of individuals' with work experience obtained from small business that is owner-managed have been reported in studies of founders of manufacturing firms.

xiii. **Educational level**

Results from previous studies in relation to the education and entrepreneurship have been fairly mixed (Davidsson, 1989; Storey, 1994). The Swedish results seem to suggest that business founders traditionally had attained lower-than-average formal education. However, as the years progressed, it was found that more recently new business founders have had above average education (Wärneryd, Davidsson and Wahlund, 1987; Aronsson, 1991). Empirical data from the US indicates that people with lower education indicated low entrepreneurial intent or pursuit of entrepreneurship as a career option (Reynolds, 1995; Reynolds and Miller, 1990). It is for this reason that a positive influence of education on entrepreneurial intention is theorised (cf. Campbell, 1992; Wärneryd *et al.*, 1987). The relationship between education and entrepreneurial intent becomes complex because individuals with higher education levels stand a better chance to succeed, and thus accomplish personal goals not only as business owner-managers, but also as employees in other organisations

xiv. **Age**

Finally, previous studies have clearly indicated that age is a critical factor to take into consideration in determining a person's likelihood to create a new venture (cf. Brockhaus, 1982; Reynolds, 1995). Empirical research has continuously proved the relationship between age and entrepreneurial intent peaks around the age of 35 for most individuals (*ibid*). In independent studies conducted by Brockhaus (1982) and Reynolds (1995), age in particular, is clearly indicated as an important factor for determining a person's propensity to found a firm.

Age is one of the exogenous factors that have an influence on entrepreneurial intent. The key question is to understand the extent to which exogenous influences on entrepreneurial intent are direct or indirect. In the present context of entrepreneurship studies this question has two parts. Firstly, to establish if personal background factors (in the context of this study: age, study discipline and

entrepreneurial family background) have any effects on entrepreneurial intention, and secondly, to establish whether an influence on entrepreneurial intention is mediated by attitudes. From a theoretical perspective, it is sensible to assume that the influence of personal background variables is mediated in those ways (cf. Krueger and Carsrud, 1993). This study focuses on the first part of the question in order to establish if personal background has an influence on entrepreneurial intentions.

2.3.2. Conceptual framework

In order to contextualise this study, a conceptual framework derived from the Autio *et al.* (1997) model (as adapted from Davidsson (1995) was developed. In this conceptual framework, EI is the dependent variable and the independent variables for hypothesis 1 (H1) are personal background of students, specifically gender, discipline of study, and entrepreneurial family-members. The independent variables for H2 and H3 concern the FET environment, vis-à-vis the promotion of SME support programmes and the geographical location of FETs, respectively. The independent variables for H4 are the antecedents to EI — general attitudes, entrepreneurial conviction, image of entrepreneurship and FET environment.

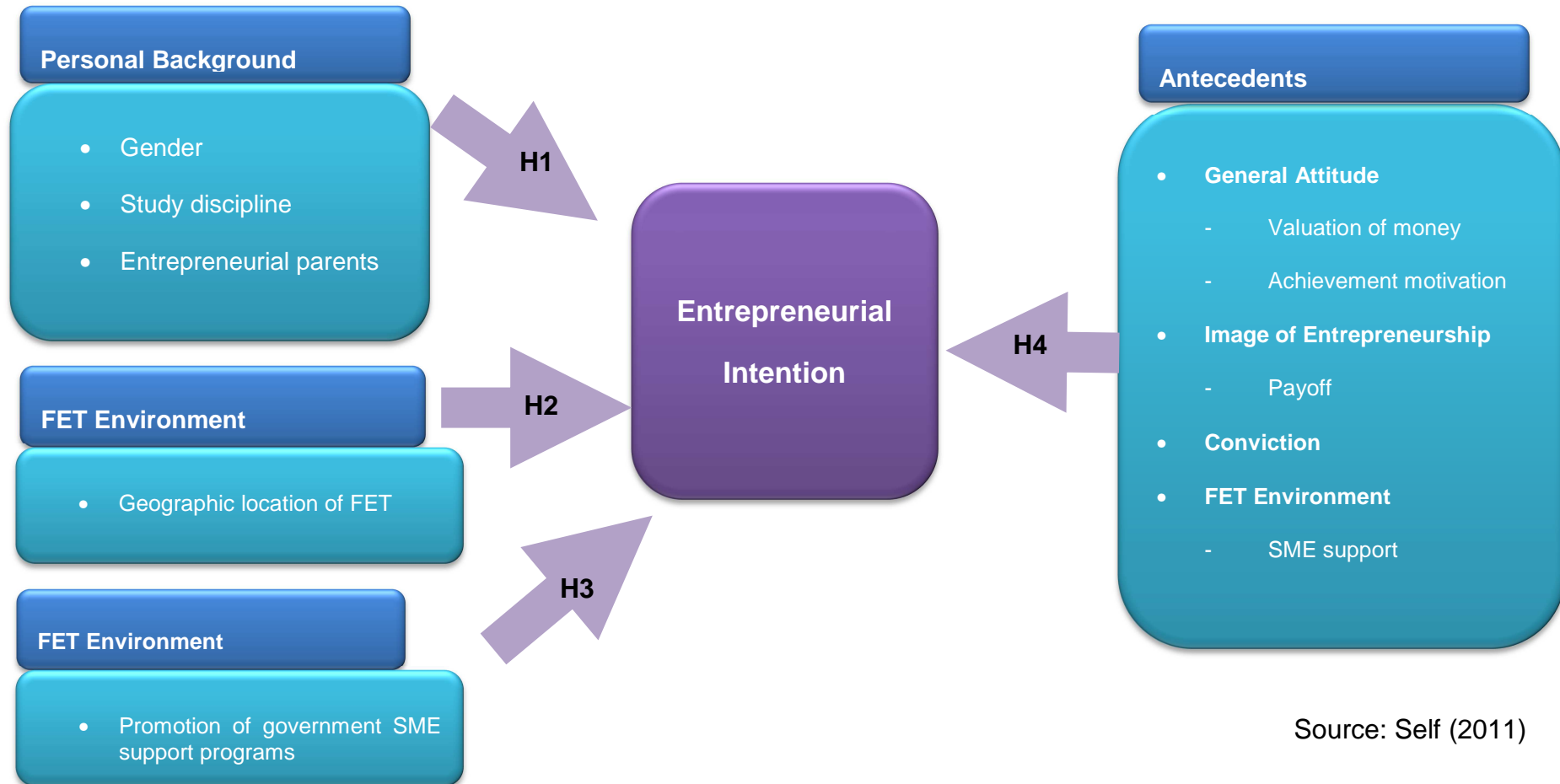
H1 has been further apportioned into three hypotheses: H1(a) tests whether male FET students have higher EI than their female counterparts, while H1(b) tests whether students in entrepreneurial related study disciplines have higher EI than students pursuing technical disciplines. Lastly, H1(c) tests the influence of entrepreneurial family background on EI.

H2 tests the impact on EI that the promotion of SME support programmes at FETs has.

H3 proposes that urban-based FET students have higher EI than their rural and semi-urban (metro-township) counterparts.

H4 tests which of the antecedents has a stronger association with EI, and proposes that conviction does.

Figure 2: Conceptual Framework



Source: Self (2011)

2.3.3. The construct of entrepreneurship

2.3.3.1. Emergence of the study of entrepreneurship

According to van Praag (1999), Richard Cantillon (circa 1680 –1734) was the earliest recorded scientist who made substantial contributions to the study of entrepreneurs. It was around this time that the concept of ‘entrepreneur’ was introduced. Further, there was acknowledgement from his work that there is an entrepreneurial function within the economic system. Ever since Cantillon’s posthumous publication ‘Essai sur la nature du commerce en général’ in 1755, entrepreneurs have been seen and understood to be significant contributors to society’s economic value (*Ibid*). Joseph Schumpeter (circa 1883–1950) emerged later on and did more work in the field of entrepreneurship. Most of Schumpeter’s ideas are echoed in his book *The Theory of Economic Development*, first published in 1911.

2.3.3.2. Definitions of entrepreneurship

According to Schumpeter (1934), an entrepreneur is a change agent. He alludes to an entrepreneur being the idea man and man of action that is involved in the identification process of opportunities. According to Drucker (1985), innovation is the most foundational role exhibited by an entrepreneur. Drucker (*Ibid*) describes innovation as a tool that entrepreneurs use to exploit change. According to Carland, Hoy, Boulton and Carland (1984), an entrepreneur is an individual who initiates and manages a business with the aim to achieve profit and growth.

Venkataraman (1997, p. 120) advances that scholars in entrepreneurship need to investigate how the opportunity identification process works, stating:

Our field is fundamentally concerned with understanding how, in the absence of current markets for future goods and services, these good and services manage to come into existence. Thus, entrepreneurship as a scholarly field seeks to understand how opportunities to bring into existence “future” goods and services are discovered, created, and exploited, by whom, and with what consequence.

According to a study carried out by Sexton and Bowman-Upton (1986), students who opted for entrepreneurship as a major seem more innovative than students in business administration courses. Entrepreneurship encapsulates innovation as a process that turns an invention into a product that can be sold. Therefore, being innovative is more critical and valuable than the invention itself. This trait involves having a business idea, commercialisation, execution of the idea and continuous product modification, resources, and systems (Bird, 1989).

2.3.3.3. Contemporary definitions of entrepreneurship

Contemporary delineations of entrepreneurship research largely focus on the emergence of entrepreneurs (Gartner, 1988; Shane and Venkataraman, 2000). This suggests that entrepreneurship research must deal with various phenomena such as early-stage entrepreneurship, the process of how opportunities are recognised and translated into businesses and lastly how organisations come into existence. Shane and Venkataraman (*Ibid*) argue that entrepreneurship is composed of two linked processes, namely the opportunity recognition process and opportunity exploitation. Thus, entrepreneurship has been defined by Rwigema, Urban and Venter (2008) as a process of conceptualising, mobilising, introducing new products and services and, through innovation, to nurture the opportunity into a potential venture in a multifaceted and uneven environment.

In addition, Rwigema *et al.* (2008) argue that entrepreneurs create and give birth to new technologies, new products and services and create new markets in the process. They further argue that jobs are created along the way. Entrepreneurs are savvy risk-takers, implementers and innovators; they transform the socio-economic landscape by creating and exploiting new opportunities. Entrepreneurship is thus regarded as a:

dynamic process of vision, creation and change. It necessitates an application of vigour and desire towards the implementation of new ideas and creative solutions. Key requirements include the ability to take calculated risks (Kuratko, 2003).

Entrepreneurs have the ability to create and introduce products that thrive in the face of established knowledge thus challenge the status quo in that current reality. They are savvy risk-takers that thrive in pursuing opportunities that many may fail to recognise.

Nicolaides (2011) advances that to enable meaningful transformation in South Africa, there is a need to create an environment that will provide space for creativity and imagination in overhauled policies. South Africa is faced with a multitude of unique challenges including the great need to expedite economic growth. There is a developing need to foster innovation and introduce new creations of products or services into viable economic activities. This environment of significant transformation will create employment in the process (*Ibid*). Increasingly employees in firms are forced to become adaptive in their daily functional roles, which allows employees to be exposed to various skills required for one to manage their own venture. Once individuals believe they have acquired the know-how through training/education, they tend to opt for self-employment. Given the high unemployment levels, promotion and activation of an entrepreneurial culture can to a large extent create the much needed jobs in South Africa (*Ibid*).

2.3.4. Entrepreneurial intentions (EI)

Despite the varying definitions of 'entrepreneurship' and the absence of one universally accepted definition of the term, all the accepted definitions revolve around the notion of starting up or attempting to start up a business (Nabi, Holden and Walmsley, 2006). Intent can be defined as "a state of mind directing a person's attention towards a specific object or a path in order to achieve something" (Vesalainen and Pihkala, 1999, p.73). Entrepreneurial intention therefore can be defined as an individual's decision to start their own venture in the future (Van Gelderen, Brand, van Praag, Bodewes, Poutsma, and van Gils, 2008). Similarly, Bird (1988) states that entrepreneurial intentions can also be defined as the state of mind of an individual that directs the individual toward the concept of venture creation.

According to Urban (2009), without intentions action is unlikely. Further, he argues that an entrepreneurial intention signifies the belief that an individual will execute the behaviour at a later time/date thus meaning that intentions precede action. Urban (*Ibid*) elaborates that the term “entrepreneurial intention” has a similar designation to other terms that are frequently used, for example, entrepreneurial awareness, entrepreneurial potential, aspiring entrepreneurs, entrepreneurial proclivity, entrepreneurial propensity and entrepreneurial orientation. For purposes of this study the term “entrepreneurial intentions” is used.

Delmar and Shane (2001) assert that entrepreneurial ideas are instigated by inspiration; intentions are needed for the idea to come to fruition. Similarly, Krueger, Reilly and Carsrud (2000) argue that one does not start a business merely as a reflex, rather, one does so intentionally. This therefore results in the impact of the entrepreneur’s intention being clearly predominant at the birth of the venture. At this point, external stakeholder influences such as corporate structure, politics, image, and culture are non-existent (Bird, 1988). Consequently, the direction of the new venture at inception is determined by the founder.

According to Bird (*Ibid*), entrepreneurial intention can be defined as the state of mind of an individual directing the person’s attention to opt for self-employment rather than organisational employment. Intention can also be defined as the determination of an individual to execute entrepreneurial behaviour (Liñán and Rodríguez, 2004). It is understood to be the consequence of:

- perceived ability to execute the entrepreneurial behaviour;
- attitude (negative or positive) towards entrepreneurial behaviour; and
- subjective and social norms (the perceptions of others regarding entrepreneurship, the level of motivation and social support systems).

These factors influence the and direct entrepreneurial behaviour of an individual to act entrepreneurially or not. More importantly, these factors can be influenced by ‘exogenous influences’ such as personality characteristics and education (Segal,

Borgia and Schoenfeld, 2005; Liñán, Rodriguez and Rueda-Cantuche, 2005; Souitaris, Zerbinati and Al-Laham, 2007).

Krueger (1993) argues that entrepreneurial intention is an assertion to creating a new venture. According to Rwigema *et al.* (2008), planned behaviour is best predicted through intentions, which includes entrepreneurial intent. According to Krueger *et al.* (2000), scholars divide entrepreneurial intentions into three generic factors:

- (a) the individual's attitude towards entrepreneurial behaviour;
- (b) perceived social norms; and
- (c) the individual's self-efficacy.

Lastly, Crant (1996) defines entrepreneurial intentions as an individual's decision about the probability of owning their own venture. Intention can also be viewed as a sign of an action to be performed in the future or a proactive commitment to bringing future expectations to reality. Intentions and actions consist of different characteristics of a purposeful relation set apart by time; the former depends on plans of action.

2.3.4.1. Antecedents to EI

A variety of factors are considered to be accountable for the foundation of entrepreneurial intention. According to Bird (1988), scholars have clustered these factors into two categories as individual domains and contextual domains. Individual domains are factors inherent to an individual such as demographics, personal characteristics, psychological characteristics, skills set and prior knowledge, personal social networks and social ties. Contextual domains encompass environmental support, environmental influences and organisational factors. However, when these domains are considered in isolation from other factors and not rooted in theoretical frameworks, they become poor entrepreneurial predictors on their own.

Some researchers have used a multi-disciplinary approach and adopted process models/ intention models which widely used psychological studies in order to fill the void (Ajzen and Fishbein, 1980). This approach assumes that certain behaviours are under volitional control. These models advance the notion that behaviour is the best predictor of intention.

2.3.4.2. Variations in EI depending on different fields of study

The 2011 GUESSS report (Sieger *et al.*, 2011) indicates that students studying business management and economics have generally displayed higher EI compared to their counterparts. Among social science students, however, the entrepreneurial intentions were significantly lower. While this study did not perform a similar comparison with students studying technical courses, it did confirm that students pursuing business related studies generally exhibit higher entrepreneurial intentions than their counterparts did. Geographical comparisons among the participating countries ranked South Africa 7th out of 26 countries in the category of business and economics students wanting to found ventures immediately after graduation. In the measure of business and economics students intending to found ventures in 5 years, South Africa was ranked 5th.

2.3.4.3. Variations in EI depending on attitudes towards entrepreneurship.

A study carried out by Raijman (2001) suggested that latent entrepreneurs – individuals who often contemplate starting a venture but did not accomplish it for various reasons – were, nonetheless, more eager to shoulder risk and more prone to thrive on challenges than their non-entrepreneurial counterparts. Despite ultimately not having realised the intention to found firms, these individuals, nonetheless, still valued business ownership more than wage or salary employment. Attitude toward entrepreneurship was found to be the most significant determinant of entrepreneurial intention (Schwarz *et al.*, 2009; Autio *et al.*, 2001). Espousing the same finding, Lüthje and Franke (2003), further outlined that this attitude is influenced by personality traits; specifically, apart from displaying internal locus of control, entrepreneurs were also found to possess a higher propensity towards risk-taking.

A positive personal attitude towards start-ups was found to be a good base on which to ignite entrepreneurial behaviour regardless of the educational background of the students (Wu and Wu, 2008). Hederson and Robertson (2000) argued that the foundational reason indicated by students for starting their own venture was autonomy (to be one's own boss) and money (to make money). Contrary to this, Douglas (1999) and; Douglas and Shepherd (2002) found in their study that attitude towards money does not significantly influence the entrepreneurial intentions of individuals.

2.3.4.4. Variations in EI depending on existence of role models

Researchers have continuously proven that having role models in the family strengthens the entrepreneurial intentions of young adults (Nasurdin, Ramayah and Beng, 2009; Raijman, 2001; Scott and Twomey, 1988; Van Auken, Fry and Stephens, 2006). Raijman (2001) found that individuals with entrepreneurial family background were 2.1 times more likely to have the desire to start a venture than those with no entrepreneurial family background. Critically, close family members who own a venture are likely to be pillars in providing access to relevant information, markets and other relevant information that may be required at the start-up phase (*Ibid*). Parental role models and experiences lead to the formation of perceptions around entrepreneurship (Scott and Twomey, 1988; Scherer *et al.*, 1989). Scherer *et al.* (*Ibid*) revealed that up to 65% of entrepreneurs had had one or both parents as entrepreneurs. More important to note from their studies was that the role model's actual successful/failing performance was not as important.

A father is the most significant family role model who influences the student's desire to own a business (Van Auken *et al.*, 2006). Previous studies also found that siblings provide essential support, information and advice, and act as role models in the decision making and career development process of young adults (Blustein, Fama, White, Ketterson, Schaefer, Schwam *et al.*, 2001; Schulteiss, Kress, Manzi and Glasscock, 2001; Schultheiss, Palma, Predragovich, and Glasscock, 2002). A study carried out in Malaysia by Nasurdin *et al.* (2009) suggested that the existence of 'successful' entrepreneurs among family members was positively related to

entrepreneurial intention. They also proposed that the number of role models (family, friends or colleagues) was positively related to entrepreneurial intention. Contrary to previous studies, however, Franco, Haase and Lautenschläger (2010) found that the students' social background (i.e. having entrepreneurs in the family or among friends) had no significant impact on the entrepreneurial intention of students.

2.3.4.5. Variations in EI depending on self-efficacy

Self-efficacy has been found to be one of the most significant contributors to entrepreneurial intention (Davidsson, 1995; Krueger and Brazeal, 1994). Considering this, educational settings (in this study, FETs) are fertile ground as they are hubs of students and present an opportunity to develop perceived self-efficacy through, inter alia, involvement in student social networks such as associations, evaluation of work in and out of class, and evaluation by peers. All of these factors contribute to how the individuals perceive themselves and whether if they are capable of being successful entrepreneurs or not. The GEM 2004 report (Herrington, Orford and Wood, 2004) noted that individuals who were confident that they possessed the skills to start a new venture were four to six times more likely to engage in entrepreneurial activity.

Initially, studies pertaining to entrepreneurial intentions were based on two concepts; namely the theory of planned behaviour (Ajzen, 1987), and Shapero's entrepreneurial event (Shapero, 1982). Later, these models were remodelled and adjusted by other researchers to allow them to be adaptive to other characteristics and environments such as those more applicable to students. The Autio *et al*, (1997) model that is used in this study draws on TPB with certain modifications to accommodate the unique characteristics that apply to students.

2.3.4.6. EI Models

According to Guerrero, Rialp and Urbano (2008), there are six key models that have been developed in entrepreneurship studies. They are:

1. Shapero (1982) conceptualised the entrepreneurial event model. This model considers venture creation as an event of interactions between initiatives, abilities, management, relative autonomy and risk.
2. Ajzen (1991) developed the theory of planned behaviour (TPB). This model is primarily based on the notion that planning can be predicted by intention for an individual to adopt the behaviour.
3. Robinson *et al.* (1991) introduced the entrepreneurial attitude orientation model. The model was designed to explain which of the different attitudes predict venture creation. This was performed by identifying four different subscales (achievement, self-esteem, personal control, and innovation) and three categories of reactions (affective, cognitive or conative).
4. Krueger and Carsrud (1993) introduced the intentional basic model. This model examines the relationship between attitudes and entrepreneurial intentions. The concept utilises a scale that allows flexibility in the analysis of exogenous influences, attitudes and intentions.
5. Krueger and Brazeal (1994) conceptualised the entrepreneurial potential model. The foundation of this model was based on the Shapero (1982) and Ajzen (1991) models to support their evidence from the corporate venture and enterprise development perspectives.
6. Lastly, Davidsson (1995), in his model popularly known as Davidsson's model, conceptualised that conviction defined by general attitudes, domain attitudes and the current conditions, can influence intention.

Entrepreneurial action is an intrinsic part of intentional behaviour (Shapero, 1982; Bird, 1988). Shapero's model (Shapero, 1975 and 1982; Shapero and Sokol, 1982) remained unchallenged until Krueger's (1993) study. Shapero proposed that the term intent to start a business was coined as the perception of both desirability and feasibility as well as the likelihood to exploit opportunities. Krueger (1993) focused on measuring the influence of entrepreneurial background on intention, that is,

exposure, through the perceptions of feasibility and desirability. Krueger (*Ibid*) categorised Shapero's exogenous influence, which relates to entrepreneurial experience, into two categories, namely the positiveness and the breadth of entrepreneurial experience.

xv. **Theory of planned behaviour**

One of the ways to establish whether the individuals will start a new firm is by studying the entrepreneurial process of applying the theory of planned behaviour according to Ajzen and Fishbein (1980), Ajzen (1987 and 1991), and Kim and Hunter (1993). In this study, the focus of the theory falls on entrepreneurial intentions (Shapero, 1982; Bird, 1988; Krueger, 1993) and the argument for using this approach is that intentions are the single most vigorous predictor of planned behaviour, in this case, for starting a new business (Ajzen, 1991; Krueger, 1993). This focus takes a view that directs attention toward the realisation of entrepreneurial ideas, away from entrepreneurial characters and contexts (Bird, 1988).

According to the theory of planned behaviour, the individual's attitudes have a direct impact on behaviour. This impact occurs via intention. More specifically, there are three key attitudinal antecedents of intention. They are personal attitude toward outcomes of the behaviour, perceived social norms, and perceived behavioural control (self-efficacy). These antecedents have been proven to account for a large component of the variance in intentions (Fishbein and Ajzen, 1975). Further, attitudes are well-defined as a learned inclination to respond in a manner that is favourable or not with regard to a given object in question (*Ibid*). Robinson *et al.* (1991) maintain that attitudes are less stable than personal characteristics.

TPB suggests three conceptually independent antecedents of intention (Ajzen and Fishbein, 1980; Ajzen, 1987; Ajzen, 1991):

- Firstly, the attitude toward a specific behaviour. This refers to the degree to which a person has a favourable appraisal or lack thereof of the behaviour in question.

- Secondly, the predictor of intention is a subjective norm. This refers to perceived social pressure to perform a specific behaviour.
- Thirdly, the degree of perceived behavioural control. This refers to the perceived ease of performing the specific behaviour which reflects past experience as well as anticipated obstructions and complications.

The more positive the attitude and subjective norm in relation to the specific the behaviour, and the higher the perceived behavioural control, the greater the propensity of the intention to perform the behaviour would be.

xvi. **Davidsson's model**

Richer and fresher models were tested by Davidsson (1995) and Reitan (1996). Davidsson conceptualised an economic–psychological model of factors prompting individuals' intentions to start a venture for themselves. The model established by Davidsson (1995) used as its foundation a combination of components of previously published models, as well as making adjustments to the model to be more directed and suited to the study of entrepreneurial intention. A major shift compared to previous models was the key role of conviction as a primary predictor of entrepreneurial intention. In Davidsson's model, general attitudes and domain attitudes are influenced by personal background variables. A positive influence will give rise to conviction of entrepreneurship as a possible career option. In developing this construct, Davidsson combined three constructs by Ajzen's model, self-efficacy, subjective norm, and attitude toward the behaviour. The result of the model after being tested on a random sample of 1313 Swedes between the ages of 35 and 40, it was found largely to be supportive of the relationship as put forward by Davidsson.

xvii. **Negative criticism levelled at some of the EI models**

The Theory of Planned Behaviour (TPB) and Theory of Reasoned Action (TRA) have successfully proved their strength in entrepreneurship research. However, both have been criticised immensely by various scholars such as Bagozzi and Warshaw (1994); and Bagozzi (1992). These scholars argue that TRA applies only to cases

where the behaviour is assumed to be under the individual's control. On the other hand, TPB applies where behaviour is under partial volitional control by the individual. Liska (1984) interrogated the theories by asking whether action can be partially controlled and partially uncontrollable. Bagozzi and Warshaw (1990) opined that these theories must be viewed as a process intended to achieve an objective. In TRA and TPB, action is the dependent variable thus viewed as a single and final performance. It is important to note that this study does not focus on TRA as a conceptual framework even though it is linked to TPB; instead, the study focuses on TPB as a base for the conceptual framework.

2.3.4.7. Opportunity recognition

According to Ardichvili, Cardozo and Ray (2003), there are four major factors that influence the process of opportunity recognition and development. These are:

- entrepreneurial alertness (entrepreneurial intentions);
- information asymmetry and prior knowledge;
- accidental discovery versus systematic search; and
- social networks and personality characteristics.

According to Kirzner (1973), "alertness" is a term used to describe entrepreneurial recognition of opportunities. Kirzner (*Ibid*) calls it a likelihood or tendency to recognise and be sensitive to information about things, developments and patterns of behaviour in the environment with special sensitivity to creatively use problems, unmet needs and interests, and novel combinations of resources. Thus, it is proposed that opportunity recognition/ alertness is likely to be high when personality traits (namely, creativity and optimism), relevant prior knowledge/ experience and social networks meet coincidentally. Research indicates that individuals who recognise or identify good business opportunities are three times more likely to engage in entrepreneurial activity (Herrington *et al.*, 2004).

2.3.4.8. An assessment of entrepreneurial intentions in SA

The 2011 GUESSS report (Sieger *et al.*, 2011) in which 26 countries, including South Africa, participated found that, worldwide, most students (more than two thirds of the respondents) prefer organisational employment directly after studies. Starting and owning a venture directly after studies is the aim of less than 5% of all students. However, less than 40% strive for organisational employment five years after their completion of studies; 21.6% intend to found an own company within that time frame.

In the same report 2011 GUESSS report (*Ibid*), it was found that a large number of South African respondents (70.6%) have wishful intentions to establish an own venture. This percentage is substantially higher than the percentage of students in the international sample (42.1%). It is important to note that the sample of students taken for the South African GUESSS study did not include FETs or students undertaking any technical courses. Table 1 below indicates South African students with entrepreneurial intentions compared to their international counterparts.

Table 1: Student founder types

Founding type	South African students		International students	
	N	%	N	%
Non-founders	188	27.0	51 661	55.4
Intentional founders	492	70.6	39 280	42.1
Active founders	17	2.4	2 324	2.5
Total	697	100	93 265	100

Source: (Sieger *et al.*, 2011)

Attitudes and perceptions towards entrepreneurship exert an influence on the development of an entrepreneurial culture. According to Kelley *et al.* (2011), South Africa rates below average for all the attitude and perceptions indicators. The report indicates that in terms of both perceived capabilities and entrepreneurial intentions, South Africa ranks in the bottom third of all efficiency-driven economies; however, it is encouraging to note that South Africa improved its score in every category assessed when comparing the GEM 2009 (Herrington, Kew and Kew, 2009) and GEM 2011 (Kelley, Singer and Herrington, 2012) surveys.

Table 2 below indicates the entrepreneurial attitudes among South Africans and also compares the results between the GEM 2009 (Herrington *et al.*, 2009) and 2010 (Kelley *et al.*, 2011) findings. It is important to note that the entrepreneurial attitudes measured by GEM are not those of students, but rather overall attitudes of South Africans towards entrepreneurship.

Table 2: Entrepreneurial attitudes and perceptions in SA – 2009 and 2010

	2009	2010
Perceive good business opportunities	35%	41%
Believe they have entrepreneurial capabilities	35%	44%
Have entrepreneurial intentions	11%	17%
See entrepreneurship as a good career choice	64%	77%
Believe successful entrepreneurs have high status	64%	78%

Source: Kelley *et al.*, 2011

Conviction is the foundational explanation for, and determinant of, entrepreneurial intentions. Researching the influence that attitudes have on intention for venture creation, it was reported that the intention to be an entrepreneur is stronger in the individuals with a more positive attitude towards risk and autonomy (Douglas and Sheperd, 2002). Entrepreneurial intentions are a consequence of motivation and awareness; the latter includes intellect, ability and skills (Rwigema *et al*, 2008).

2.3.4.9. The role of education in entrepreneurial intentions

Within the human capital theory, a positive relationship between education and business success has been empirically well-established by Rauch and Frese (2000). As one component of human capital, formal education remains a key method of accumulating the explicit knowledge and skills that prove to be useful in enabling entrepreneurs to better identify opportunities, make informed decisions and generally to be more successful (Cooper, Gimeno-Gascon, and Woo, 1994).

xviii. Importance of entrepreneurship education

According to Mansor and Othman (2011), understanding the importance of entrepreneurship education (EE), internationally, a large number of universities include entrepreneurship education in their curricula. To develop an entrepreneurial nation can never be a quick and short process. Further, Mansor and Othman (*Ibid*) argue that an enterprising culture needs to be instilled at an early age. This can be carried out through the education system at all levels. It is also critical to simultaneously develop awareness amongst parents and communities at large that entrepreneurship is an honourable and rewarding career option. In FET courses, the studies of business management and technical courses are independent of each other. In order to bridge the gap, it therefore, becomes important to find new ways to aggressively introduce and integrate entrepreneurial education in higher education curricula in South Africa.

Scholars have argued that through Universities, entrepreneurial education can be promoted as these institutions play a functional role in developing regional and society economies (Binks, Starkey and Christopher, 2006; Co and Mitchell 2006). In

agreement with this assertion Mahlberg (1996), further states that educational institutions are ideally placed to shape entrepreneurial cultures and aspirations among students, while they equip students to survive in today's vigorous business environment (Autio *et al.*, 1997; Landstrom, 2005). Universities are hubs of entrepreneurship that present an opportunity to teach students ways to think and behave entrepreneurially (Bygrave, 2004). Universities, in this respect, should place themselves as entrepreneurial hubs that create an environment that contributes to entrepreneurship development (Gnyawali and Fogel, 1994). Although the research quoted above relates to universities specifically, it is not unreasonable to extrapolate the same concepts to be applicable to other higher education institutions, including FETs in South Africa.

xix. **Career paths based on study discipline**

According to Lee and Wong (2004), learners studying business related courses are usually the ones exposed to entrepreneurial studies, whereas ironically, it is the non-business course students who typically found new ventures, while their business-school counterparts chose to be employed. Individuals who have acquired technical skills are potential entrepreneurs; they are popularly known as technological entrepreneurs or 'technopreneurs' (*Ibid*). Evaluating regional transformation through technological entrepreneurship, Venkataraman (2004) arrives at a conclusion that universities that adopt modern economic principles have become incubators for innovative ideas. Therefore, it is not accidental that the areas around Boston and Silicon Valley (in the United States of America) have produced ground-breaking innovations over the years. This was achieved through exploring alternative methods in university based entrepreneurial education.

xx. **Higher education institutions as regional innovation systems**

Laukkanen (2000) argues in favour of universities being conceptualised as a regional innovation system that produces entrepreneurially oriented individuals, and is able to replicate the social mechanisms that buttress and facilitate SME-development. The evolutionary regional model is proficient in endogenous self-sustaining survival and

growth within the communities that it impacts. In order for institutions to facilitate a supportive environment for entrepreneurship, according to Urban (2006), there is a need for dedicated resources at higher education institutions for both business and non-business (including technical) students. These resources should encompass the introduction of chairs in entrepreneurship and the establishment of entrepreneurial resource centres. This approach will inculcate a mind-set that encourages an enterprising culture that results in developing employers rather than employees. This exposure will enhance students' exposure to the SMME sector through extended internships, innovation hubs, and broader SMME support networks with community links (*Ibid*). Even though FETs may not necessarily possess the resources for research facilities and that level of know-how, they do constitute a hub of technical students who can be equipped with entrepreneurial education to develop a new enterprising culture.

Once universities engage in activities that develop and support entrepreneurship, it “triggers” the student's desire to become entrepreneurs, thus stimulating new venture creation (Franke and Lüthje, 2004). Schwarz *et al.* (2009) found that a perceived positive environment of university engagement in entrepreneurial activities to foster entrepreneurship, results in the higher propensity of students to desire to start a venture in the future.

University courses on new venture creation together with incubators located on campus have demonstrated to be key to developing student desire and enthusiasm to owning a venture (Schwarz *et al.*, 2009). Previous studies also revealed that a perceived supportive university environment also has an influence on the desires of students to start a venture in the future (Autio *et al.*, 1997; Turker and Selcuk, 2009). Turker and Selcuk (*Ibid*) argue that when universities provided entrepreneurial knowledge and support to inspire students, the likelihood of pursuing entrepreneurship as a viable career option heightens. Clark, Davis and Hamish (1984) conducted a study at medium sized American universities and found that approximately 80% of students who had registered for foundational courses in entrepreneurship had a desire to start their own business. Interestingly, 76% of those

students believe that entrepreneurial courses had a high influence on their desires to start a venture. Lastly, these students believe that the lecturers delivered sufficient knowledge and skills that prepared them to be entrepreneurs (Lüthje and Franke, 2002).

Scholars such as Fiet (2001), Segal *et al.* (2005), and Wilson, Kickul and Marlino (2007) have conducted empirical research to establish the relationship between education and self-efficacy of students. Thither they established that education supports and encourages them to start their own ventures. Education enhances the efficacy of students who consequently become more alert, mobilise resources more efficiently and have a higher propensity to succeed in their venture (Wilson *et al.*, 2007). According to Fiet (2001), practical learning activities that are educational have a positive influence on the entrepreneurial efficacy of students. These learning activities should relate to business plan development and students running their own small businesses (Segal, *et al.*, 2005).

A purposeful driven education that allows students to participate in tasks that promote opportunity recognition, mobilising resources and running their own businesses also enhances students' entrepreneurial efficacy (Wilson *et al.*, 2007). Additionally, Segal *et al.* (2005), as well as Fiet (2001) argue that education enhances entrepreneurial efficacy when there are role models, hands-on support for their venture and business plan development.

xxi. **Influence patterns among entrepreneurial intention, entrepreneurial self-efficacy and entrepreneurial learning behaviour**

Chou, Shen, & Hsiao (2011) found that students' entrepreneurial intention has a significant direct effect on entrepreneurial learning behaviour, and entrepreneurial self-efficacy has a significant effect on entrepreneurial learning behaviour through entrepreneurial intention. The influence pattern and empirical data of entrepreneurial self-efficacy and entrepreneurial intention on entrepreneurial learning behaviour, therefore, has a good fit.

Furthermore, Chou *et al.* (*Ibid*) indicate that for technological and vocational school students, the influence of entrepreneurial self-efficacy on entrepreneurial learning behaviour comes mainly through their awareness of entrepreneurial intention. In addition, entrepreneurial intention has a direct and significant effect on entrepreneurial learning behaviour.

Influence of entrepreneurial intention, entrepreneurial self-efficacy and entrepreneurial learning behaviour, clearly indicates that compared with entrepreneurial self-efficacy, entrepreneurial intention exerts a greater influence on entrepreneurial learning behaviour (Wilson *et al.*, 2007; Dyer, Gregersen and Christnesen, 2008; Mars and Garrison, 2009; Kristiansen and Indarti, 2004). Through education, students are involved in various entrepreneurial activities, through which they discover the advantages, values and merits of entrepreneurship, which in turn increases their entrepreneurial efficacy and their desire for self-employment (Segal *et al.*, 2005). Heightened entrepreneurial efficacy is linked to higher levels of the resilience and persistence that are often needed in the pursuit of entrepreneurship; students are able to put in the protracted, sustained effort to overcome emerging challenges (Shane, Locke and Collins, 2003). In addition, higher entrepreneurial efficacy is associated with higher intentions to become an entrepreneur (Segal *et al.*, 2005).

xxii. **Entrepreneurial self-efficacy**

In a study consisting of entrepreneurship, management and organisational psychology students, Chen, Greene and Crick (1998) tested the impact that entrepreneurship education and training plays in developing entrepreneurial self-efficacy (ESE). Self-efficacy, in general, refers to an individual's own perception of his/her abilities and competence. ESE is, therefore, an important antecedent to EI since it affects the extent to which individuals can recognise opportunities around them, which in turn depends on the extent to which they perceive themselves to be capable of steering the course of action necessary to realise those potential opportunities. The authors concluded that entrepreneurial education and training does indeed result in ESE, and thus the intentions to found new ventures. This is

similar to Krueger and Brazeal's (1994) findings that by increasing their self-confidence, general knowledge and self-efficacy, entrepreneurship education increases students' perceptions of the feasibility of pursuing entrepreneurship.

Self-efficacy is also central to Rae and Carswell's (2000) model explaining the influence of education in raising the entrepreneurial proficiencies of students. They discovered that experiential learning, relations and personal theory are effective in building the self-confidence and self-belief of entrepreneurs; self-efficacy, therefore, increases over time as entrepreneurs learn from their experiences.

Zhao, Seibert and Hills (2005) refer to ESE as a mediator between exposure to entrepreneurship training and EI. Their assertion is that rather than focusing purely on imparting technical knowledge, entrepreneurship training must equally focus on developing the self-confidence of potential entrepreneurs in order for EI to emerge.

Although Luthje and Franke (2003) concede that some higher-learning institutions seem to produce entrepreneurial students; however, they caution against drawing the conclusion that it is those university contexts that lead to the development of entrepreneurship, whereas it could easily be attributable to intrinsic personality traits. As Scott and Twomey (1988) point out, without a clear understanding of the interplay of these factors, it is, therefore, difficult for policy makers to design programmes that can effectively develop entrepreneurship.

xxiii. **Integrating entrepreneurship education within higher education curricula**

Human capital consists of formal education, experiential on-the-job learning and informal education and training that take place outside traditional educational structures. Experiences in the broad labour market as well as experiences tailor made for specific vocations are therefore expected to increase human capital (Becker, 1975). In South Africa, FETs largely offer vocational training, which includes practical experience, and as such they are well-positioned to increase human capital which in turn will influence entrepreneurial intentions. Despite mixed empirical evidence (Davidsson, 1989) previous managerial experience and general experience

in the labour market have been shown to be significantly related to entrepreneurial activity (Bates, 1995; Gimeno, Folta, Cooper and Woo, 1997; Robinson and Sexton, 1994).

Higher education knowledge facilities such as FETs are perfectly positioned to accomplish the tasks of imparting knowledge, to shape and encourage entrepreneurial intentions. Entrepreneurship education has to be integrated into learning programmes instead of being treated as an independent field of study. In order to efficiently and effectively address the shortage of entrepreneurs, and contribute to the support of government policies on job creation in South Africa, tertiary institutions must provide a framework for a new curriculum planning and development that would instil some entrepreneurial skills within the tertiary education learning system. The extent to which people are able to recognise potentially lucrative opportunities (Shane, 2000; Simon, Houghton and Savelli, 2003), evaluate and further develop these into final products and services depends largely on how knowledgeable these individuals are (Ravasi and Turati, 2005).

In contrast, individuals with limited cognitive abilities and a lack of knowledge about specialised fields are often barred by these circumstances from identifying certain opportunities (Shane, 2000). Possessing relevant knowledge allows business owners the ability to navigate more successfully through ambiguity and uncertainty and make better, more-informed decisions despite the circumstances (Minniti and Bygrave, 2001; Reuber and Fischer, 1999)

2.3.5. *Factors constraining entrepreneurship in South Africa*

The GEM 2010 report (Kelley *et al.*, 2011) which, it is important to note, sampled the general population and not only students, indicates certain key factors that constrain entrepreneurship in South Africa. These were assessed by experts in the field of entrepreneurship and are summarised in table 3.

Table 3: Key factors constraining entrepreneurship in SA

Category	Expert Respondents citing this factor	
	SA Experts	GEM Experts
Education and training	53%	29%
Government policies	53%	44%
Financial support	42%	54%
Government programmes	28%	13%
Capacity for entrepreneurship	19%	11%
Market openness	19%	10%

Source: Kelley *et al.*, 2011

2.3.5.1. Education and training and capacity for entrepreneurship

Entrepreneurship education is the transmission of codified knowledge and entrepreneurial skills through formal and informal education. If entrepreneurial and enterprising behaviour among young people is to emerge, a stronger focus must be placed on entrepreneurship education (Blokker and Dallango, 2008) and methodologies that encourage learning by doing and just-in-time learning (Gibb, 2002). Schoof (2006) positions entrepreneurship education as a method by which to empower young people with entrepreneurial skills and attitudes beyond merely fostering youth entrepreneurship.

A broad variety of researchers and practitioners view entrepreneurship and entrepreneurship education from different angles and through specific lenses (e.g. Bouchikhi, 2003; Fayolle, 2004). Fayolle, (2004) and Fayolle and Senicourt (2005) indicate that entrepreneurship and entrepreneurship education is evident (and defined) on different levels:

- Entrepreneurship is a matter of culture (from an institutional point of view) or a matter of state of mind (from an individual point of view). This means that entrepreneurship education is helpful to create an entrepreneurial culture within countries, societies, firms, associations, and so on, and/or to change the mind-sets of individuals. Culture and state of mind could be mainly approached in terms of values, beliefs and attitudes.
- Entrepreneurship is also a matter of behaviours. Organisations and individuals can develop entrepreneurial behaviours such as opportunity orientation, commitment to opportunity orientation and commitment of resources as described by Stevenson, or those suggested through the concept of entrepreneurial orientation (Lumpkin and Dess, 1996).
- Entrepreneurship is a matter of specific situations including change, uncertainty and complexity such as new venture creation, corporate venturing, acquiring existing businesses, etc. All of these require entrepreneurial behaviours such as those previously espoused, and entrepreneurial competencies in relation to the features of these specific situations.

Both individual and organisational dimensions have to be considered on each level. As Kirby (2007) suggests, the traditional entrepreneurship education paradigm has focused on new venture creation, with the objective to generate more quickly a greater variety of different ideas for how to exploit a business opportunity and project a more extensive sequence of actions for entering business. In this paradigm, the aim of entrepreneurship education is to teach students to start their own businesses, which is a concept of teaching entrepreneurship that mainly focuses on the third level (specific situations). Gibb (2002; 2004) alternatively proposes a

'modern' paradigm in entrepreneurship education which deals more with the first (culture, state of mind) and the second (behaviours) levels.

2.3.5.2. Government policies and Financial support

Business development services and support for youths in business or those interested in pursuing entrepreneurial careers is critical. Through the start-up and post start-up phases of business development, there is a need for specific training in business and entrepreneurial skills. All of the authors, who underlined the need for financial support, also identified the lack of specific support for young people, vis-a-vis administrative and legal knowledge of how to run a business on a daily basis, how to devise a business plan, and so forth (eg Llisterri, Mantis, Angelelli and Tejerin, 2006; Blokker and Dallago, 2008; James–Wilson and Hall, 2006; Owualah, 1999).

The National Development Plan (NDP), vision for 2030, places an emphasis on consolidating and strengthening small-business support services (NPC, 2011). Through the DTI and its agencies, the SA government has various SMME support programmes, some of which are directed specifically towards improving young people's participation in entrepreneurship and improving the youth entrepreneurship culture. These programmes, typically executed by the NYDA, SEDA and Khula, offer both funding and non-financial support such as business plan preparation, financial management and marketing support to entrepreneurs under 35 years of age. The low uptake of entrepreneurial programmes by students and other young entrepreneurs could possibly be attributed to a lack of knowledge about these institutions and their available programmes. The 2010 GEM report (Kelley *et al.*, 2011) made a recommendation that government programmes must focus on providing assistance with that first step.

2.3.6. Human capital theory

Human capital theory asserts that expanding the individual knowledge pool provides entrepreneurs with efficient and effective cognitive abilities, leading to more

productive and efficient potential entrepreneurial activity (Schultz, 1959; Becker, 1975; Mincer, 1974). Lucas (1988) has identified human capital, which consists of knowledge, education and work experience, as the primary source of economic growth. Other studies include social capital among the human capital variables (Shane and Eckhardt, 2003). This report focuses on education as one of the key predictors of entrepreneurial intentions.

Individuals with higher human capital achieve higher levels of performance when accomplishing tasks (Becker, 1975). Human capital can be thought of as a reservoir of skills and knowledge that reside within an individual; it comprises the unique insights and skills, characteristics and talents (Venkataraman, 1997) that are accumulated through life experiences. Depending on their nature and effectiveness, such attributes and habits can exert either positive or negative impact on productivity (Becker, 1975). Human capital is therefore not homogenous and is central to understanding why some individuals can identify and exploit an opportunity that is quite lost on others (Shane and Venkataraman, 2000).

Becker (1975) distinguishes between general human capital, which is generic and transferable across different contexts (e.g. different industries and firms), and specific human capital, which is exclusively applicable to given activities such as product development. Family background, education, gender and age are examples of general human capital, while specific human capital encapsulates prior knowledge, experience and industry-specific knowledge.

There are suggestions that social capital also forms part of human capital (Shane and Eckhardt, 2003), because it is so vital to the process of entrepreneurship. Its centrality to entrepreneurship is due to social capital being able to facilitate access to financial, human and other resources that are necessary to begin a business. The larger social networks in which they exist and the people with whom they have social links can directly affect nascent entrepreneurs' access to financial, social and emotional support. According to the researchers, without the right social networks the would-be entrepreneur could still fail to capitalise on identified opportunities (*Ibid*).

2.4. Foundation of Hypotheses

2.4.1. *Personal background and EI (H1)*

2.4.1.1. *Education*

Entrepreneurship education is the transmission of codified knowledge and entrepreneurial skills through formal and informal education. If entrepreneurial and enterprising behaviour among young people is to emerge, greater focus must be placed on entrepreneurship education (Blokker and Dallango, 2008) and methodologies that encourage “learning by doing” and “just in time learning” (Gibb, 2002). Thus, beyond fostering youth entrepreneurship, entrepreneurship education equips young people with entrepreneurial attitudes and skills (Schoof, 2006).

2.4.1.2. *Gender*

Even when respondents share similarities in backgrounds, it has been found that men exhibit a higher inclination towards business foundation than their female counterparts (Brush, 1992). Numerous studies have highlighted the additional difficulties that females face in the process of creating business ventures, particularly in relation to raising capital for start-up or expansion (Fay and Williams, 1993; Becker-Blease and Sohl, 2007). Boden and Nucci (2000) have also demonstrated that would-be female entrepreneurs have lower human capital in comparison to their male cohorts.

Perhaps unsurprisingly then, numerous studies in different countries have revealed that ventures owned by women face slower rates of growth, lower profits, and lower sales than those owned by males (Brush, Carter, Gatewood, Greene and Hart, 2006; Welter, Smallbone and Isakova, 2006). In fact, studies have found that, at the outset, gender stereotypes such as the generally held association of entrepreneurship with masculinity (Ahl, 2006; Lewis, 2006) influence the intentions of men and women to pursue entrepreneurship differently, with women often discouraged by this phenomenon (Gupta, Turban and Bhawe, 2008).

2.4.1.3. Entrepreneurial family history

The impact that having entrepreneurial parents has in raising the entrepreneurial intentions of offspring has received considerable attention in entrepreneurship literature. Numerous researchers (e.g. Crant, 1996; Dyer, 1992; Roberts and Wainer, 1968) have found that entrepreneurs were often raised by self-employed parents. It is for this reason that exposure to entrepreneurship often emerges as a central theme in various models of entrepreneurial intentions (Krueger, 1993; Shapero and Sokol, 1982). The suggestion is that through family exposure, offspring are socialised to perceive the feasibility and desirability of self-employment. In a study of university business students, Krueger (1993) found that it was the breadth of exposure that influenced perceived feasibility, while the perceived positiveness of the entrepreneurial experience affected perceived desirability.

Hypothesis 1

Personal background variables of FET students such as gender, discipline of study and family members who are entrepreneurs, have a positive correlation with entrepreneurial intentions.

H1 (a)

Male FET students have higher entrepreneurial intentions than female FET students.

H1 (b)

Students exposed to FET entrepreneurial-related studies have higher entrepreneurial intentions than those in FET technical courses.

H1 (c)

Students who have entrepreneurial family-members have higher entrepreneurial intentions than students who have non-entrepreneurial family members.

2.4.2. Promotion of entrepreneurship and EI (H2)

The South African government has committed and continues to commit to youth entrepreneurship, in particular, to support student entrepreneurship (Fatoki, 2010). Given that these young entrepreneurs do not have funding to start their own ventures, government involvement in creating an enabling environment for students remains critical. Fatoki (*Ibid*) notes that there are agencies that have been set up to primarily support youth entrepreneurship. However, he argues that entrepreneurs are not aware of these programmes. Maas Herrington (2006) further argues that there is insufficient information that relates to the support programmes and more importantly little is known about the available products and procedures in order to gain access to them. As a result, there is a perception that in South Africa there is no government support for potential entrepreneurs (*Ibid*).

Schwarz *et al.* (2009) reported a positive correlation between perceived university support and desire to start a venture in future by students. They also found that the only predictor for intent that emerges was university environment. Luthje and Franke (2003) indicate that when students perceive the university to have a hostile environment, and thus no entrepreneurial support, the propensity of the students to take up entrepreneurship as a career becomes low. This notion is drawn from the positive correlation between entrepreneurial intent and the supportive environment. Franke and Luthje (2004) conducted another study to determine if entrepreneurial intent is influenced by the university environment. The findings indicate that when the environment is perceived to have a negative appraisal there will be low propensity for new venture creation.

Keat, Selvarajah and Meyer (2011) argue that universities must do their best to create an enabling environment that is supportive of entrepreneurship through providing entrepreneurship training programmes. Autio *et al.* (1997) concluded that student's perceptions towards entrepreneurship are highly affected by university offerings. Thus it becomes critical to create a supportive environment at universities that will create a positive image of entrepreneurship for students. Alberti, Sciascio and Poli (2004) argue that even if individuals may have relevant entrepreneurial

knowledge and skills, when they uphold a negative image on entrepreneurship they are likely not to opt for self-employment.

Hypothesis 2

The promotion of entrepreneurship at FETs through exposure to government SMME support programmes has a positive effect on entrepreneurial intentions.

2.4.3 FET geographic environment and EI (H3)

According to Shapero and Sokol (1982), there is a distinction between the entrepreneurial event and the entrepreneur. They argue and focus on the occurrence of the entrepreneurial event as being distinct from the individuals behind it. They put forward a model explaining how group membership and the social as well as the cultural environment affect the entrepreneurial event. They argue that social and cultural environments determine which action will be taken by an individual; in this case, if they desire to start their own venture and more importantly if the individual perceives the action as feasible they will do so (*Ibid*).

Efficacy developed through the educational environment is crucial for student development and may be achieved through

- participation in various entrepreneurial activities (*Ibid*);
- enhancing their desire to opt for starting their business by promoting the potential value and rewards of entrepreneurship (Segal *et al.*, 2005); as well as
- supporting them to create their own ventures (*Ibid*).

Shapero and Sokol (1982) argue that perceived feasibility includes two aspects, namely financial support and potential partnerships. Nahapiet and Ghoshal (1998) define social capital as the actual and potential resources from existing networks that are inherent to the individual and or the networks derived from the relationships.

Social capital therefore encompasses both the network and the assets that may be organised through that network structure of the individual.

Jones-Evans, Brooksbank, Thompson and Williams (2006) found that attitudes towards entrepreneurship for the rural and urban populations differ, with greater confidence in enterprise skills found in the rural population, but interestingly the urban population displayed a slightly higher regard for enterprise careers. It is understandable that entrepreneurial aspirations are found to be similar for the areas, but given the above, this is likely to be due to quite different reasons. According to Dabson (2001), entrepreneurs based in rural communities find it difficult to access resources and services that are readily available in more urban locations. These resources are critical for SME development and include regular parcel services, high-speed internet access, or specialist technical advice.

In rural communities and rural towns, it has proven to be difficult to find buildings that are suitable for various business operations which will include correct access designs, configuration and utilities (*Ibid*). Rural towns and communities have poor access to institutions that support business growth, which consequently affects access to capital and non-financial support. As a result, limited options and tardy completion could in turn affect the efficiency and quality of the products produced and or the services offered. Lastly, due to limited social networks, entrepreneurs may find it challenging to find peers with whom they can share ideas and problems. In summary, peer support structures tend to be weak in rural communities.

Hypothesis 3

Students at urban-based FET colleges have higher entrepreneurial intentions than rural-based and metro-township-based FET-college students.

2.4.4 Association of antecedents to EI (H4)

According to Davidsson's (1995) model, conviction of an individual is a major predictor of entrepreneurial intention. The higher the conviction, the higher the entrepreneurial intent and thus the individual would most likely take entrepreneurship as a career alternative. Ajzen and Fishbein (1980) have regarded the conviction variable as constituting a variety of acts in their models. Further, Rogers (1983) argues that conviction is a key concept in the implementation of innovations.

Davidsson's (*Ibid*) model further advances that the antecedent that plays a major determinant of entrepreneurial intention is the person's conviction. Conviction enables the individual to perceive entrepreneurship as an alternative suitable career option. This concept also possesses close links to *perceived self-efficacy*, which has been encompassed in previous academic discussions (Boyd and Vozikis, 1994; Krueger and Brazael, 1994; Krueger and Carsrud, 1993).

The Autio *et al.* (1997) model also maintains that the role of general attitudes of individuals to opt for entrepreneurship is a viable career choice. The model investigates the influence of attitudes toward achievement, autonomy, money, change and competitiveness upon entrepreneurial conviction. Conviction is understood to be the foundational predictor for entrepreneurial intention. Further, the results of the model indicate that conviction is highly moderated by the individual's general attitude. Thus, Autio *et al.* (*Ibid*) concluded that there is positive correlation between attitudes and entrepreneurial conviction.

Hypothesis 4

Entrepreneurial conviction has a stronger association than FET college environment, image of entrepreneurship and general attitudes with the outcome variable of entrepreneurship intention.

2.5. Conclusion of literature review

According to Ajzen (1991), the best single predictor of behaviour is intention. This study has used the base model established by Autio *et al.* (1997) to explain entrepreneurial intention of students in FETs in South Africa. This model which was adapted from Davidsson's (1995) model, argues that entrepreneurial intentions can be influenced by:

- Conviction that is well-defined by general attitudes (change, competitiveness, money, achievement, and autonomy); and
- domain attitudes (payoff, societal contribution and know-how).

Conviction is influenced by personal background variables, which include age, gender, education, vicarious experience and radical change experience. This model was adjusted to ensure that it took into consideration the factors that are unique to students at universities (in this case, FETs).

The literature suggests that young entrepreneurs have higher levels of entrepreneurial intent. According to Schoof (2006) and Blanchflower and Oswald (1998), there are a number of characteristics that differentiate young entrepreneurs from their older counterparts, that is,

- even though young people are impeded by life's realities, they are generally more likely to have positive attitudes towards self-employment; and
- young people experience greater entry barriers due to limited resources, life and work experience than their older counterparts.

This study establishes the link and influence of each antecedent to entrepreneurial intent. This research investigates students' entrepreneurial intentions and their knowledge of government support programmes for small businesses. According to the literature reviewed above, entrepreneurial intentions of individuals increase as they are exposed to entrepreneurship education and support. Technical skills are also critical in developing sustainable long term businesses and being capable of

responding to economic challenges. Young people are more likely to be more innovative and more accepting to take on the new challenges that are brought about by economic changes in South Africa.

Table 4 below contains a summary of the research propositions and hypotheses of this study.

Table 4: Summary of Hypotheses

<p>H1 Personal background variables of FET students such as gender, discipline of study and family members who are entrepreneurs, have a positive correlation to entrepreneurial intentions.</p>	<p>1a: Male FET students have higher entrepreneurial intentions than female FET students.</p> <hr/> <p>1b: Students exposed to FET entrepreneurial-related studies have higher entrepreneurial intentions than those in FET technical courses.</p> <hr/> <p>1c: Students who have entrepreneurial family-members have higher entrepreneurial intentions than students who have non-entrepreneurial family members.</p>
<p>H2 The promotion of entrepreneurship at FETs through exposure to government SMME support-programs has a positive effect on entrepreneurial intentions</p>	
<p>H3 Students at urban-based FET colleges have higher entrepreneurial intentions than rural-based and metro-township-based FET-college students.</p>	
<p>H4 Entrepreneurial conviction has a stronger association than FET college environment, image of entrepreneurship and general attitudes on the outcome variable of entrepreneurship intention.</p>	

Source: Author (2011)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Methodology

A cross-sectional, quantitative study based on existing theory was undertaken. In this type of research study, either the entire population or a subset thereof was selected and the data was collected to help answer the research questions of interest. In this research, the sampling frame was composed of students from selected FET colleges, from whom data to help answer the research questions of interest was collected by means of questionnaires. Being cross-sectional in nature, the information gathered represents the situation only at that specific point in time (Olsen and St. George; 2004).

3.2 Research Design and Data Collection

Appropriate research design should ensure that the evidence gathered via the study enables the researcher to answer the research question as distinctly as possible. Given that the research aim was to investigate entrepreneurial intentions of FET students, a deductive approach using theory to develop propositions was adopted. Questionnaires were administered to final-year students undertaking both technical and new venture creation disciplines of study at five FETs in four different provinces. The researcher personally administered the questionnaires with two (2) assistants. The concept of EI is not necessarily well known by students; therefore, a covering letter (Appendix A) was attached to broadly explain this. The letter also outlined the potential impact of the study to help shape the syllabi and general environments of FETs, and thus help improve the effectiveness of FETs in contributing to entrepreneurial intentions of students.

To avoid potential distortion of the results or outcomes of the research due to limited knowledge of entrepreneurial intentions, it was important to collect data that is as broad as possible, which would ensure the inclusion of a wider range of responses

and allow for a good margin of error. Furthermore, the larger and more diverse the sample, the greater the researcher's ability to generalise the findings to the general population of FET students in South Africa. To this end, the advantage of using questionnaires is that they are relatively easy to administer and that large amounts of data can be analysed more scientifically. However, questionnaires do have the disadvantage that the questions may be interpreted differently by the respondents. Furthermore, it can be argued that the questionnaires may be an inadequate means to capture certain information such as that pertaining to emotions, behaviour and feelings. This is a concern in the context of this research as the study aims, in part, to explore feelings (attitudes) of students towards entrepreneurship.

Phenomenologists assert that quantitative research is simply an artificial creation by the researcher, as it asks for only a limited amount of information without explanation. The main disadvantages of using questionnaires for this report were their inflexibility to allow students to express their thoughts and emotions in full because the questions were designed with tick boxes for the answers. The questionnaires were non-emphatic. One of the main advantages of this type of survey lies in the ease to respond using scores. However, the questions are also restrictive and limiting unlike open-ended ones where the allowable responses are not predetermined. Given that this study is deductive in nature and draws from the available theory on EI, the instrument was similarly linked to the body of theory through the inclusion of the standard measures that are used to measure EI, as well as the inclusion of antecedents to EI such as entrepreneurial conviction, *inter alia*.

3.3 Research Instrument

The research instrument that was employed for this report consisted of a questionnaire in which the scales were adapted from Davidsson (1995) and Autio *et al.* (1997). The study used a quantitative approach by surveying students who were completing their studies in any programme offered by the respective FETs so as to establish their entrepreneurial intentions. The same questionnaire was used in all the participating FETs. A test to ensure alignment of the research instrument with the

model (base model) created by Autio *et al* (1997) was conducted using Excel (see Appendix B).

In this study entrepreneurial intention was measured by means of points on a Likert-type scale in response to general sentences indicating different aspects of intention. A similar system was previously used by Chen *et al.* (1998) and Zhao *et al.* (2005). However, Armitage and Conner (2001) identified three distinct kinds of intention measures: desire (I want to ...), self-prediction (How likely is it ...) and behavioural intention (I intend to ...). This latter type appears to yield slightly better results in the prediction of behaviour (Armitage and Conner, 2001: 483). In this sense, Chen *et al.* (1998) use a mix of self-prediction and pure-intention items, whereas Zhao *et al.* (2005) use “interest” measures (how interested are you in ...). This study followed the “desire” approach to measure EI because the participants were still students; therefore their career options were still open and not yet certain.

3.3.1 Variables

In research, a variable is any characteristic or value that can be changed, and, as such, helps to answer whether a change to one thing relates to a change in another. In this questionnaire the dependent variable is EI. The independent variables are:

- personal background – gender, study discipline and a family history of entrepreneurship;
- supportiveness of FET environment through exposure to government SMME support programmes;
- geographic location of FET, vis-a-vis a rural, urban or urban-township setting.

On the basis of the literature review, the following micro-level variables were expected to influence the perceptions of EI. These intervening variables are:

- general attitudes – valuation of money, and achievement motivation;

- image of entrepreneurship – perceived payoff;
- entrepreneurial conviction

a. ***EI***

EI was measured by means of the responses when required to complete the statement “I want to start my own business...”; the respondents were requested to tick their applicable answer. These ranged from “Never”, being representative of no EI; “5 years or more after graduating”, which was representative of low EI; “within 3 to 5 years of graduating”, which was representative of medium EI; and finally, “within 1 to 2 years of graduating”, which was representative of high EI. The EI measure relates to the timeframe within which the participants intended to start their own venture. The high or low EI relates to the intended speed of bringing to fruition the intended venture.

b. ***Personal background***

The respondents were requested to provide information on their gender, study disciplines and whether or not they had a family history of entrepreneurship. Based on the literature review, it was anticipated that EI would differ on the basis of differences in these characteristics, for example, female vs. male students, or business related vs. technical study disciplines.

c. ***Supportiveness of FET environment through exposure to government SMME support programmes***

The extent to which the FET environment is supportive of entrepreneurship was measured by means of six questions relating to whether or not students had been exposed to various government SMME support programmes such as Khula, NYDA and SEDA. A typical question is “At our FET we have been taught about what SEDA does to promote small businesses”. Initially, answers were rated on a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. In the analysis of the responses, however, the scale was reduced to three points with “strongly

disagree” and “disagree” being reduced to “No”, while “strongly agree” and “agree” were reduced to “Yes”. “Neutral” represented a response of “unsure” to the various questions. The Cronbach’s alpha for the six-item scale was 0.877, thus confirming that the multi-item scale measures one dimension. According to Hair, Anderson, Tatham and Black (2010), once a scale is deemed unidirectional, its reliability score, as measured by the Cronbach’s alpha, should exceed a threshold of 0.70; although a level of 0.60 can be used for exploratory research. In presenting alphas for this and all other composite items, the guideline of 0.6 as the hurdle measure to assure sufficient internal consistency, and 0.8 as representative of high internal consistency, were therefore, adopted.

d. ***FET geographic location***

The 360 respondents were drawn from five different FETs which are representative of rural, urban and metro-township geographical settings. On the basis of these differences, different levels of EI were anticipated to emerge.

Table 5: Geographical classification of participating FETs

GEOGRAPHIC CLASSIFICATION	FET COLLEGE
Metro-township	Tshwane North FET College
	Ekurhuleni FET College
Urban	Nkangala FET College
	Umgungundlovu FET College
Rural	Sekhukhune FET College

e. ***General attitudes – valuation of money, and achievement motivation***

The general attitudes towards entrepreneurship as they relate to the valuation of money and motivation to achieve were each measured through four-item and six-

item scales, respectively. Typical statements to test for valuation of money were “Making a lot of money is important to me”, and “I always strive to be better than average in whatever I do”. These are found in the section covering the motivation to achieve. Both items were rated on a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The scales achieved satisfactory internal validity with Cronbach’s alphas of 0.736 and 0.681 for valuation of money and achievement motivation, respectively. The composite measure for general attitudes similarly achieved sufficient internal validity with a Cronbach’s alpha of 0.666.

f. ***Image of entrepreneurship payoff***

The perceptions of the respondents with regards to the payoff of entrepreneurship were measured with a seven-item scale, typified by such questions to rate statements such as “People who start their own business run a greater risk of losing everything they have”. A five-point Likert scale, with (1) strongly disagree to (5) strongly agree, was used to rate the responses. This composite measure of entrepreneurship image achieved a satisfactory 0.696 Cronbach’s alpha.

g. ***Entrepreneurial conviction***

The conviction of the respondents towards starting their own businesses was measured by means of a four-item scale. An example of the type of statement posed was: “I could make best use of my education by starting my own business”. The responses were rated on a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The Cronbach’s alpha achieved for this item was 0.734.

3.4 Population and Sample

3.4.1 Population distribution

The population for this study comprises South-African, final-year FET students in both business-related and technical fields of study at the time of the study. The

sampling frame consisted of the final-year students at the five (5) FET colleges in four (4) provinces that were targeted by the researcher.

The FET colleges are classified by location as being rural, urban and a metro-township, as per table 6, which furthermore indicates the number of participants from each FET and its geographic location. Given the nature of H2 there was a targeted mix of geographical representation of the participating FETs. Ultimately the inclusion of specific FETs in this study was based largely on their accessibility facilitated by the author's existing social networks.

Table 6: Distribution profile of FETs

Name of FET	Province (Town)	Campus	Geographical Classification	Number of participants
Ekurhuleni FET College	Gauteng (Ekurhuleni)	Katlehong campus	Metro-township	92
Tshwane North College	Gauteng (Pretoria)	Mamelodi campus	Metro-township	48
Umgungundlovu FET College	Kwa-Zulu Natal (Pietermaritzburg)	Pietermaritzburg campus	Urban	49
Nkangala FET College	Mpumalanga (Witbank)	Witbank campus	Urban	87
Sekhukhune FET College	Limpopo (Groblersdal)	Motetema campus	Rural	84

3.4.2 Sample and sampling method

As this study was aimed at studying a particular population, being final-year FET students, a purposive sampling method was used (Cooper and Schindler, 2001). Students were requested to complete questionnaires manually during class and these were returned to the researcher immediately.

Table 7: Profile of the respondents

Description of respondent type	Number of participants
Students who were completing their studies in FET	360
Age	18 – 35
Gender (No specific targets for specific gender-mix)	Mixed

3.5 Data analysis and Interpretation

The hard copy forms were captured in Excel; formulae and various functionalities such as drop-down lists, were inserted to limit the potential for errors. All manually completed questionnaires were labelled as they were captured, which facilitated spot checking, tracing errors, or verifying the input. The numbering format for each institution was prefixed by a shorthand code for the name of the institution, thus allowing for sub-categorisation of the findings per FET, for the purposes of comparison.

3.5.1 Quantitative Data Analysis

Statistical analysis was applied to the questionnaire responses. Quantitative methods were employed to analyse the data using Excel spreadsheets and statistical programs, namely Statistica and SPSS. These methods allowed the researcher to capture and collate the data and process all statistical information

correctly and to ensure accuracy and reliability. The quantitative data analyses included the following.

Descriptive statistics: These included simple summaries that contain the sample and measures, describe trends and provide the opportunity to examine and explore individual variables pertaining a particular time. This leads to a better understanding of the responses to the questionnaire. Some items were reverse coded as necessary, for example, among the questions comprising the global measure of entrepreneurial conviction were those such as “I do not think I have the qualities needed to run my own business”. Through reverse-coding it was ensured that all the answers measured the positive aspect of conviction.

Factor analysis: The purpose of factor analysis is to reduce the total number of variables and condense the data into a smaller number of factors that can be used for further analysis (Zikmund, 2003). Factor loading scores measure the strength of association for each statement with its corresponding factor. Furthermore, variation measures how well each factor represents the variables that are associated with it.

Reliability analysis: Cronbach’s coefficient alphas were used to measure internal consistency reliability. Cronbach alphas of between 0.6 and 0.85 are sufficient indicators for the reliability of the composite measures (Hair *et al.*, 1998).

Independent T-tests: The independent samples t-test compares the mean scores of two groups drawn from independent samples (Keller and Warrack, 2000). This form of t-test is commonly used when there is no association between the two sets of scores or values that are being compared.

One-way Analysis of Variance (ANOVA): The purpose of ANOVA is to test for significant differences between the means of multiple groups (Zikmund, 2003). The technique analyses the variance of the data in order to determine whether we can infer that the population means differ (Keller and Warrack, 2000).

Correlation analysis: The Pearson correlation coefficient (r) was used to test if a linear relationship exists between two variables. The correlation coefficient is a

statistical measure of the association between two numerical variables (Zikmund, 2003). The value of r ranges from +1.0 to -1.0 where a positive r value indicates a direct relationship and a negative r value represents an inverse relationship between two variables

Regression analysis: Regression analysis is used to predict the value of one variable on the basis of other variables. It is one of the most commonly used statistical procedures as it applies to so many situations and business applications (Keller and Warrack, 2000). The primary motive for using regression analysis is forecasting; however, this technique can also be quite useful for analysing the relationships among variables by developing a mathematical model that accurately describes the nature of the relationship that exists between the dependent variable and the independent variables (*Ibid*).

The accuracy and significance of the regression model are represented by the coefficient of determination (R-squared) and the ANOVA model fit table respectively. Stepwise regression was also conducted to improve the model fit. Stepwise regression is an iterative procedure that adds and deletes one independent variable at a time (Keller and Warrack, 2000). The decision to add or delete a variable is made on the basis of whether that variable improves the model or not.

3.5.2 Analysis of the Hypotheses

Data were compared by means of descriptive and inferential statistics in order to test the hypotheses. The following sections describe how each analysis was applied to the data to achieve statistical significance.

3.5.2.1 Tests pertaining to Hypothesis 1

T-tests for mean differences were conducted in order to test the statistical significance of the mean differences in entrepreneurial intentions related to hypotheses H1a, H1b and H1c. The t-test is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups. For the purposes of this research, if the difference in the

means was significantly different, we can draw a conclusion that one category tends to have a higher or lower level of entrepreneurial intention than the other.

Before conducting a t-test it is worthwhile to test for the homogeneity of variance between the two groups in order to determine the use of an appropriate t-test. This is accomplished by conducting Levene's F-test for the homogeneity of variance. The null hypothesis for Levene's F-test was that the population variances (σ^2) of the two unrelated groups were equal:

$$\text{Null Hypothesis} \quad - \quad H_0: \sigma^2_1 = \sigma^2_2$$

The alternative null hypothesis is that the population variances were not equal:

$$\text{Alternate Null Hypothesis} \quad - \quad H_a: \sigma^2_1 \neq \sigma^2_2$$

In the case where the assumption of equal variances is violated, the t-test assuming unequal variances needs to be conducted.

The null hypothesis for the t-test was that the population means (μ) from the two unrelated groups were equal:

$$\text{Null Hypothesis} \quad - \quad H_0: \mu_1 = \mu_2$$

The alternative null hypothesis is that the population means were not equal:

$$\text{Alternate Null Hypothesis} \quad - \quad H_a: \mu_1 \neq \mu_2$$

The statistical level of significance for the test was 5% (0.05). Thus, if the p-value was smaller than 0.05, the null hypothesis was rejected and the alternate hypothesis was accepted, thus signifying that there is a statistical difference between the two means.

3.5.2.2 Tests pertaining to Hypothesis 2

Pearson's correlation coefficient was used to assess the hypothesised relationship between the promotion of entrepreneurship at FETs through government SMME support programmes and entrepreneurial intentions. The Pearson correlation

coefficient was chosen to test this hypothesis as it indicates both the magnitude of the linear relationship and the direction of that relationship.

With regards to Hypothesis 2, if a significant and positive correlation exists between the two constructs, we can conclude that the promotion of entrepreneurship at FETs through government SMME support programmes exerts a positive effect on entrepreneurial intentions.

3.5.2.3 Tests pertaining to Hypothesis 3

ANOVA was used to generalise the independent two-sample t-test to more than two groups. It is a technique used to determine how means differ across different categories, more specifically, the numerical/treatment variable (entrepreneurial intentions) and one categorical/qualitative variable (type of FET college students).

With regards to Hypothesis 3, ANOVA was used to compute and compare the mean scores for entrepreneurial intentions and to subsequently determine if these means were the same across all the different types of FET college students or if there were significant differences. These results could then confirm whether students at urban-based FET colleges have higher entrepreneurial intentions than rural-based FET college students.

3.5.2.4 Tests pertaining to Hypothesis 4

Regression analysis was conducted in three phases to test the hypothesised relationships between entrepreneurial conviction, FET college environment, image of entrepreneurship, or general attitudes on the outcome variable of entrepreneurial intention.

The first phase involved a series of linear regression analyses between each independent variable and entrepreneurial intentions. Thereafter, the second phase included all independent variables as part of a multiple regression analysis. The third and final phase was rounded off by conducting a stepwise regression to determine the best regression model and the strongest predictors of entrepreneurial intention.

3.6 Validity and Reliability of Research

The traditional criteria for validity find their roots in a positivist tradition, and to some extent positivism has been defined by a systematic theory of validity. Joppe (2000) explains that validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow the investigator to determine the essence of the research objective? Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others. Wainer and Braun (1998) describe the validity in quantitative research as “construct validity”. The construct is the initial concept, notion, question or hypothesis that determines which data is to be gathered and how it is to be gathered. In order to address the validity of the instrument, the questionnaire was broken down into separate sections, each of which was linked to the variables that were tested in the model.

3.6.1 External validity

According to Damm (2007) and Berander (2007), validity determines whether the results obtained from research work can be generalised to other domains or not is called external validity. Berander (*Ibid*) asserts that external validity is also known as generalisability.

According to Wohlin, von Mayrhauser and Regnel (2000), external validity is used to determine the applicability of the research results to other domains. Selection of inappropriate subjects from the population can cause a potential threat to external validity, as results obtained from the said subjects cannot be generalised to the whole population. In order to minimise the threats to external validity, the questionnaire was distributed only to students completing their studies at the particular FETs selected.

The principal limitation of the study was the limited generalisability of the results due to the sample. It is likely that the research results from the sample of 360 students in

the four (4) provinces presented a limited potential to generalise in terms of the population of all FET colleges in South Africa's nine (9) provinces.

3.6.2 Internal validity

According to Berander (2007), Damm (2007) and Wohlin, *et al.* (2000), the validity that mentions that a research design should allow the researcher to draw conclusions from the causes and effects, is called internal validity. Further, Damm (2007) and Wohlin, *et al.* (2000) point out that certain factors that can affect independent variables without the researcher's knowledge and internal validity helps researchers identify those factors. In order to mitigate against the general discomfort around revealing personal information, all the respondents were assured about the confidentiality and anonymity of their responses, and that they would be used only for the purpose of the research. By doing so, some of the potential threat to the validity of the conclusion was reduced.

Statistical tests for validity were conducted. The Kaiser-Meyer-Olkin (KMO) statistic along with Bartlett's Chi-squared statistic were used to determine the sample adequacy and sphericity of the item-correlation matrix. Thereafter, factor analysis was employed to identify the dimensions of the measurements. Table 8 summarises these results. The consistently high KMO statistics and the significant Barlett's chi-squared results indicate that the data is valid and is suitable for factor analysis.

Table 8: Statistical validity

Scale	KMO	Bartlett's Chi-squared (df)	Significance
FET Environment	0.805	1 194.15 (15)	p < 0.001
Image	0.752	342.961 (21)	p < 0.001
Conviction	0.750	305.113 (6)	p < 0.001
Money	0.759	304.923 (6)	p < 0.001
Achievement	0.764	303.269 (15)	p < 0.001

3.6.3 Reliability

Lewis (1999) defines reliability as the degree to which repeated measurements, or measurements taken under identical circumstances, will yield the same results. This definition assumes that the act of measuring does not affect the variable or characteristic of interest. Reliability is a measure of the randomness of the measurement process itself.

Cronbach's coefficient alphas were used to measure internal consistency reliability. According to Hair *et al.* (2010), all the composite measures met the threshold level of 0.6 for sufficient reliability, as can be seen below.

Table 9: Cronbach's alphas per composite measure

Scale	Cronbach's Alpha
FET Environment – supportiveness	0.877
Image of entrepreneurship	0.696
Entrepreneurial conviction	0.734
General attitude	0.666
Valuation of money	0.736
Achievement motivation	0.681

3.6.4 Construct Validity

In analysing multi-item scale variables, factor analysis was employed to examine the underlying patterns and to determine whether the information could be condensed into smaller sets of factors or components with minimum loss of information. The key objective of factor analysis is to search for and define the fundamental constructs assumed to underlie the original variables (Hair *et al.*, 2010).

The following table summarises the validity results. All the respective factors in the statements had high factor loadings the variation percentage explained indicated sufficient common method variance. More detailed information relating to the validity measures for each scale can be found in Appendix C.

Table 10: Construct validity results

Scale: FET Environment	Explained Variation: 62.749%
	Eigenvalue: 3.765
Scale: Image	Explained Variation: 35.591%
	Eigenvalue: 2.491
Scale: Conviction	Explained Variation: 56.159%
	Eigenvalue: 2.246
Scale: Money	Explained Variation: 56.608%
	Eigenvalue: 2.264
Scale: Achievement	Explained Variation: 39.561%
	Eigenvalue: 2.374
Scale: Attitude	Explained Variation: 26.392%
	Eigenvalue: 2.639

In keeping with the convention, those variables whose measures of sampling adequacy (MSA) values were less than 0.5 were omitted from all subsequent analyses. The constructs that were impacted by this adjustment, along with the questions that were omitted and their MSA values, are tabulated below.

Table 11: Questions omitted based on low sampling adequacy < 0.5

Entrepreneurial Conviction		MSA
13	Even if I came up with a good business idea, I don't think I'd risk starting my own business	0.343
14	I do not think I have the qualities needed to run my own business	0.398
Image of Entrepreneurship		MSA
42	Even if I came up with a good business idea I don't think I'd risk starting my own business	0.192
47	I do not think I have the qualities needed to run my own business	0.376
General Attitudes – Valuation of Money		MSA
25	I would do practically anything legal for money if it were enough	0.464

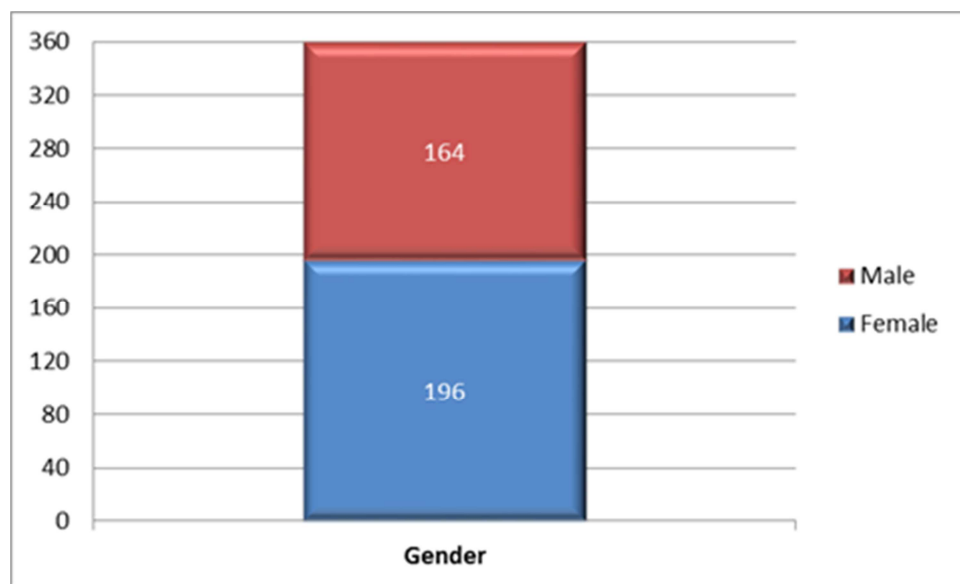
CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The intention of the study was to gather data from a sample as widely representative as possible in terms of gender, study discipline, family history of entrepreneurship and FET geographic location. The findings of this study are analysed and presented using both descriptive and inferential statistics in the remainder of this chapter.

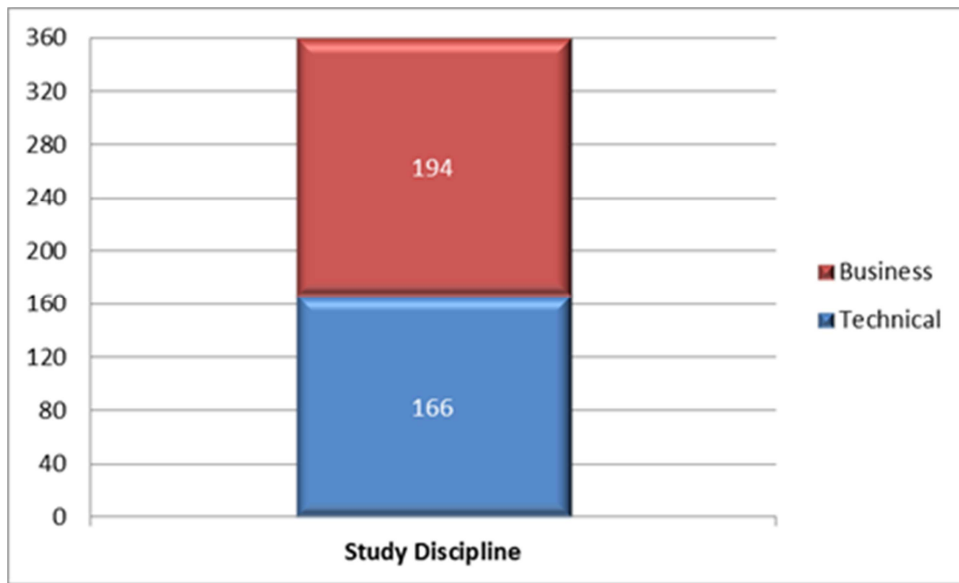
4.2 Biographical Profile of Respondents

Figure 3: Respondents split by gender



The figure above depicts the gender split of the respondents. Of a total of 360 respondents, 196 (54.44%) were female and 164 (45.56%) were male.

Figure 4: Respondents split by study discipline



The split of respondents based on study discipline is depicted in Figure 4 above. Of the total sample, students undertaking technical studies accounted for 166 (46.11%), while students in business-related studies totalled 194 (53.89%). There is very little overlap between the curricula of technical and the business related studies at FET colleges. As a result, students undertaking technical courses are not exposed to entrepreneurial related studies, while business students are.

Figure 5: Respondents' family history of entrepreneurship

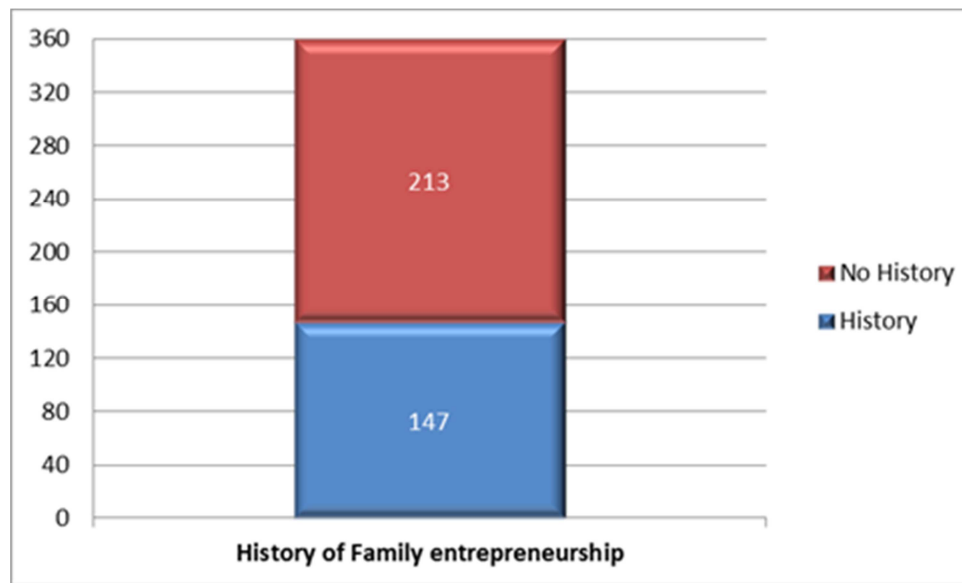


Figure 5 indicates that 213 (59.17%) of the 360 respondents have no immediate members of the family with entrepreneurial background, while 147 (40.83%) respondents do.

Figure 6: Respondents split by FET geographic location

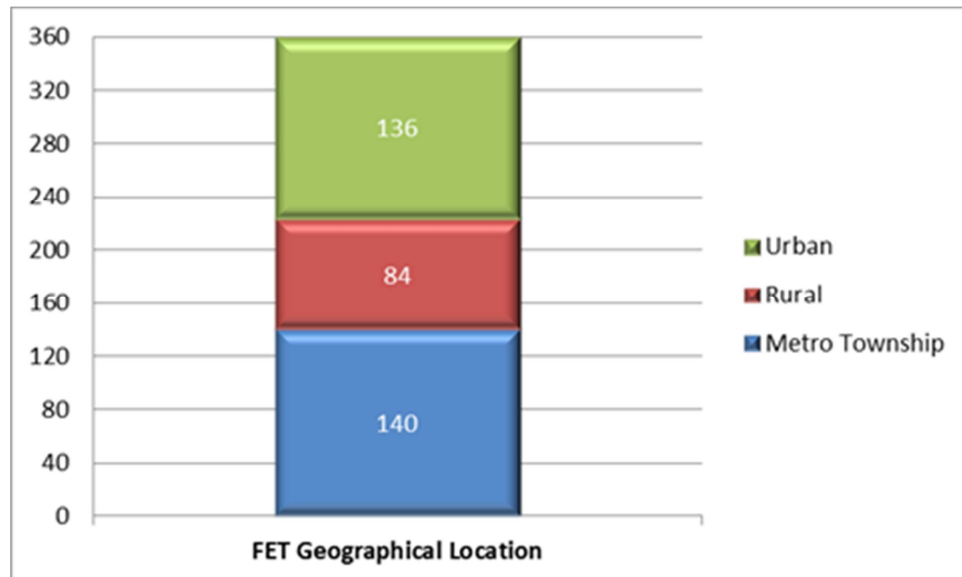


Figure 6 illustrates that the geographic location of FETs was well spread across the categories with 140 (38.89%) respondents from metro-townships, 136 (37.78%) from urban environments and the remaining 84 (23.33%) from rural locations.

In general, the stated intention to achieve a wide diversity of respondents in terms of the independent variables of gender, study discipline, family entrepreneurial history and FET geographic locations was achieved.

Figure 7: Respondents split by self-assessed FET environment

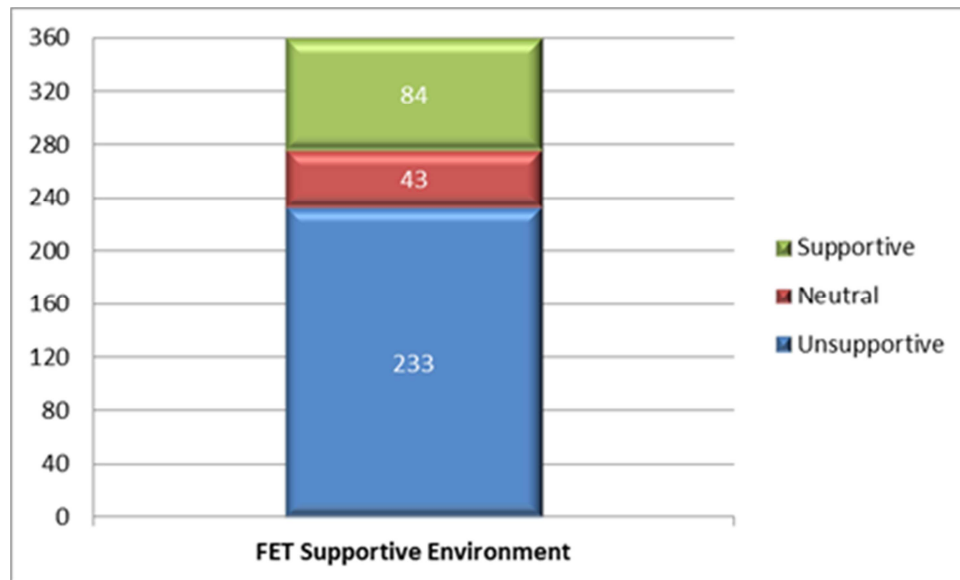


Figure 7 portrays the respondents' self-assessment of the extent to which their FET environment was supportive of entrepreneurship through exposure to government support programmes such as NYDA, Khula and SEDA. There was no intention to achieve an even spread of perceived FET support amongst students. The findings revealed a disproportionately high number of respondents – 233 (64.72%) – who perceive their FETs to be unsupportive of entrepreneurship, while only 84 (23.33%) found their FETs supportive and the remaining 43 (11.94%) found their environment neither supportive nor unsupportive.

4.3 Respondents with EI vs. No EI Based on Definitional Characteristics

Figure 8: EI vs. No EI– full sample

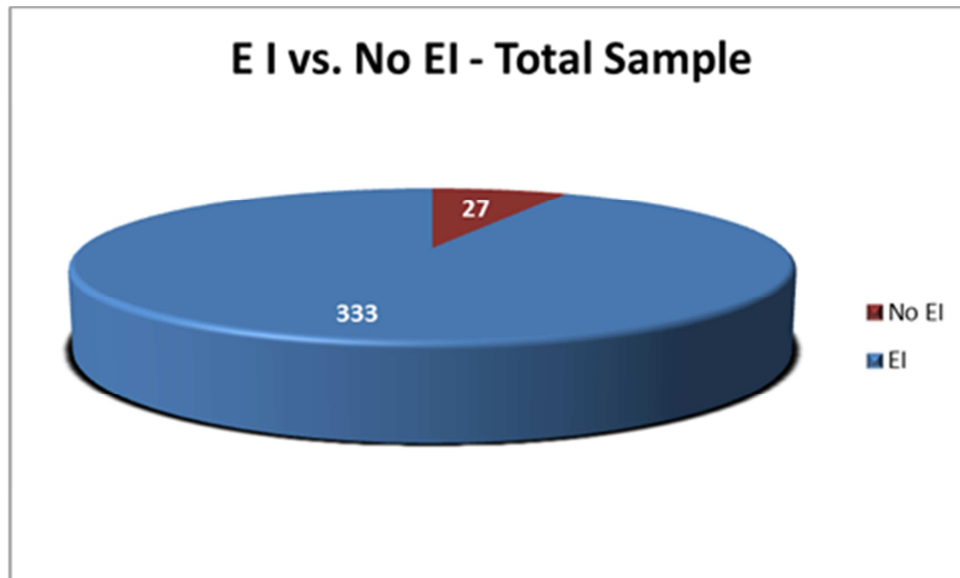
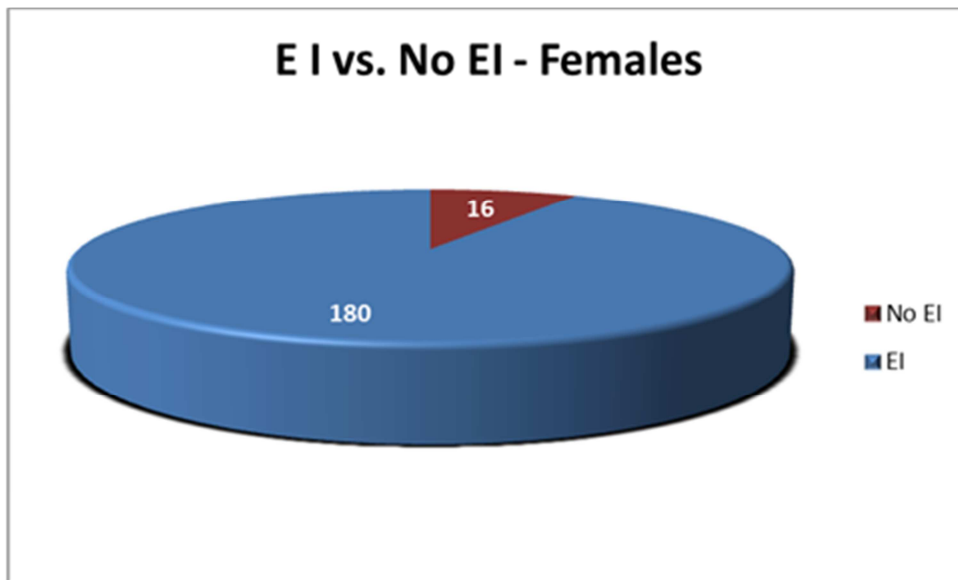


Figure 8 illustrates that of the total of 360 respondents who participated in the survey, 333 (92.50%) indicated their intention to start their own businesses at some point while 27 (7.50%) had no intention to do so.

Figure 9: EI vs. No EI – Females



As Figure 9 portrays, a total of 196 females participated in the study. Of these female students, 180 (91.84%) indicated their intention to start their own businesses at some point, while 16 (8.16%) had no such entrepreneurial intention.

Figure 10: EI vs. No EI – Males

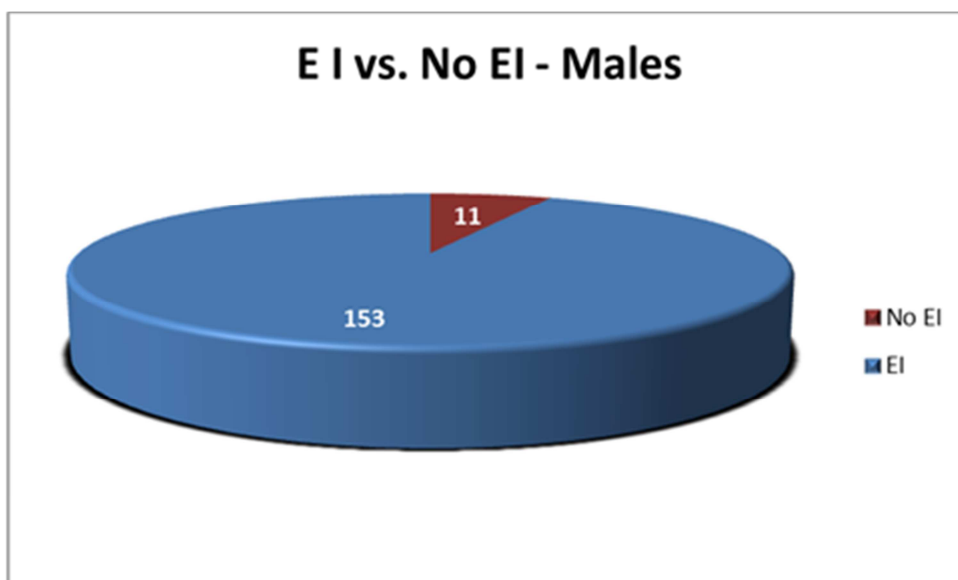


Figure 10 reveals that a total of 164 males participated in the study. Of these male respondents, 153 (93.29%) indicated that they had intentions to start their own

businesses at some point while only 11 (6.71%) indicated that they had no such intention.

Figure 11: EI vs. No EI - Technical students

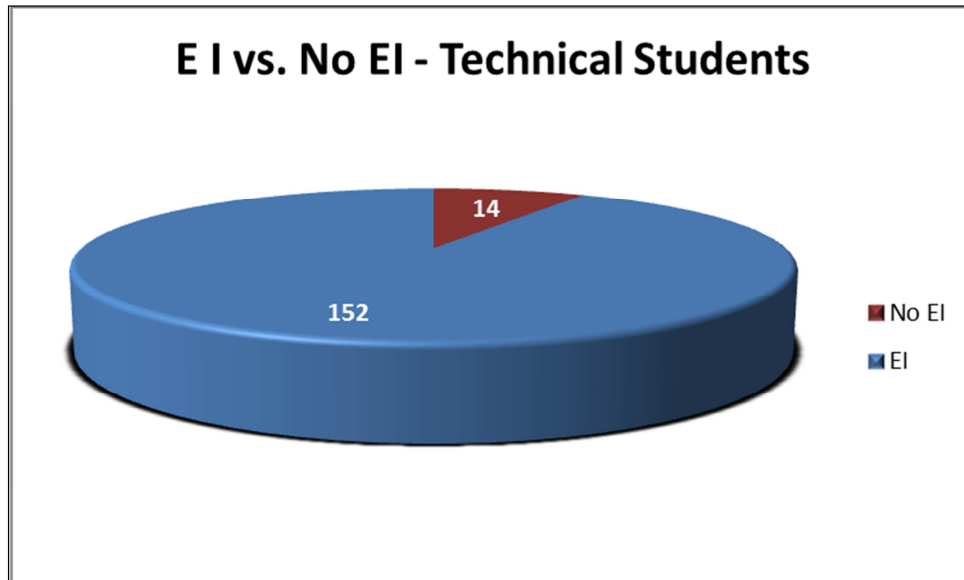


Figure 11 indicates that a total of 166 of the participants were registered for technical studies. Of the technical students, 152 (91.57%) had some intention to start their own businesses at some point in time, while 14 (8.43%) had no such entrepreneurial intentions.

Figure 12: EI vs. No EI - Business students

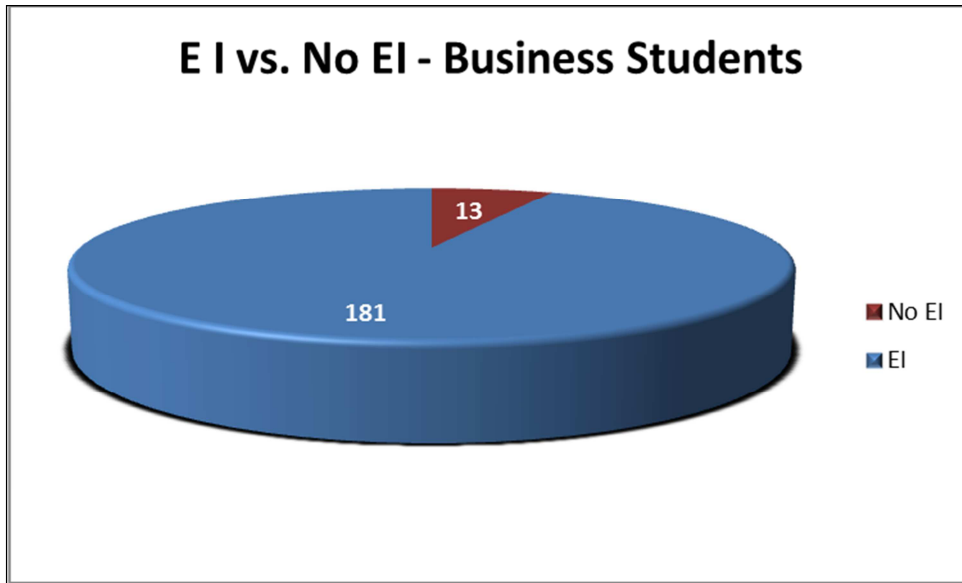


Figure 12 indicates that a total of 194 participants were engaged in business (entrepreneurial) related studies. Of these, 181 (93.30%) had intentions to start their own businesses sometime in the future, while 13 (6.70%) had no intention to do so.

Figure 13: EI vs. No EI – Family history of entrepreneurship

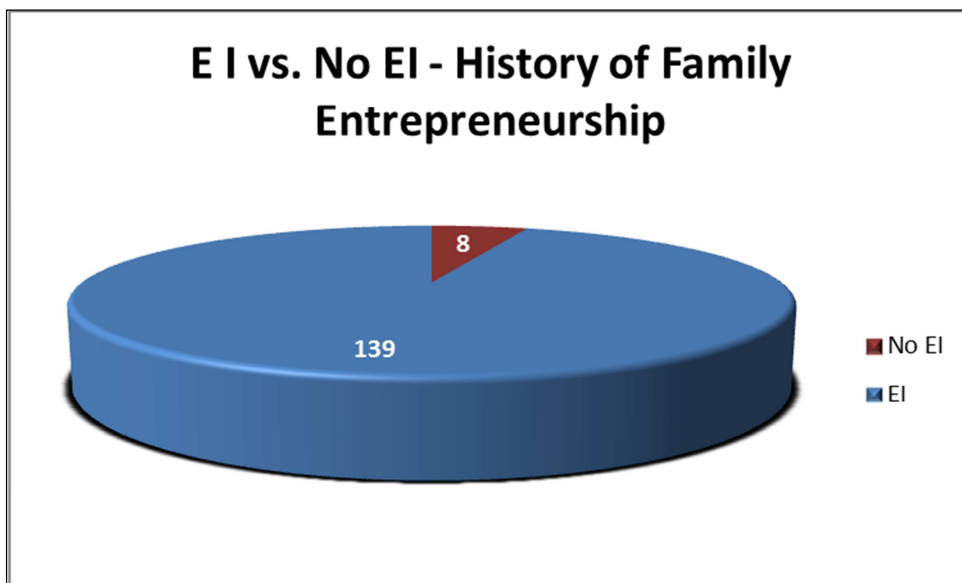


Figure 13 portrays a total of 147 participants with a history of family entrepreneurship. Of these, 139 (94.56%) had intentions to start their own businesses at some point, while 8 (5.44%) had no such intention.

Figure 14: No family history of entrepreneurship

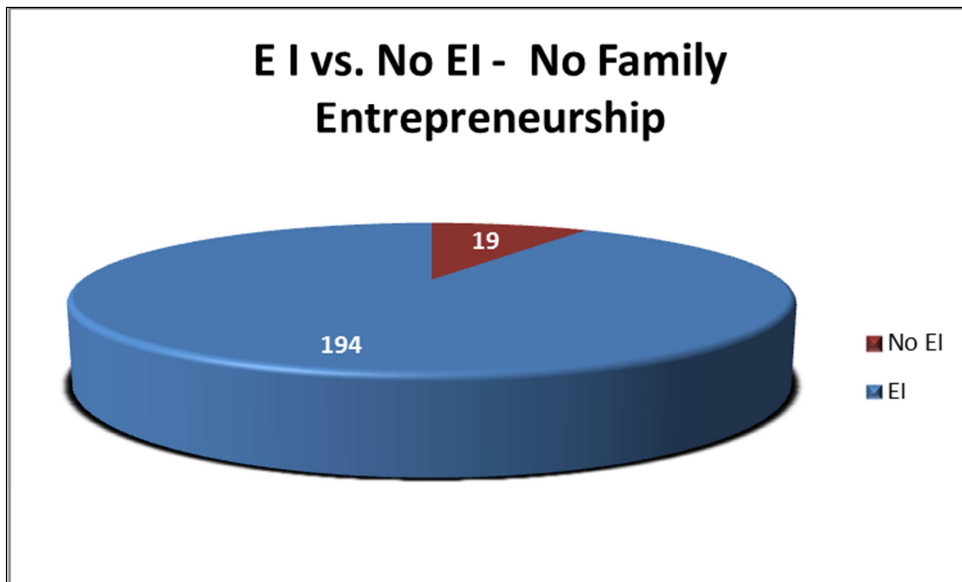


Figure 14 depicts a total of 213 participants with no entrepreneurial family background. Nevertheless, 194 (91.08%) of such respondents intended to start their own businesses at some point while 19 (8.92%) had no intention to do so.

Figure 15: EI vs. No EI self-assessed unsupportive FET environment

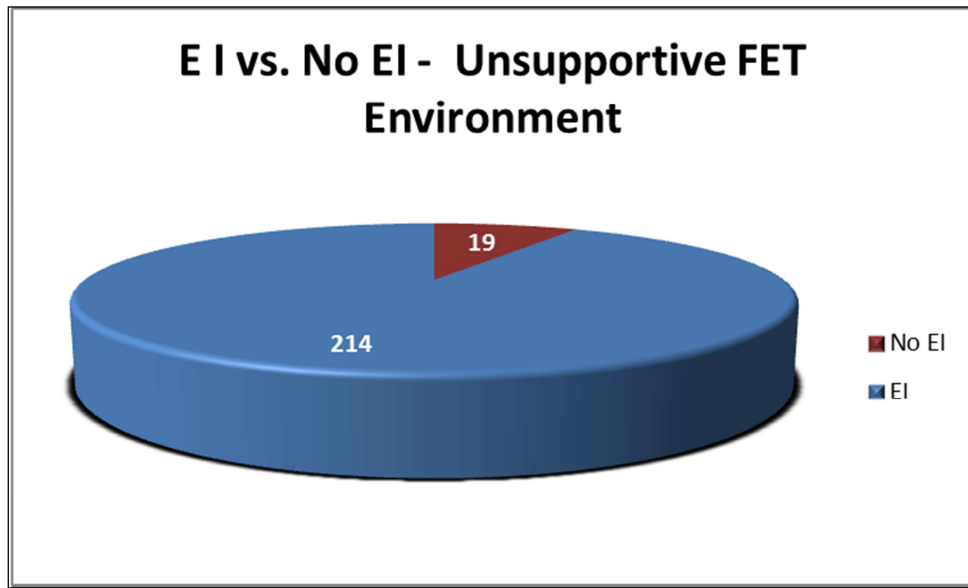


Figure 15 illustrates that a total of 233 participants indicated that the FET environment was not supportive to starting their own businesses. Of these, 214 (91.85%) indicated that they would start their own businesses at some point in the future, while 19 (8.15%) had no intention to do so.

Figure 16: EI vs. No EI – self-assessed neutral FET environment

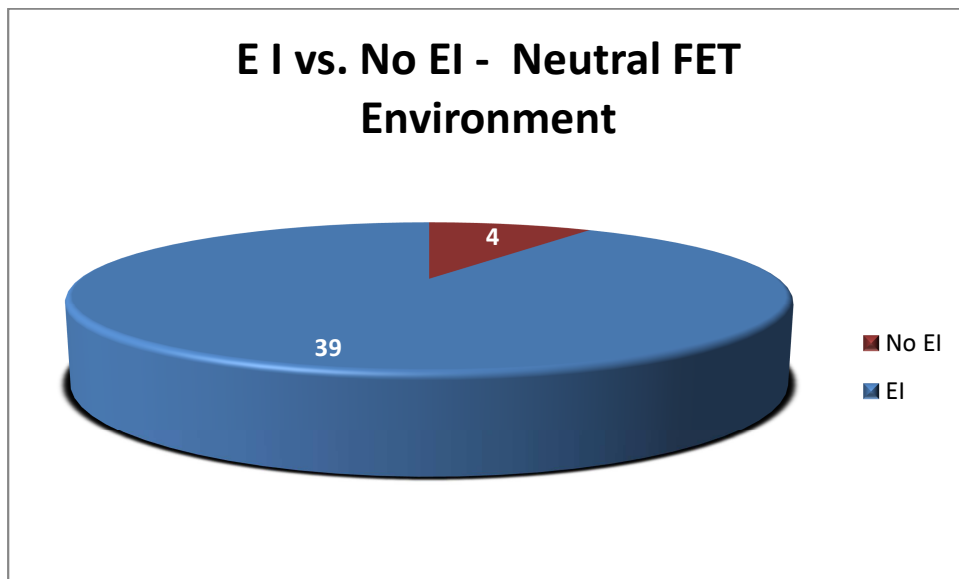


Figure 16 illustrates that a total of 43 respondents found that the environment at the FET was neither supportive nor supportive. Of these, 39 (90.70%) indicated that they had entrepreneurial intentions, while 4 (9.3%) had no such intentions.

Figure 17: EI vs. No EI – self-assessed supportive FET environment

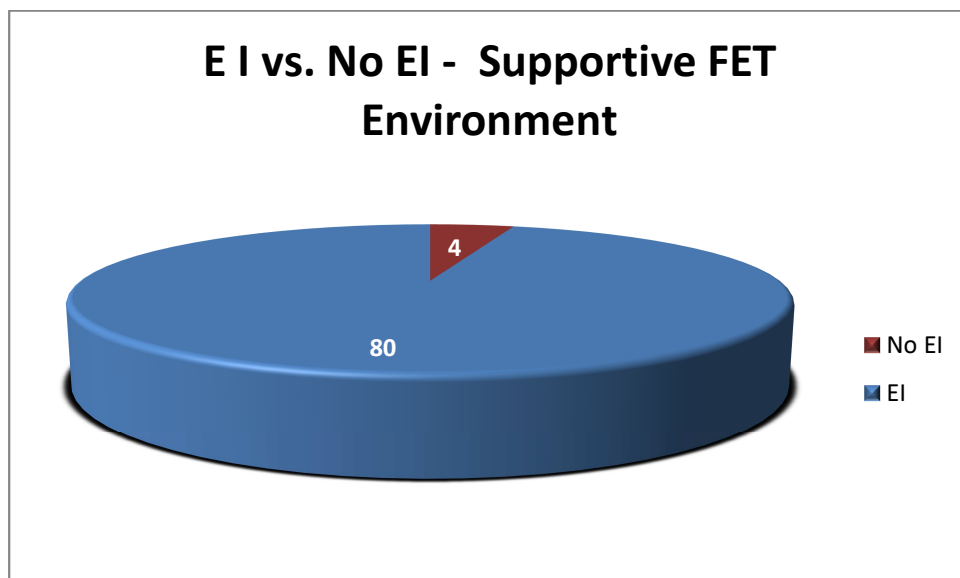
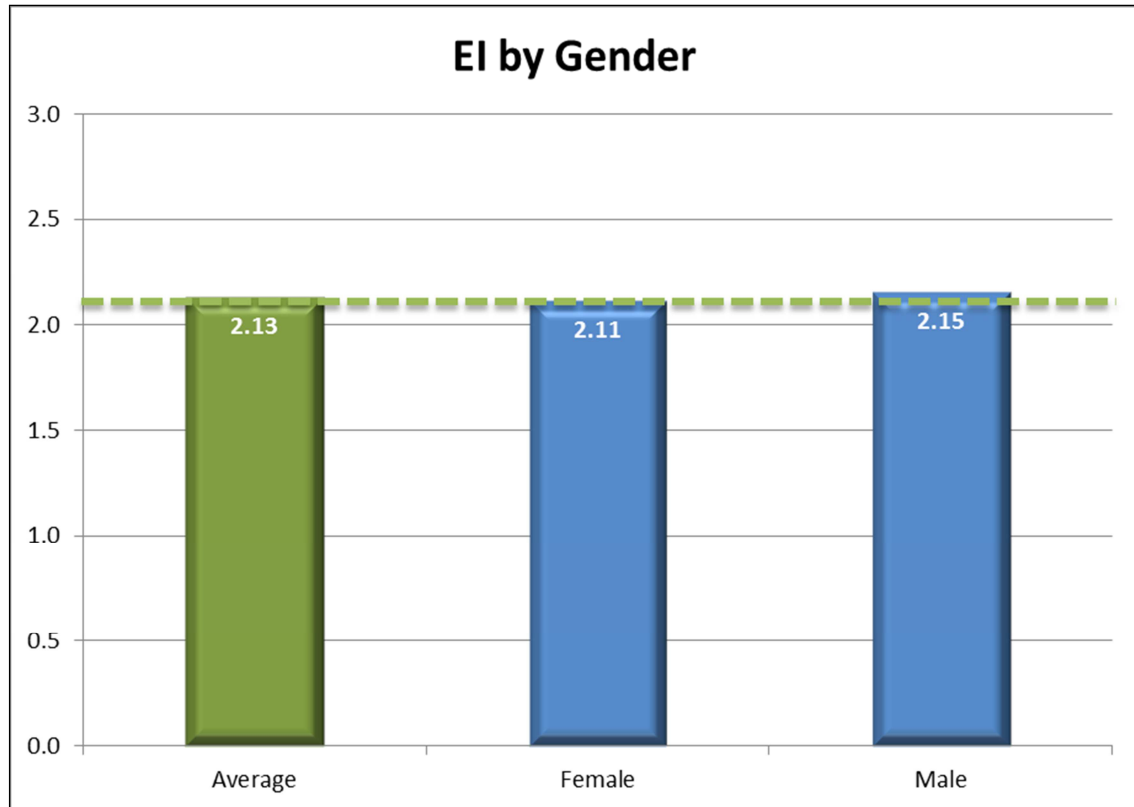


Figure 17 indicates that a total of 84 participants found their FET environment supportive of entrepreneurship through exposure to government SMME support programmes. The majority, 80 (95.24%), of these respondents had intentions to start their own businesses while 4 (4.76%) had no such intentions.

4.4 Results of the Exogenous Influence on EI (H1)

4.4.1 *The influence of gender on EI (H1a)*

Figure 18: EI by gender



The hypothesis for this section is: Male FET students have higher entrepreneurial intentions than female FET students. EI was measured on a scale from 0 to 3, which was indicative of no EI (0), low EI (1), moderate EI (2) and high EI (3). The mean EI for the total sample was 2.13. A comparison based on gender indicated that the mean EI of female vs. male respondents was lower at 2.11 vs. 2.15 respectively.

T-tests for mean differences were conducted to analyse the significance of the differences in the means of the two groups mentioned above. Prior to this, however, Levene's test for equality of variances was performed to determine if the variances between the different gender groups are equal; this would determine the appropriate t-test to be used.

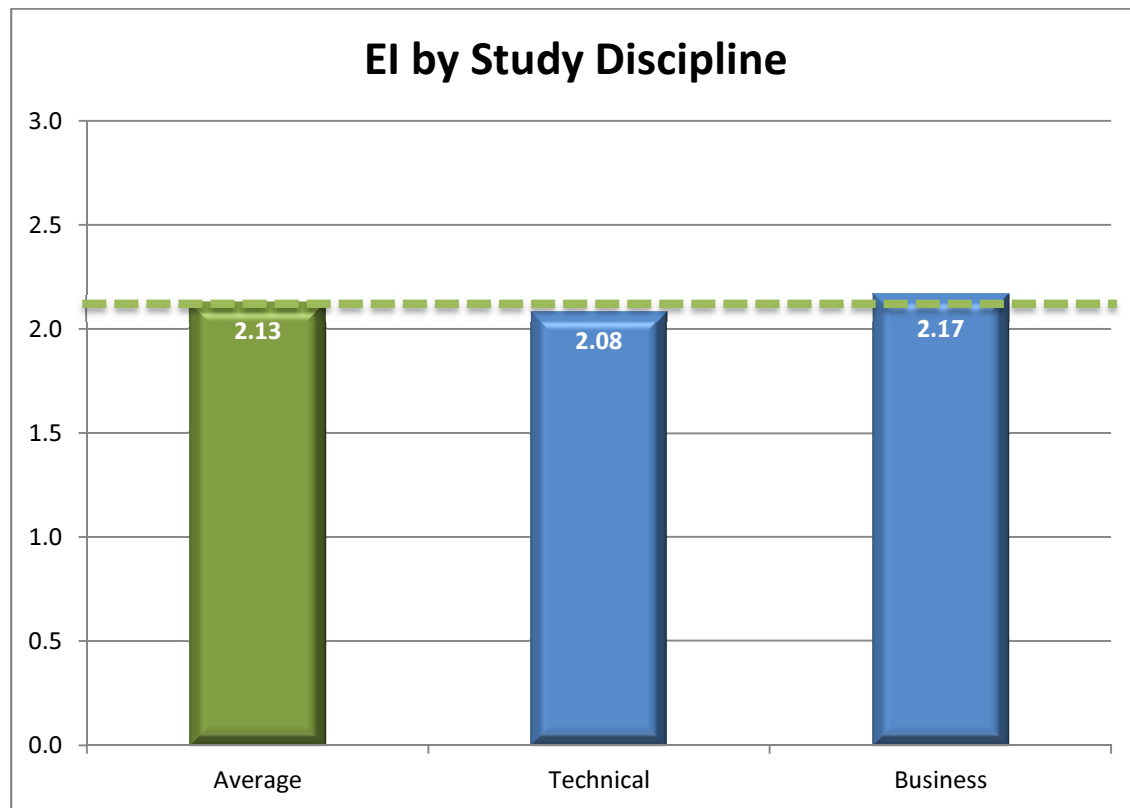
Table 12: T-test for H1(a): Gender and EI

	Mean - Female	Mean - Male	t-statistic	df	p	Lower bound for Mean Difference	Upper bound for Mean Difference
Gender	2.112	2.152	0.407	339.332	0.684	-0.234	0.154
	Valid N - Female	Valid N - Male	Std.Dev. - Female	Std.Dev. - Male	Levene F - Variances	p - Variances	Cohen's d
	196	164	0.904	0.957	4.058	0.045	0.043

The t-statistic of 0.407 with 339 degrees of freedom and a corresponding p-value of 0.684 was not significant at the 5% significance level and as a result it could be concluded that no significant differences exist between the EI of male vs. female FET students. The null hypothesis that the means are equal is therefore not rejected; thus male students do not have higher entrepreneurial intentions than female FET students.

4.4.2 The influence of study-discipline on EI (H1b)

Figure 19: EI by study discipline



The hypothesis for this section of the study is: Students exposed to FET entrepreneurial-related studies have higher entrepreneurial intentions than those in FET technical courses. The mean EI measured on a scale from 0 to 3 indicative of none to high EI, is 2.13. The mean EI of the technical respondents was lower at 2.08 vs. 2.17 for the business respondents.

Prior to conducting the t-test for mean differences, homogeneity of variance between the two groups was tested using Levene's F-test. Table 13 indicates an insignificant Levene's statistic, and as such the null hypothesis that the population variances are equal is not rejected.

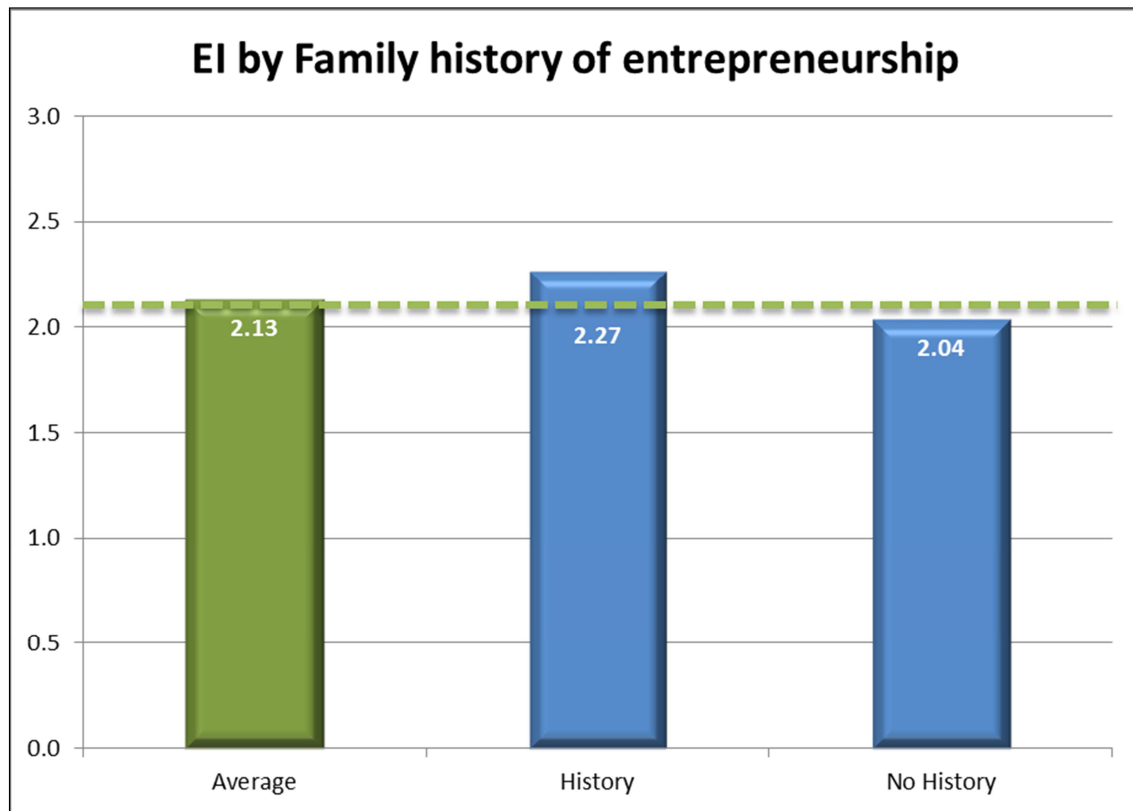
Table 13: T-tests for H1(b) – study discipline and EI

Discipline	Mean - Technical field	Mean - Business management field	t-statistic	df	p	Lower bound for Mean Difference	Upper bound for Mean Difference
	2.084	2.17	0.874	358	0.383	-0.279	0.107
	Valid N - Technical field	Valid N - Business management field	Std.Dev. - Technical field	Std.Dev. - Business management field	Levene F - Variances	p - Variances	Cohen's d
166	194	0.962	0.897	0.843	0.359	0.093	

Table 13 captures the results of the t-test which was conducted assuming equal variances. The t-statistic of 0.874 with 358 degrees of freedom and a corresponding p-value of 0.383 suggests that, at the 5% significance level, there is no significant difference between the EI of FET students undertaking technical vs. business related studies. The null hypothesis that the means are equal is therefore not rejected; thus students exposed to entrepreneurial related studies do not seem to have higher EI than those engaged in technical courses.

4.4.3 The influence of entrepreneurial family-history on EI (H1c)

Figure 20: EI by family history of entrepreneurship



The hypothesis of this section of the study is: students who have members of family who are entrepreneurs have higher entrepreneurial intentions than students who have non-entrepreneurial family members. The mean EI measured on a scale from 0 to 3, indicative of no to high EI, is 2.13. The mean EI of respondents with a non-entrepreneurial family history was lower at 2.04 vs. 2.27 for respondents with an entrepreneurial history.

Levene's F-test for homogeneity of variances was conducted. As evident in the table 14 below, Levene's statistic was insignificant, and as such the null hypothesis that the population variances are equal is not rejected.

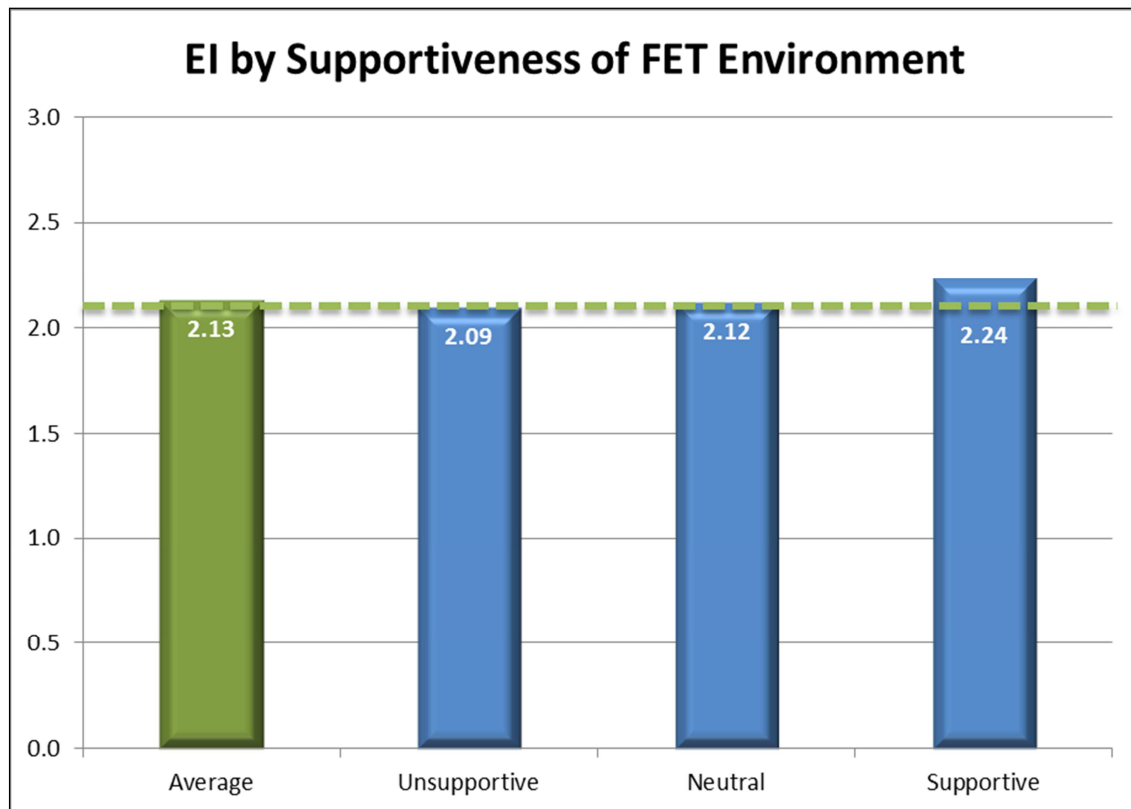
Table 14: T-test for H1(c): Entrepreneurial family-history and EI

	Mean - Yes	Mean - No	t-statistic	df	p	Lower bound for Mean Difference	Upper bound for Mean Difference
Family	2.265	2.037	2.304	358	0.022	0.033	0.422
	Valid N - Yes	Valid N - No	Std.Dev. - Yes	Std.Dev. - No	Levene F - Variances	p - Variances	Cohen's d
	147	213	0.871	0.956	0.127	0.721	0.248

The t-statistic of 2.304 with 358 degrees of freedom and a corresponding p-value of 0.022 confirms that a significant difference in the mean values of entrepreneurial intentions between the two groups does exist. There is, therefore, sufficient evidence to reject the null hypothesis that the means are equal. Thus students with entrepreneurial family members have higher entrepreneurial intentions than students who have non-entrepreneurial family members.

4.5 The Impact of SMME Support Programmes on EI (H2)

Figure 21: EI by self-assessed FET environment supportiveness



The hypothesis of this section of the study is: the promotion of entrepreneurship at FETs through government SMME support programmes has a positive effect on entrepreneurial intentions. This section of the study used regression analysis. The residual histograms for the regression model indicate normal, bell-shaped distributions, thus the assumption of normality is confirmed. Further, the residual scatterplots appear to be random; as a result, we conclude that the residuals are independent and have constant variance. In addition, there are no substantial outliers. Consequently, the regression model is deemed satisfactory.

The mean EI of respondents who found their FET environment unsupportive was the lowest at 2.09, while the mean EI of those respondents who considered their environment neutral was 2.12. The highest EI, 2.24, was recorded for those students who found the environment to be supportive.

Table 15: Regression analysis – SMME-supportiveness and EI

Statistic	FET Environment
Intercept (p-value)	1.930 (0.000)
Beta	0.080
t-statistic	1.512
p-value	0.131
Lower bound for Beta	-0.024
Upper bound for Beta	0.185

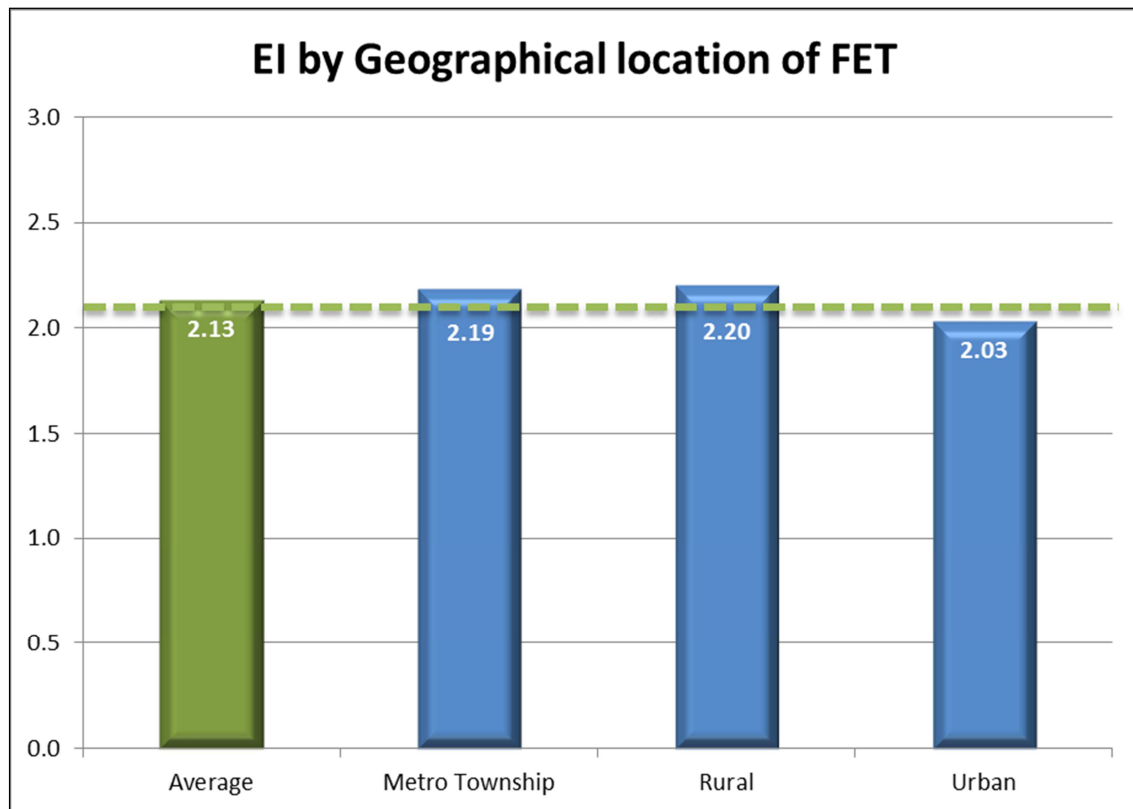
Model Fit	R Square	Effect Size	Statistical Power	Significance
FET Environment	0.006	0.006	0.317	0.131

Table 15 presents the results of regression analysis with SMME support as the independent variable and EI as the dependent variable. The hypothesis that was tested is: The promotion of entrepreneurship at FETs through government SMME support programmes has a positive effect on entrepreneurial intentions.

A direct one-to-one regression between the supportiveness of FETs through exposure to SMME support programmes and EI was conducted, the results of which are depicted in table 15. The Beta coefficient achieved was 0.08 with a corresponding t-statistic of 1.512. The R squared statistic suggests that SMME support explains only 0.06% of the variation in EI. The power of the test was an unsatisfactory 0.31% and the P value (0.131) suggests the relation is not significant at 1%, 5% and 10% confidence levels. There is therefore insufficient evidence to reject the null hypothesis. Thus the results seem to indicate that the promotion of entrepreneurship at FETs through government SMME support programmes does not have a direct positive effect on entrepreneurial intentions.

4.6 The Impact of FET Geographical Location on EI (H3)

Figure 22: EI by geographical location of FET



The hypothesis for this section of the study is: students at urban-based FET colleges have higher entrepreneurial intentions than rural-based FET college students. The mean EI measured on a scale from 0 to 3, indicative of no to high EI, is 2.13. A comparison of mean EIs based on the geographical location of the FET indicated that the mean EI of urban respondents was the lowest at 2.03, while the mean EI of respondents in metro-townships was 2.19, and the highest EI, 2.20, was recorded for rural-based FET students.

As a comparison of means across the three groups was required, an ANOVA test was conducted to analyse the significance of the differences in the means of the groups mentioned above. Prior to this, however, Levene's test for equality of variances was performed to determine if the variances are equal across all the

different groups of management-levels above. Homogeneity of variance is an underlying assumption of ANOVA.

Table 16: Levene's statistic for H3 – FET geographical environment and EI

Levene Statistic	df1	df2	Sig.
2.431	2	357	0.089

Table 16 indicates no significant Levene's statistic and as such the null hypothesis that the population variances are equal was not rejected. The assumption for ANOVA did indeed hold.

Table 17: ANOVA F statistic for H3 – FET geographical environment and EI

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.251	2	1.125	1.310	.271
Within Groups	306.613	357	.859		
Total	308.864	359			

The ANOVA F-statistic achieved 1.310 with degrees of freedom of 2 and 357 and a corresponding p-value of 0.271 confirms that there are no statistically significant differences in the mean values of entrepreneurial intentions amongst students in rural, metro-township and urban FETs. Furthermore, Fisher's LSD multiple comparison tests were run to compare the means for each FET student group with each other. Table 18 below presents the results of the ANOVA for the mean difference between the rural, urban and metro-township FET students. The 95% confidence interval for all groups include 0, giving an additional indication that there might be no difference in the means.

Table 18: Fisher's LSD for H3 – FET geographical environment and EI

Multiple Comparisons (Fisher's LSD)						
(I) FET	(J) FET	Mean Difference (I-J)	Std. Error	p-value	95% Confidence Interval	
					Lower Bound	Upper Bound
Metro	Rural	-0.017	0.128	0.896	-0.268	0.235
	Urban	0.156	0.112	0.162	-0.063	0.376
Rural	Metro	0.017	0.128	0.896	-0.235	0.268
	Urban	0.173	0.129	0.179	-0.080	0.426
Urban	Metro	-0.156	0.112	0.162	-0.376	0.063
	Rural	-0.173	0.129	0.179	-0.426	0.080

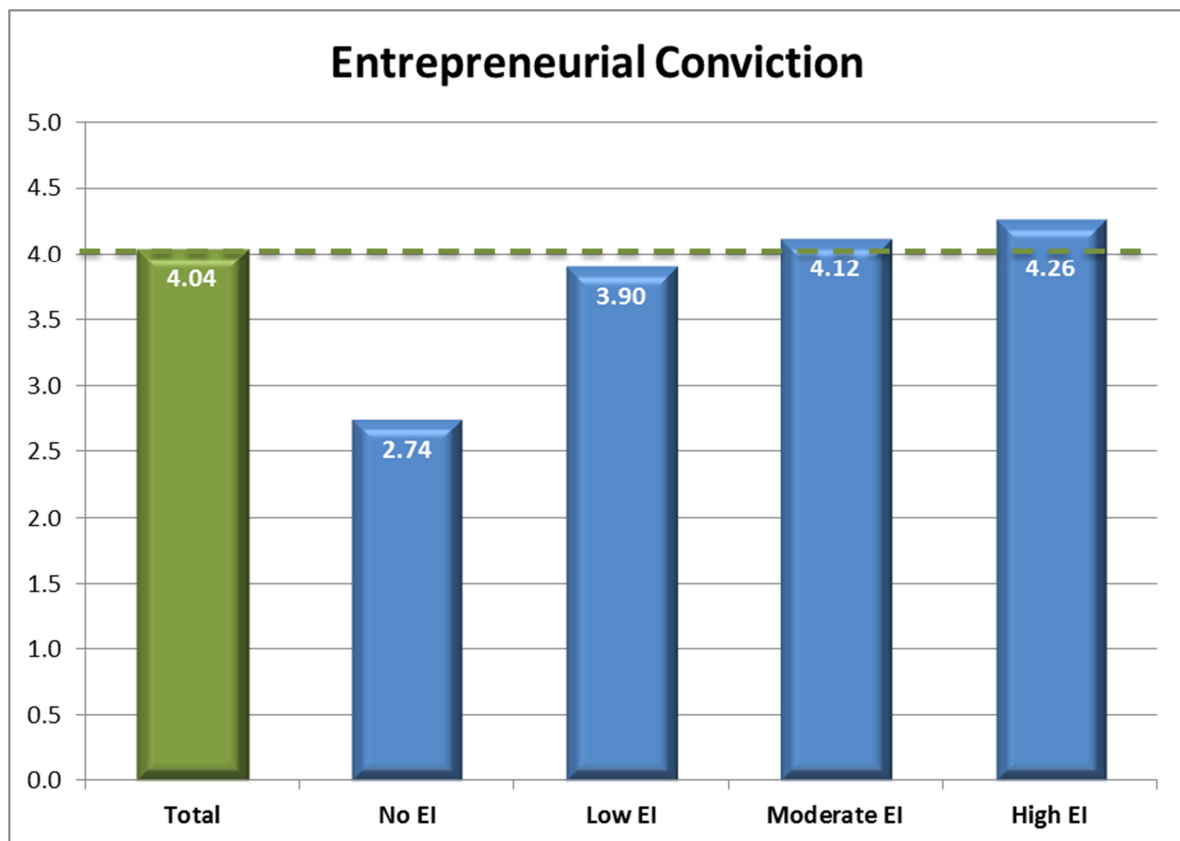
The results in table 8 indicate no significant mean differences across all three FET student groups. There is, therefore, insufficient evidence to reject the null hypothesis. Thus students at urban-based FETs do not have higher entrepreneurial intentions than rural-based FET college students.

4.7 The Association of Antecedents to EI (H4)

The hypothesis of this section of the study is: entrepreneurial conviction has a stronger association compared with FET college environment and image of entrepreneurship regarding the outcome variable of entrepreneurship intention. The EI of respondents was measured on a scale ranging from 0 to 3, being indicative of no to high EI. The question was posed as to how soon after graduation students intend to establish their own businesses. In interpreting the responses, students wishing to start their businesses within 1 to 2 years of graduating from the FET were classified as possessing high EI; those wanting to establish businesses within 3 to 5 years were classified as having moderate EI; while students wishing to wait for 5 or more years were classified as possessing low EI. Prior to the statistical analysis of the hypothesis that entrepreneurial conviction has a stronger association with EI than with the FET environment, students' general attitudes to entrepreneurship, or entrepreneurial image, the data was analysed for trends based on varying levels of EI.

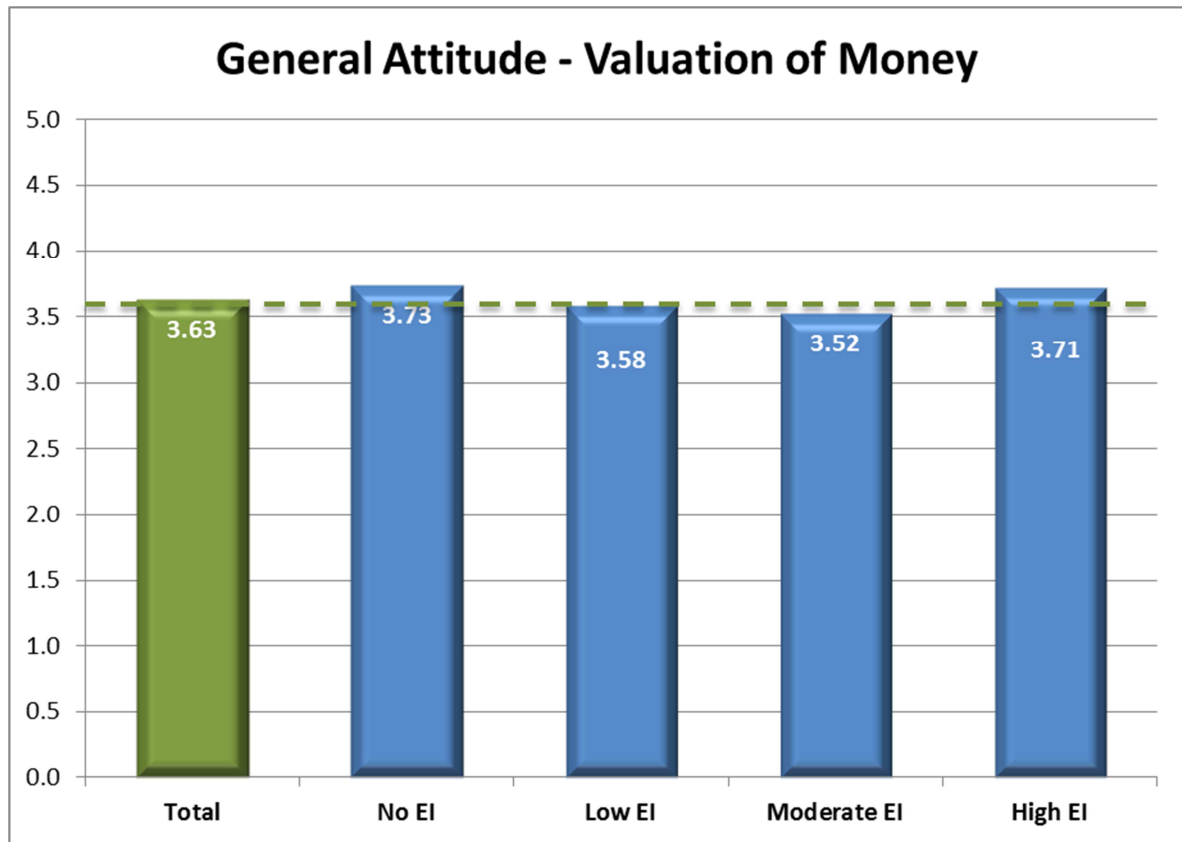
The graph below measures the variation in entrepreneurial conviction given the varying levels of EI of respondents. The mean entrepreneurial conviction measured on a 1-5 point Likert scale is 4.04; however, a strong positive trend of the association of conviction with EI is evident. Respondents with no EI also scored the lowest conviction (2.74), while those with high EI also scored the highest conviction (4.26).

Figure 23: Entrepreneurial conviction per level of EI



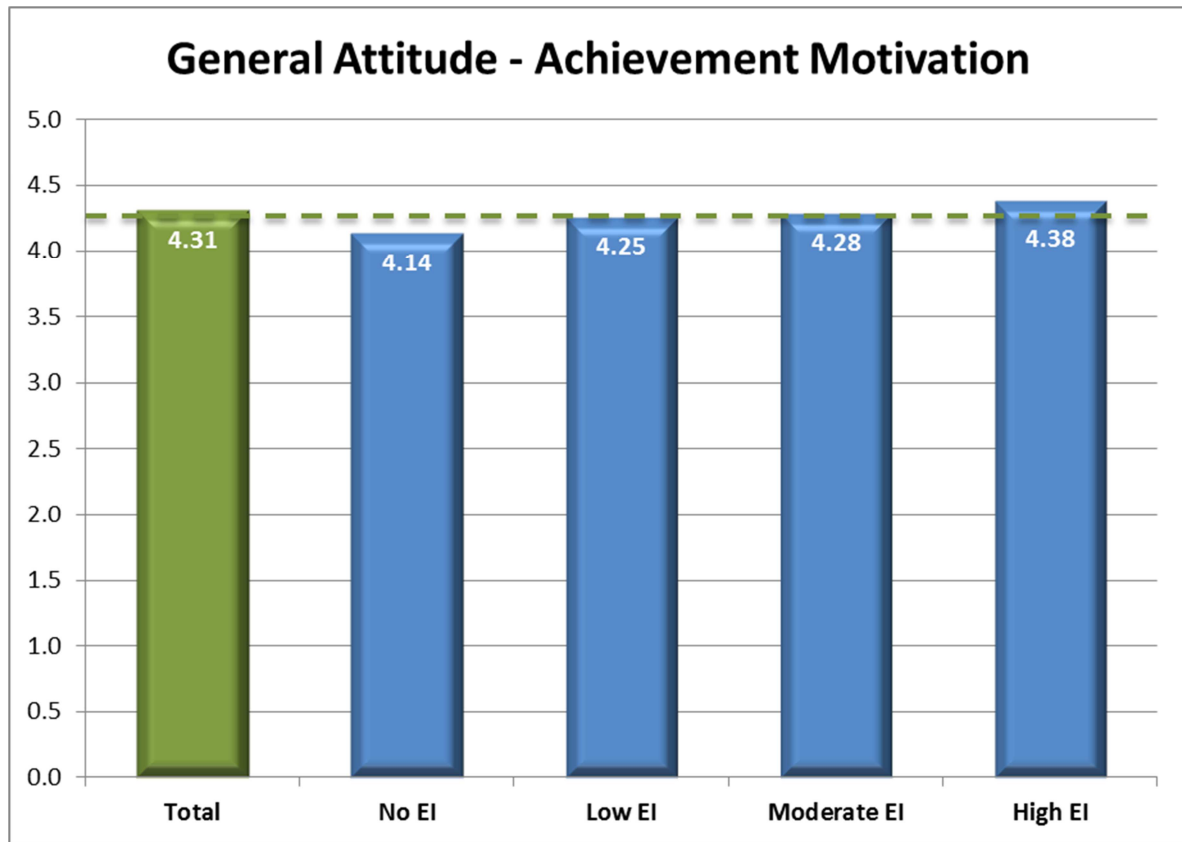
The graph below measures the variation in respondents' valuation of money, which forms one component of the "general attitudes" antecedent, given their varying levels of EI. The mean score for valuation of money is 3.63 and no clear trend emerges on the basis of varying EI.

Figure 24: Valuation of money per level of EI



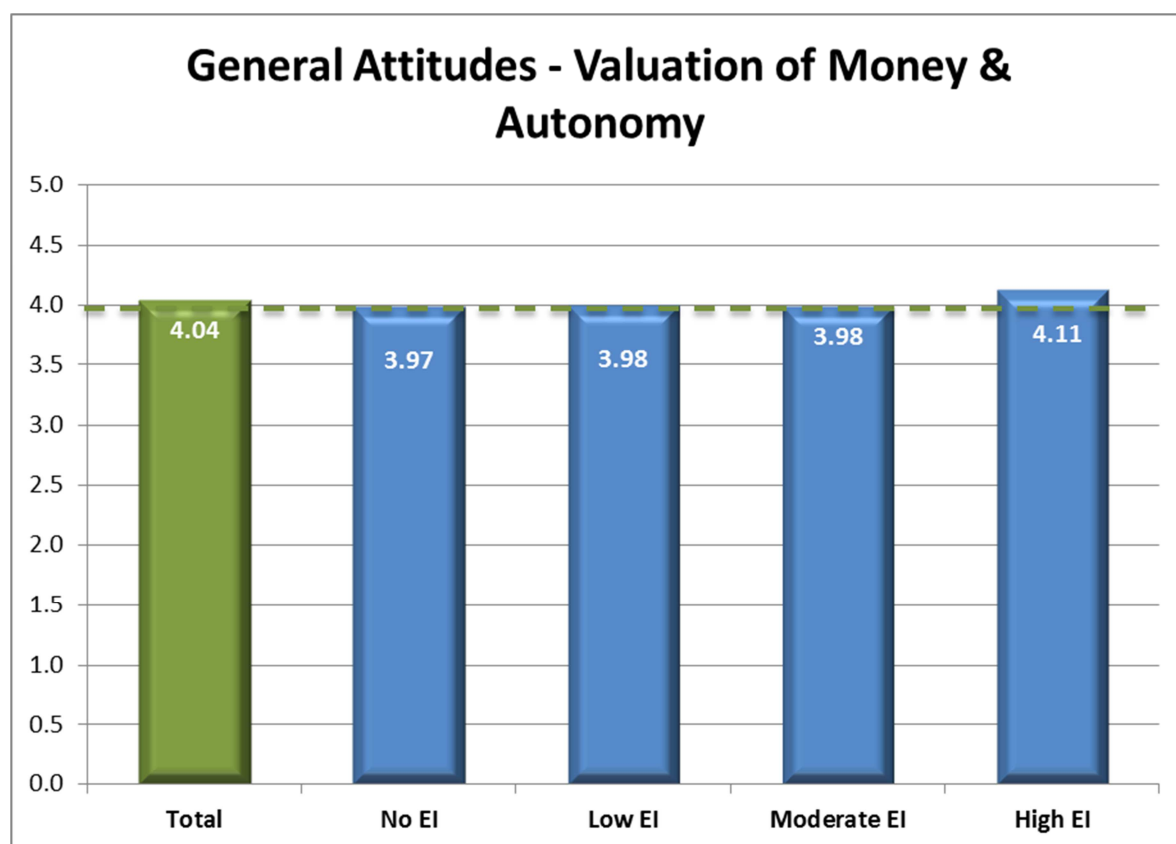
The graph below measures the variation in respondents' achievement motivation, which is the other component of the "general attitudes" antecedent, given their varying levels of EI. The mean score for achievement motivation is 4.31 and a slight positive trend between achievement motivation and levels of EI appears to emerge; however, the means are very close to each other with the lowest being 4.14, while the highest is 4.38.

Figure 25: Achievement motivation per level of EI



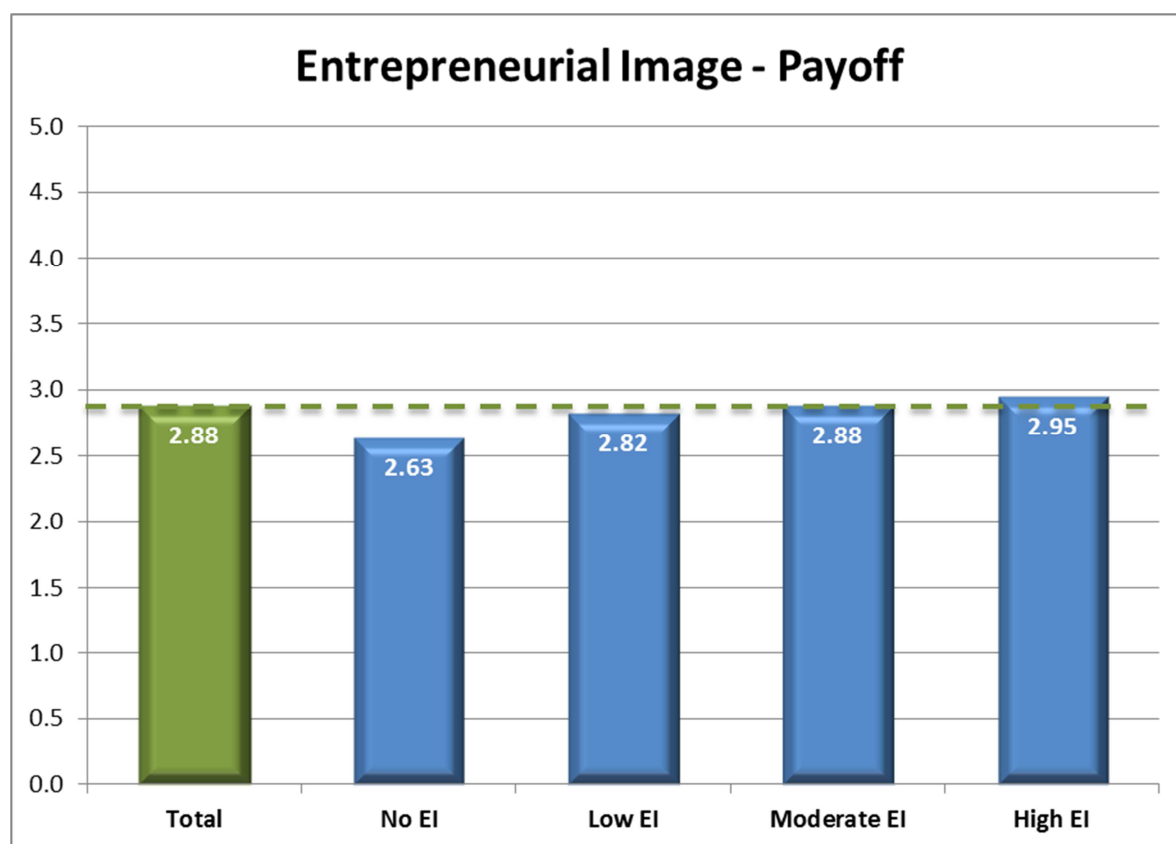
Below is a depiction of the variation in the composite measure of general attitudes, given the respondents' varying levels of EI. The mean overall score for general attitudes towards entrepreneurship, which comprises achievement motivation and valuation of money, is 4.04; a slight positive trend between attitudes and increasing levels of EI appears to emerge. Once again, however, the means are very close to each other with the lowest, which coincides with no EI, being 3.97 while the highest, which coincides with high EI, is 4.11.

Figure 26: General attitudes to money and autonomy per level of EI



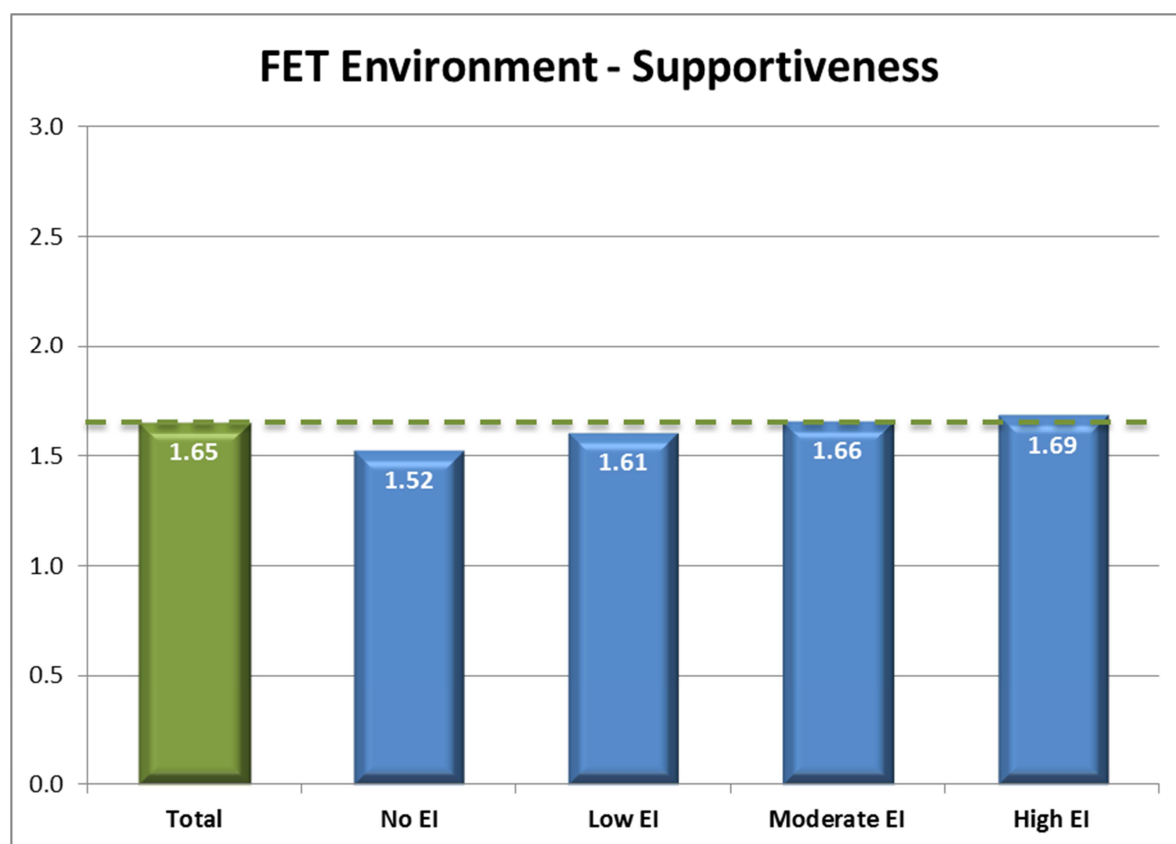
The respondents were asked to score their perception of the image of entrepreneurship vis-à-vis its payoff vs. the levels of input in terms of risk, working hard, and so forth. Below is a depiction of respondents' views on the payoff of entrepreneurship given the respondents' varying levels of EI. What is striking is that despite the overwhelming number of respondents with entrepreneurial intentions (92.50% of the total sample), their perceived payoff is relatively modest, at a mean of 2.88 on a 1-5 Likert scale. Secondly, as with the image of entrepreneurship, a modest trend emerges between payoff and levels of EI, with respondents who have no EI scoring the lowest mean at 2.63 for payoff vs. those with high EI scoring the highest recorded mean level of 2.95 for payoff.

Figure 27: Entrepreneurial image – payoff – per level of EI



Below is a graphical representation of the mean assessment of the extent to which respondents considered their FETs to be supportive of entrepreneurship, through exposing students to government SMME support programmes. A 3-point Likert scale was used for this measure with 1 indicating an unsupportive, 2 indicating a neutral and 3 indicating a supportive FET environment. The mean assessed level of supportiveness of the FET environment was fairly unsupportive at 1.65, and once again, a modest positive trend seemed to emerge between EI and FET-environment supportiveness.

Figure 28: Self-assessed supportiveness of FET environment per level of EI



Having analysed the data through the use of descriptive statistics to provide simple summaries about the sample and measures, inferential statistics was employed to test the hypothesis. The tables below provide the basis for not rejecting hypothesis 4 that entrepreneurial conviction has a stronger association with EI compared with FET environment, entrepreneurial image or general attitudes regarding the outcome variable of entrepreneurial conviction. The relationships were tested in a variety of ways, all of which support not rejecting the hypothesis.

This section of the study was analysed by means of the regression model. The residual histograms for the regression model seem to indicate normal, bell-shaped distributions, thus the assumption of normality is confirmed. Further, the residual scatterplots seem to be random; as a result, it can be concluded that the residuals

are independent and have constant variance. In addition, there are no substantial outliers. Consequently, the regression model is deemed satisfactory.

Secondly, all independent variables were independently tested for a direct relationship with EI. Table19 shows the results of the direct relationship of each independent variable to the dependent variable, in decreasing order of significance at the 95% confidence level. It is evident that entrepreneurial conviction has the most significant regression coefficient (Beta).

Table 19: Regression analysis – antecedents and EI

Model Fit	R Square	Effect Size	Statistical Power	Significance
Entrepreneurial Conviction	0.198	0.247	1.000	0.000
FET Environment	0.006	0.006	0.317	0.131
Entrepreneurial Image	0.013	0.013	0.596	0.030
Money	0.001	0.001	0.082	0.480
Achievement	0.022	0.022	0.819	0.005
General Attitudes (Money & Achievement)	0.014	0.014	0.628	0.026

Statistic	Entrepreneurial Conviction	FET Environment	Entrepreneurial Image	Money	Achievement	General Attitudes (Money & Achievement)
Intercept (p-value)	-0.081 (0.735)	1.930 (0.000)	1.691 (0.000)	1.982 (0.000)	0.836 (0.068)	1.176 (0.007)
Beta	0.445	0.080	0.114	0.037	0.149	0.117
t-statistic	9.405	1.512	2.174	0.707	2.850	2.232
p-value	0.000	0.131	0.030	0.480	0.005	0.026
Lower bound for Beta	0.432	-0.024	0.015	-0.073	0.093	0.028
Upper bound for Beta	0.661	0.185	0.290	0.154	0.508	0.445

Table 19 presents the results of regression analysis with six antecedents as the independent variables and EI as the dependent variable. The sixth antecedent is a composite of general attitudes comprising valuation of money and valuation of achievement. The hypothesis that was tested is: entrepreneurial conviction has a stronger association with EI compared with FET college environment and image of entrepreneurship with regards to the outcome variable of entrepreneurship intention.

A direct one-to-one regression between each antecedent and EI was conducted, the results of which are depicted in table 19. The interpretations of each result pertaining to the antecedents appear below.

i. **Entrepreneurial conviction**

The Beta coefficient achieved was 0.445 with a corresponding t-statistic of 9.405. The R squared statistic suggests that conviction explains only 19.8% of the variation in EI. The power of the test was a satisfactory 100% and the P value 0.000. Further, the lower bound 95% confidence interval for beta is greater than 0 and so is the upper bound, thus providing additional evidence that the association between conviction and EI is significant. The results appear to indicate that the conviction has the strongest association with EI and therefore a direct positive effect on entrepreneurial intentions.

ii. **FET Environment**

The Beta coefficient achieved was 0.080 with a corresponding low t-statistic of 1.512. The R squared statistic suggests that FET environment explains only 0.6% of the variation in EI. The power of the test was an unsatisfactory 31.7% and the P value 0.131. Further, the lower bound 95% confidence interval for beta is less than 0; however, the upper bound is greater than 0, thus providing additional evidence that the association between the FET environment and EI is not significant. In summary, the results appear to indicate that FET environment has a weak association with EI and therefore has a minimal direct positive effect on entrepreneurial intentions.

iii. **Entrepreneurial Image**

The Beta coefficient achieved was 0.114 with a corresponding low t-statistic of 2.174. The R squared statistic suggests that entrepreneurial image explains only 1.3% of the variation in EI. The power of the test is a satisfactory 59.6%. The P value is 0. Further the lower bound 95% confidence interval for beta is less than 0; however, the upper bound is greater than 0. Thus, the results appear to indicate that entrepreneurial image has a weak association with EI; therefore it has a minimal direct positive effect on entrepreneurial intentions.

iv. **General attitudes (Money)**

The Beta coefficient achieved was 0.037 with a corresponding low t-statistic of 1.982(0.000). The R squared statistic suggests that money explains only 1% of the variation in EI. The power of the test was an unsatisfactory 8.2% and the P value, 0.480. Further, the lower bound 95% confidence interval for beta is less than 0; however, the upper bound is greater than 0. Thus, the results seem to indicate that money has a weak association with EI and a minimal direct positive effect on entrepreneurial intentions.

v. **General attitudes (Achievement)**

The Beta coefficient achieved was 0.149 with a corresponding low t-statistic of 2.850. The R squared statistic suggests that achievement explains only 2.2% of the variation in EI. Even though general attitudes is significant at the 10% confidence level, the magnitude of the said variance is very low. The power of the test was a satisfactory 81.9% and the P value was 0.005. Further, the lower bound 95% confidence interval for beta is less than 0; however, the upper bound is greater than 0. In sum, the results seem to indicate that achievement has a weak association with EI and a minimal direct positive effect on entrepreneurial intentions.

vi. **General attitudes (Money and Achievement)**

General attitudes were also measured as a composite of money and achievement. The Beta coefficient of the composite achieved was 0.117 with a corresponding low t-statistic of 2.232. The R squared statistic suggests that achievement explains only 1.4% of the variation in EI. The power of the test was 62% and the P value is 0.026. Further, both the lower and upper bound 95% confidence interval for beta are greater than 0. Thus, the results seem to indicate that achievement has a weak positive association with EI and has minimal direct positive effect on entrepreneurial intentions.

Secondly, stepwise regression analysis was conducted in order to determine the association of the antecedents with EI. Table 20 presents the results of the stepwise regression. The dependent variable for the test is EI and all the antecedents that were tested constitute the independent variables.

Table 20: Stepwise regression – Antecedents and EI

Multiple Regression					
Variable	Beta	t-statistic	p-value	Lower bound	Upper bound
Intercept	-0.606	-1.264	0.207	-1.549	0.337
Entrepreneurial Conviction	0.437	8.819	0.000	0.417	0.656
FET Environment	0.088	1.860	0.064	-0.005	0.182
General Attitudes (Money & Achievement)	0.006	0.112	0.911	-0.186	0.208
Entrepreneurial Image	0.078	1.628	0.104	-0.022	0.230

Stepwise Regression					
Variable	Beta	t-statistic	p-value	Lower bound	Upper bound
Intercept	-0.081	-0.338	0.735	-0.551	0.389
Entrepreneurial Conviction	0.445	9.405	0.000	0.432	0.661

Model Fit	R Square	Effect Size	Statistical Power	Significance
Multiple Regression	0.211	0.267	1.000	0.000
Stepwise Regression	0.198	0.247	1.000	0.000

The Beta coefficient for conviction is 0.445 with a corresponding t-statistic of -0.338. The R squared statistic suggests that conviction explains only 21.1% of the variation in EI. The significance level is 0.000. The power of the test was a satisfactory 100% and the P value of 0.000 suggests a strong association with EI. Therefore the model fit of multiple regression and stepwise regression indicate a significant association of conviction with EI. Thus the results appear to indicate that conviction has the strongest positive association with EI.

Further, the hypothesis was tested using regression analysis. In interpreting the results, Cohen's (1988) convention was applied whereby an effect size of 0.1 is considered small, 0.3 medium and 0.5 and above, large. The correlation results are presented in table 21.

Lastly, prior to conducting regression analysis, a correlation matrix was computed in order to assess the relation between variables and to assess potential multicollinearity. The correlation matrix for the sample of this study is displayed in the table 21.

Table 21: Correlation matrix – antecedents and EI

		EI	FET Average	Conviction Average	Image Average	Money Average	Achievement Average	Attitude Average
Entrepreneurial Intention	Pearson Correlation	1	0.08	.445**	.114*	0.037	.149**	.117*
	Sig. (2-tailed)		0.131	0	0.03	0.48	0.005	0.026
	N	360	360	360	360	360	360	360
FET Environment	Pearson Correlation	0.08	1	-0.008	-0.061	0.01	-0.045	-0.02
	Sig. (2-tailed)	0.131		0.884	0.251	0.851	0.394	0.709
	N	360	360	360	360	360	360	360
Entrepreneurial Conviction	Pearson Correlation	.445**	-0.008	1	0.096	.154**	.274**	.279**
	Sig. (2-tailed)	0	0.884		0.068	0.003	0	0
	N	360	360	360	360	360	360	360
Entrepreneurial Image	Pearson Correlation	.114*	-0.061	0.096	1	-0.08	-0.08	-.107*
	Sig. (2-tailed)	0.03	0.251	0.068		0.132	0.131	0.043
	N	360	360	360	360	360	360	360
Money	Pearson Correlation	0.037	0.01	.154**	-0.08	1	.104*	.802**
	Sig. (2-tailed)	0.48	0.851	0.003	0.132		0.049	0
	N	360	360	360	360	360	360	360
Achievement	Pearson Correlation	.149**	-0.045	.274**	-0.08	.104*	1	.678**
	Sig. (2-tailed)	0.005	0.394	0	0.131	0.049		0
	N	360	360	360	360	360	360	360
General Attitudes (Money & Achievement)	Pearson Correlation	.117*	-0.02	.279**	-.107*	.802**	.678**	1
	Sig. (2-tailed)	0.026	0.709	0	0.043	0	0	
	N	360	360	360	360	360	360	360

**p < 0.01 (i.e. significant at the 1% significance level)

*p < 0.05 (i.e. significant at the 5% significance level)

Based on table 21 it is observed that correlation coefficients range from -0.02 to 0.445. The correlations are moderate, although some are statistically significant. Cooper and Schindler (2001) suggest correlations above 0.4 are moderate to strong and should be large enough to be statistically significant at $p=0.05$ or below.

The correlation matrix seems to confirm that:

- Conviction is the highest positively correlated variable to EI ($r= 0.445$, $p<0.01$);
- General attitudes (achievement and motivation as a composite) is also positively correlated to EI ($r= 0.279$, $p< 0.01$);
- Achievement as a stand-alone construct is positively correlated to EI ($r=0.274$, $p<0.01$);
- Money as a stand-alone construct is positively correlated to EI ($r=0.154$, $p<0.01$).

All other antecedents appear to have a weak positive association with EI. It is important to note that this study does not focus on the association between the antecedents themselves. It only focuses on each antecedent compared with EI; thus, those results are not discussed in this report.

In conclusion, this section of the study covers the following tests that were conducted: correlation matrix, multiple regression and stepwise regression. The results of all these tests indicate that that entrepreneurial conviction has a moderate positive correlation with EI, while all the other tested antecedents – general attitudes, entrepreneurial image and FET supportiveness – have weak but positive correlations with EI. Thus the hypothesis that entrepreneurial conviction has the strongest positive correlation with EI compared with those of

image of entrepreneurship, general attitudes and FET supportiveness, was not rejected.

4.8 Summary of the Results

The EI of respondents was measured on a scale ranging from 0 to 3, being indicative of no to high EI, which was linked to the speed with which students intended to establish their businesses after graduation. Although on the face of it, clear trends between EI and various antecedents and independent variables seemed to emerge; however, inferential statistics provided the basis for rejecting most of the hypotheses that had originally been posed on the basis of the literature review undertaken. It was hypothesised that personal background would significantly affect the EI of respondents. However, the only personal background factor for which a clear association with EI emerged was family history; otherwise, neither gender nor field of study proved significant in explaining any variations in EI. Similarly, the promotion of entrepreneurship through exposure to government SMME support programmes indicated to be insignificant in explaining variation in levels of EI. The geographical setting of the FETs similarly indicated insignificance in accounting for variations in levels of EI.

Antecedents to EI were tested for the strength of their association with the outcome variable of EI. As hypothesised, entrepreneurial conviction indicated to have the strongest correlation with EI, which exceeded the correlations of the other antecedents that were tested, namely the image of entrepreneurship (payoff thereof), general attitudes of students towards entrepreneurship (measured as a composite of students' valuation of money, and their achievement motivation), and lastly, the supportiveness of FET environments through exposing students to SMME support programmes. All of these other antecedents indicated a low positive correlation with EI, whereas conviction revealed a moderate positive correlation to EI. A summary of the findings is presented in table 22.

Table 22: Summary of research findings

Hypothesis		Finding
H1	Personal background variables of FET students such as gender, discipline of study and family members who are entrepreneurs, have a positive correlation to entrepreneurial intentions.	1a: Male FET students have higher entrepreneurial intentions than female FET students. ✗ Rejected
		1b: Students exposed to FET entrepreneurial-related studies have higher entrepreneurial intentions than those in FET technical courses. ✗ Rejected
		1c: Students who have entrepreneurial family-members have higher entrepreneurial intentions than students who have non-entrepreneurial family members. ✓ Failed to reject
H2	The promotion of entrepreneurship at FETs through exposure to government SMME support-programs has a positive effect on entrepreneurial intentions	✗ Rejected
H3	Students at urban-based FET colleges have higher entrepreneurial intentions than rural-based and metro-township-based FET-college students.	✗ Rejected
H4	Entrepreneurial conviction has a stronger association than FET college environment, image of entrepreneurship and general attitudes on the outcome variable of entrepreneurship intention.	✓ Failed to reject

Source: Author (2011)

CHAPTER 5: DISCUSSIONS ON FINDINGS OF THE STUDY

5.1 Introduction

The data analysis began with the focus falling on the personal backgrounds of students. Personal background variables were sub-categorised into gender (H1a), study-discipline (H2b) and entrepreneurial family-background (H1c). The hypotheses H2 and H3 tested the impact of the FET environment on EI by examining the roles played by exposure to government support programmes (FET supportiveness) and FET geographical location, respectively, while H4 aimed to establish which antecedents among the ones tested – conviction, FET supportiveness, general attitudes and entrepreneurial image – had the strongest association with EI.

5.2 Demographic Profile of Respondents

The study concentrated on students registered in their final year of study at five (5) public FETs located in Gauteng, KZN, Mpumalanga and Limpopo provinces in South Africa. Initially, the study had aimed to reach 250 students at 2 FETs in 2 provinces, namely Limpopo and Mpumalanga. The number of participants escalated to 360 due to the inclusion of KwaZulu-Natal (1FET) and Gauteng (2 FETs). The decision to increase the study scope was aimed at covering a wider geographical spread in order to increase the generalisability of the findings.

Geographically, the five FETs were sub-categorised into three categories, namely rural, urban and metro-township locations. An almost equal number of the respondents stemmed from metro-townships (140 (39%)), and from urban locations (136 (38%)), while the remaining 84 (23%) were located in rural areas.

The age group of the respondents was 18 and 35 years, which falls into the official definition of “youths” in South Africa. Of the total 360 respondents, 164 (46%) were male while 196 (54%) were female. With 71% of all participants falling into this category, the vast majority of the respondents were between 21 and 25 years of age. The other age-category ranges for this research were 16-20, 21-25, 26-30 and 31-35.

In terms of discipline of study, 166 (46%) of the respondents were pursuing technical courses vs. 194 (54%) engaged in entrepreneurship related studies. Lastly, 213 (59%) participants had no entrepreneurial family-background, while 147 (49%) had some family history of entrepreneurship.

5.3 Impact of Exogenous Variables on the EI of Students

According to Shapero and Sokol (1982), exogenous influences affect attitudes, intentions and behaviours to become entrepreneurs. The first hypothesis of the study was, therefore, that the personal background variables of gender, study discipline and having a family history of entrepreneurship have a positive correlation with entrepreneurial intentions.

5.3.1. *The influence of gender on EI of students*

Most of the literature reviewed on the topic of gender influences on entrepreneurship (e.g. Brush, 1992) indicated that males are more inclined to found businesses than their female counterparts would, even when they originate from similar backgrounds. Hypothesis H1(a) of this study is therefore, that male FET students have higher entrepreneurial intentions than female FET students. Despite the numerous studies that have revealed that gender stereotypes influence the intentions of men and women to pursue entrepreneurial careers differently (e.g. Gupta *et al.*, 2008), in this study, the null hypothesis that the mean EIs of female vs. male respondents are equal was not rejected. Thus, male students do not have higher entrepreneurial intentions

than female FET students. This therefore gives an indication that in the EI models, gender as a construct may not have such a great overall influence on the EI of students.

The measure of mean EI took into account the different time scales in which respondents intended to realise their entrepreneurial intention. Respondents intending to found businesses within the short term (within 1-2 years of graduation) were taken to exhibit high EI, while the intent of respondents to found businesses within the medium term (3-5 years after graduation) exhibited moderate EI, and those intending to found businesses in the long term (more than 5 years after graduation) exhibited low EI. This approach of temporal consideration is based on the view that EI is defined as the probability of starting a business in the near future; therefore, it is not inconceivable that the closer that future date is, the higher the EI, as those students would have made the necessary plans towards realising their ambitions. It is on this basis that students who intend to start ventures within 1-2 years after completion of their studies have been viewed as exhibiting higher EI than those with longer term plans.

Failing to reject the null hypothesis constituted an acknowledgement that no statistical differences in the mean EIs based on gender were found. Interestingly, another finding that emerged was that similarly high numbers of male vs. female respondents had the absolute intention to start businesses at some point in the future, even without further categorising the intention into the different periods, with no differences emerging based on gender. Of the total sample of 360 respondents, 333 (92.5%) indicated intentions to start their own businesses at some point, while only 27 (7.5%) had no such intentions. Of the 196 female and 164 male respondents, 180 (91.84%) females and 153 (93.29%) males intended to found businesses in future.

These findings were contrary to most of the literature reviewed, for instance, de Wit and van Winden (1989) who found massive overrepresentation of males among business founders, and Reynolds (1995), who found more than twice as

many nascent entrepreneurs among males than females in the United States. In line with this study's findings of high EI among female participants, a study conducted by Finmark Trust (2007) found that females were more likely to own a business, but were less likely to access finance than their male counterparts.

There are a number of reasons that could explain the high EI levels among female participants in this study. Women economic empowerment is a topical issue and is one of main agenda drivers within the South African government. This is evident in policy directives such as broad-based black economic empowerment (BBBEE), new growth path (NGP), and so forth. This broad policy directive has led to the establishment of institutions that support the broad female agenda through such initiatives as the establishment of the Department of Women, Children and People with Disabilities. Other initiatives include the launch of the Isivande Women's Fund by the DTI and financial services group, Old Mutual, with the aim of providing small women-owned businesses with more affordable, usable and responsive financial solutions.

Similarly, Technology for Women in Business (TWIB), which is also supported by the DTI, is a national initiative aimed at the application of science and technology to achieve business growth in women-led enterprises, particularly in SMMEs. Other government agencies such as the NYDA, SEDA, the South African Micro-Finance Apex Fund (SAMAF), the National Empowerment Fund (NEF) and Khula, remain key in the advancement of women economic empowerment, even though, as it is important to note, these institutions do not only service females.

Even though students may not fully understand all of these programmes, their existence could potentially explain the high EI exhibited by females, as this broad concept of women empowerment has become part of daily discourse and media publication. This drive may, therefore, explain that females in general are now socialised differently on economic issues and may thus have become more risk savvy compared to earlier generations, and thereby exhibit EI as high as that of their male counterparts.

5.3.2. The influence of entrepreneurial-related studies on EI of students

Hypothesis H1(b) of the study is: FET students exposed to entrepreneurial-related studies have higher entrepreneurial intentions than students in technical courses. In a study conducted by Clark *et al.* (1984), they found that at an American university almost 80% of the students who enrolled in an introductory entrepreneurship course were considering to start their own businesses, and 76% of these students stated that the entrepreneurship course had a very strong effect on their decision to found a new business.

Ewert and Baker (2001) argue that higher education differentially prepares people humanistically and technically; individuals in different major academic fields who gain different knowledge, may play a mediatory role with regards to various entrepreneurship abilities. Guerrero *et al.* (2008), in a study of Spanish university students, reported that students with major subjects that are entrepreneurial-related scored the highest results in the inclination towards entrepreneurship. Schwarz *et al.* (2009) found that students registered in the study of 'business' possess a higher EI than students in the field of the humanities and sciences of technology; the likely reason that they provided was that the business students have the most extensive possibilities to learn entrepreneurship.

Referring to the sample of this study, 166 (46.1%) participants were pursuing technical studies and 194 (53.9%), business (entrepreneurial) related studies. As previously discussed, the nature of the FET curricula leaves very little overlap among courses to which students in different study disciplines are exposed, and consequently, technical students have limited, if any, exposure to entrepreneurial-related studies. Despite this limited exposure, 152 (91.57%) of the 166 technical students indicated intentions to start their own businesses at some point in time. This was very comparable to their peers in entrepreneurial-related studies, where 181 (93.30%) of the 194 students surveyed indicated intentions to start their own businesses in the future. Even though the mean EI

of technical respondents was lower at 2.08 vs. 2.17 for business respondents, these differences were not statistically significant, thus forming the basis for failing to reject the null hypothesis that the mean EIs of technical vs. entrepreneurship students are equal.

The 2011 GUESSS (Sieger *et al.*, 2011) study found that the majority (70.6%) of South African students surveyed viewed themselves as prospective intentional business founders. This was considerably higher than that reported in the international sample. Therefore, the finding of a considerable percentage of students – 92.5% of respondents in this study – who are considering entrepreneurship as a career option is in line with the GUESSS 2011 (*Ibid*) findings, even though that study had not included students in technical courses. Of the SA respondents, 42.8% indicated that they would be interested in establishing enterprises to address social and/or environmental issues. It is fair to extrapolate, that these same social and environmental considerations, which provided impetus for the founding of prospective businesses by university students, would be equally pertinent and obvious to the FET students who constituted the subjects of the current study. The SA societal context into which students are graduating could therefore account for the high percentages of respondents with EI, as well as for why there are no differences in the mean EIs of students, based on their fields of study.

The current study found that 42.8% of participants indicated that they would like to start their businesses in 1-2 years (an indication of high EI) of graduation, while 35% indicated their intention to found their businesses in 3-5 years after graduation (moderate EI). When high-EI and moderate-EI respondents are clustered as intentional founders, this study found 77.8% of participants to be intentional founders, which is comparable to the 70.6% in the GUESSS study (Sieger *et al.*, 2011). In the latter, students with repeated thoughts of starting their own businesses, who had relatively concrete plans and/or who had already started realising plans to found their businesses were included in the definition of “intentional founders”. It is not unreasonable to compare those GUESSS

respondents with students who, in the current study, intend to realise the founding of a business within 1-5 years, as this relatively short time frame would require that students would have started taking some fairly concrete steps towards realising their intentions.

According to Wilson *et al.* (2007), education develops the general skills and competencies that enhance the abilities of students to recognise opportunities, assemble resources and otherwise lead businesses more successfully. This study indicates that education in general enhances students' entrepreneurial efficacy irrespective of their discipline of study. This also falls in line with the study carried out by Basu and Virick (n.d), who concluded that general education can influence students' entrepreneurial attitudes and entrepreneurial self-efficacy. Shapero and Sakol (1982) argue that graduation is a triggering event whereby at this stage of the student's life, the individual is open to different career options that become probable. According to GUESSS (*Ibid*), the same applies to the encouragement and exposure that academics and mentors offer to students in the tertiary education environment. This notion may, therefore, explain why this study found overall high EI at FETs, both in terms of high mean EI and high proportions of respondents with some intentions to found businesses in the future.

While Chen *et al.* (1998) took the view that there is little empirical evidence to suggest that entrepreneurship education and training have an influence on entrepreneurial efficacy, the relatively high EI of both students, irrespective of their exposure to entrepreneurship education, rather leads this researcher to concur more with the assertion by Basu and Virick (n.d.) that it is general education that increases the self-efficacy of students including in relation to entrepreneurship (rather than entrepreneurship education per se). A study conducted by Wu and Wu (2008) found that the intentions to become entrepreneurs were higher among engineering (technical) students than among students with the other majors, including those related to entrepreneurship.

There are various possible explanations to these findings. The study conducted by Wu and Wu (*Ibid*) seems to contribute to explaining the findings in this study of a narrow range of EI levels between technical students and students in entrepreneurship related studies. In their study, they found that engineering students possessed higher EI compared to students in other disciplines of study. Further, as discussed under H1(a), entrepreneurship and black economic empowerment are economic and political agendas that the South African government is pursuing vigorously. This could be a major contributor to the overall high EI of students regardless of their discipline of study. Another contributing factor to the high levels of EI, as discussed previously, could be the societal context in which South African students live. Part of the solution to the highly-publicised problems of unemployment, low economic growth rates and an economy unable to absorb current levels of graduates would seem to lie in students' active participation in increasing economic output through entrepreneurship.

5.3.3. *The influence of entrepreneurial family background on the EI of students*

Hypothesis H1(c) of the study is: Students who have entrepreneurial family members have higher entrepreneurial intentions than students who have non-entrepreneurial family members. Imperial research indicates that children who grow up in a family where one or both parents are entrepreneurs would be more likely to start their own businesses as well (Katz and Green, 2009: p. 40; Dyer and Handler, 1994: p. 71; Hoy and Verser, 1994: p. 9).

Empirical research suggests that exposure to family business serves as a mediating role with regards to intentions, which has been defined in literature as an intergenerational influence (IG) (Mead, 1934). IG is entrenched in sociological and psychological theories that focus on the socialisation of children; hence the conclusion that families contribute to children adopting

certain social roles and behaviours that are necessary to participate in society (Brim, 1968).

Family business history can be understood as an IG influence agent, given that IG serves as a mechanism whereby “the within-family transmission of information, beliefs, and resources” occurs (Moore, Wilkie and Lutz, 2002: 17). Empirical research regarding entrepreneurial family business background also supports this argument. Dyer and Handler (1994) and Katz (1992) put forward a notion that early exposure to entrepreneurship and experience in the family business will affect the family member's attitude and intentions towards entrepreneurial action.

In this study, of the 360 participants, 147 (40.83%) have entrepreneurial family history, and of these, 139 (94.56%) have entrepreneurial intentions, while 8 (5.44%) have none. The overall mean EI was 2.13, while the mean EI of respondents with no family-history of entrepreneurship was lower at 2.04 vs. a mean of 2.27 for respondents with some entrepreneurial family-history. Statistical testing confirmed the statistical significant difference between the mean EI of these two groups of respondents, thus students with the said family history were shown to have higher entrepreneurial intentions than students who have non-entrepreneurial family members. This finding was, therefore, in line with empirical research conducted by a number of researchers such as Katz and Green (2009), Dyer and Handler (1994), and Hoy and Verser (1994).

Despite the overrepresentation of males in the field of entrepreneurship, the most consistent result in entrepreneurship research is the marked overrepresentation of individuals with close role models among business founders (Raijman, 2001). The implications of this are important as, according to GUESSS (Sieger *et al.*, 2011), there is still low family-business involvement among South African students – 41.1%.

5.4 The Impact of SMME Support Programs on the EI of Students

The second hypothesis of the study is: the promotion of entrepreneurship at FETs through exposure to government SMME support programmes has a positive effect on entrepreneurial intentions. According to Shane (2001), investigating the relationship between institutions and EI is important since the institutional environment plays an important role in determining the throughput of entrepreneurs through the extent to which it enhances or limits entrepreneurial aspirations and opportunities.

Many authors (e.g. Luiz, 2008; Stiglitz, 2006) put forth a similar argument that it is the extent to which institutions are able to adopt and encourage entrepreneurial behaviour that entrepreneurship itself arises. Urban (2006) indicates that multiple dimensions relating to the South African socio-economic landscape such as those relating to the prescribed regulation, inter alia, need to be addressed as part of preparing the said landscape correctly in order to stimulate and enable entrepreneurship.

Students were asked to rate how supportive of entrepreneurship the FET environment is by indicating the extent to which they had been exposed to government SME support programmes within the FET environment. In the light of the arguments linking the FET environment to the resulting EI levels amongst students, this question was key. Further, according to GEM 2011 (Kelley *et al.*, 2012), one of the gaps in youth entrepreneurship is that young people are not aware of government SME support programmes. This measure of FET support was self-assessed and therefore purely subjective and reflective of each respondent's personal opinion.

Of the total 360 respondents, the vast majority – 233 people – considered their FET environment to be unsupportive, while 43 considered theirs neutral, and only 84 considered their environment to be supportive of entrepreneurship through promoting exposure to SME support programmes. Interestingly,

students' assessments of the FET environment played no significant role in their intentions to found businesses in future. Admittedly, at 95.2%, the relative split of students with some vs. no entrepreneurial intentions was highest among students who considered the environment to be supportive. However, the trend of the vast majority of students who indicated some intentions to found businesses was evident, even among amongst students who considered the environment to be unsupportive (91.8%) or neutral (90.7%).

Similarly, although the mean EI of respondents whose assessment indicated a supportive FET environment was the highest at 2.24 vs. the mean EIs of 2.12 and 2.09 among those students who considered their environment to be neutral and unsupportive, respectively, there were no statistical differences in these means.

Results of both the studies conducted by Luthje and Franke (2003) and; Franke and Luthje (2004) proclaimed direct links between the supportiveness vs. hostility of the university environments and the entrepreneurial intentions of students. However, the findings in this study are contrary to both the above mentioned previous studies. Instead, this study found that even though there were high recorded levels of unsupportive FET environments, this did not have a major negative influence on the overall EI of students. Even more intriguing was that high levels of EI were recorded among students who were unsure of whether their FET environment is supportive or unsupportive.

Although in the main, the overwhelming proportion of students indicated some intentions to found businesses, and even though, overall, there is a high mean EI, it is nonetheless alarming that only 23.3% of students considered their FET environment to be supportive of entrepreneurship through the exposure of students to government SME support programmes. The vast number of respondents did not know about SEDA, Khula and the NYDA, nor had they ever attended on-campus informative presentations organised by these organisations. This reveals a lack of collaboration of the programmes among FETs, the respective agencies and the DHET. Admittedly, it appears that this

lack of knowledge did not dampen students' enthusiasm for entrepreneurship. However, addressing the visibility of those very agencies mandated to advance youth entrepreneurship at FETs is critical. Exposure of students to the basic support structures that exist towards achieving the government's goal of stimulating youth entrepreneurship can only exert a positive effect in ensuring that those high intentions, which have consistently been evidenced in this study, will be realised successfully one day.

5.5 The Impact of Geographical Location on EI of Students

The H3 of this study is: Students at urban-based FET colleges have higher entrepreneurial intentions than rural-based FET college students. This study had three categories of geographical locations namely, urban, metro-township and rural. A comparison of mean EIs based on geographical location of the FET indicated that the mean EI of urban respondents was the lowest at 2.03 while the mean EI of respondents in metro-township was 2.19, and the highest EI was for rural-based FET students, at 2.20. However, there were no statistically significant variations in these means based on geographical location, and as such the findings of this study were contrary to those of Jones-Evans *et al.* (2006) who found urban populations to have higher EI.

Firstly, there are a number of contributing factors that could be associated with the high level of EI in the rural-based FET. The only rural FET in this study was Sekhukhune FET. Sekhukhune is a cross-border nodal area of the Limpopo and Mpumalanga provinces, with a population of approximately 912 000 people and at 45.9%, with one of the highest unemployment levels nationally, according to Statistics South Africa (2002). Furthermore, the proportion of households which depends on pensions and grants as their main source of income was 37.8% (*Ibid*). Given the high levels of unemployment and heavy state-dependency, students might perceive these as "push factors" to look for alternative career options, hence exhibiting the high EI levels comparable to their urban and urban-township counterparts.

Secondly, according to Sarasvathy and Venkataraman (2009), in the last few years, many countries have experienced growing government support that has enabled entrepreneurship growth with regards to new venture creation. Further, other countries have set aside venture capital funds in order to propel entrepreneurship. In South Africa, there has been stronger support for developmental finance institutions for the past decade or so. This has also been recently supported by parliament through approving the merger of a number of these institutions into one institution (Small Enterprise Finance Agency) in order to consolidate the financial support base for SMEs in South Africa. Further, rural development is currently one of the top priorities of the government. As rural communities are developed, more entrepreneurial opportunities are created. These perceived opportunities for students might have an influence on their EI. Consequently, they anticipate entrepreneurship as a viable career option.

According to the 2010 GEM report (Kelley *et al.*, 2011), in South Africa, one of the hindrances of starting a venture is the regulatory process that entrepreneurs have to subject themselves to in order to be compliant with all the mandatory statutes. Despite this hindrance, students might be perceiving that indeed it is easy to start a venture, especially considering that the government approach to foster rural development; hence such high EI findings in rural locations compared to urban areas and metro-townships.

Lastly, the approach of the South African government with regards to rural development, which has become a key performance area for all departments and their state owned entities, among others, is aimed at creating a vibrant entrepreneurial economy that is region based. As regional economies grow, further entrepreneurial opportunities will arise. These perceived opportunities might well influence the EI of the students.

5.6 The Strength of Associations between EI Antecedents and Students' Intention to Venture into Entrepreneurship

The H4 of the study is: Entrepreneurial conviction has a stronger association with FET college environment, general attitudes (valuation of money and achievement motivation), and image of entrepreneurship (payoff) regarding the outcome variable of entrepreneurship intention. According to Thompson (2009, p. 676), entrepreneurial intent is a “self-acknowledged conviction by a person who intends to set up a new business venture and consciously plans to do so at some point in the future”.

Testing the antecedents of entrepreneurial intention is an acknowledgement that multiplicities of factors have an influence on the development of entrepreneurial intention. The antecedents that were tested in this study are conviction, general attitudes – valuation of money and achievement motivation, entrepreneurial image – payoff, and FET environment supportiveness (through exposure to SMME support programmes). Antecedents have generally been grouped into two macro-categories, which deal firstly with the individual and would include personal characteristics such as personality traits, demographics, and so forth, and secondly, the context within which that individual exists (Bird, 1988).

The statistical tests that were conducted established that entrepreneurial conviction had the strongest association with EI. As an antecedent, “conviction” falls into the individual domain and in this manner this finding fits in well with the findings of the previous three hypotheses. All the findings consistently point to the fact that despite contextual characteristics such as FET environment, or domain characteristics such as gender, high numbers of students display the conviction towards starting their own businesses. A number of possible reasons accounting, firstly, for the high percentages of would-be entrepreneurs and,

secondly, for the high mean EI exhibited, have already been put forth and are further summarised below.

5.7 Potential Mediators for Overall High EI Found at FETs

This study found overall high levels of EI in all participating FETs. These levels were high, even in segments of the study where researchers agree that given the specific set of circumstances, EI is expected to be low. Some factors that mediate and intervene among the tested variables and as such help to explain why the results/relationships that were expected to emerge in this study on the basis of the reviewed literature were largely not observed, are proposed below:-

5.7.1 *South Africa as a transitional economy.*

An economy is said to be transitional when it is in the process of restructuring such that the state institutions shift from being the main providers of economic growth and instead occupy an enabling role, while the private sector emerges increasingly as the catalyst of economic-growth (Urban, Van Vuuren and Owen, 2008). In South Africa, for the past decade and a half since the advent of a democratic state, a number of government driven programmes were introduced in aid of an enabling environment for entrepreneurship. These programmes were GEAR, ASGISSA and more recently, the New Growth Path. During such a phase, many individuals display the desire/conviction to pursue entrepreneurship (*Ibid*). This state of the economy allows for high levels of SMME involvement in the economy at large. According to 2010 GEM report (Kelley *et al.*, 2011), South Africa is classified as an efficiency-driven economy. Abdullahi, Ghasemi, Parvandi and Vares (2011) propose that there are 10 pillars that form the base for efficiency-driven economies, one of which is the crucial role undertaken by institutions of higher education and training to improve the competitiveness of products and services.

These two key issues in South Africa are prevalent in the nature in which the South African government has committed itself in redressing the economic imbalances that exist. Thus students have high EI due to perceived existing opportunities and perceived future business support around them. The technical skilling that takes place in the FETs also plays a significant role on EI in that students might slowly become aware that they can sell their skills in different ways and benefit from a perceived greater reward compared to being employed.

5.7.2 SA's youthful population.

Unlike trends experienced in the US and Europe, the South African population is largely young, and young people have been shown to display more favourable attitudes towards self-employment than older populations (e.g. Schoof, 2006). OECD (2001) found that young entrepreneurs are also more positively responsive to new trends and economic opportunities.

Of the total number of participants in this study, 16.39% indicated that they have entrepreneurial experience, having started and run their own businesses in the past. According to White and Kenyon (2001), youth entrepreneurship endorses resilience. When one considers the effect of resilience, the fact that 40.8% of respondents have some history of family entrepreneurship, plus the self-efficacy that exposure to education has been shown to develop (Basu and Virick, n.d.), these may individually and jointly explain, firstly, the overall high mean EI observed and, secondly, the overwhelmingly high proportion of respondents exhibiting some plans to found businesses in future.

5.7.3 SA's high unemployment levels.

In South Africa, generally there are low employment prospects; the economy has experienced slow growth for the past few years, and thus exhibits negative employment prospects in the medium-term. According to the National Treasury

(2011) discussion paper on confronting youth unemployment, the noticeable facts about youth employment in South Africa are:

- About half (42%) of young people under the age of 30 are unemployed, while only 17% of those over the age of 30 are unemployed;
- 12.5% adults who are able to work under the age of 25 years have a job compared with 40% in most emerging economies;
- Since December 2008, employment levels of 18 – 25 year olds have dropped by more than 20%; and
- Even among youths with tertiary education, unemployment is high, with 38% of those between the ages of 18–24 and 18% of youths between the ages of 25–29 unemployed.

To add to this reality, the minister of DHET, Dr Blade Nzimande, indicated that he was worried about the employability levels of FET students (SAPA, 2011). He said that

the success and employability rates were low,.... it was worrying that linkages between colleges and the industry were few.....there are concerns regarding the alignment between what is being taught at the colleges and what industry needs.....there are also 20 000 FET graduates who had completed their studies but could not qualify for jobs because they could not access the work place experience component.

This study takes a view that in this bleak situation of youth unemployment being so, unemployment is a major influence of the high levels of EI. A study conducted by Fatoki (2010) on EI of South African graduates found that the key motivator for EI was employment followed by autonomy. In the same study carried out by Fatoki (*Ibid*) the item factor loading “to provide employment” was the highest mean contributor at 4.82 followed by “to provide job security” at a mean contribution of 4.66. This is a clear indication that these individuals are looking for career alternatives. Therefore, these elements could be viewed more as “push” factors for students towards entrepreneurship as a possible career

option and not necessarily an indication of a genuine positive attitude towards entrepreneurship. In short, the presumption is that this study has found such high levels of EI even though the theories would have suggested otherwise, due to the prevailing contextual and macro-economic circumstances.

5.8 Conclusion

This study found relatively high levels of EI both in terms of the mean EI measured as well as the proportions of respondents with some aims of founding businesses in the future. Often this was contrary to theories in this field; for example, the literature that has been reviewed supports the notion that males have higher EI compared to females; however, this study found equally high numbers of male and female students that have EI and equally high mean EI among both sets of respondents. Similarly, factors such as FET environment supportiveness are meant to increase or decrease EI accordingly; the literature reviewed for this study concludes that if students find the environment to be supportive, this will increase their EI, and if they find the environment to be non-supportive, EI will be low. However, in this study, even though an overwhelming number of students found the environment to be unsupportive, this neither dampened their mean EI, which was still high at 2.13, nor did it discourage the overwhelming number of students who indicated future plans to found businesses.

Factors that could possibly explain these anomalies were, therefore, put forward; these relate to the macro-economic and other contextual circumstances currently prevailing in South Africa. The transitional phase in which the economy finds itself, the unique attributes of young entrepreneurs, as well as the well-publicised poor employment prospects that exist even for tertiary-level graduates were all considered to be moderators between EI and the various variables tested in this study. Some of these factors are considered to be push-factors and as such the observed high EI should not, without further

interrogation, just be assumed to be reflective of positive attitudes towards entrepreneurship.

CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

This study found that the overall EI of students was high, regardless of their study discipline and geographical location. Further, the study found that the antecedent that has the strongest association with EI is conviction. This section therefore explores the conclusions and implications of the study, and provides recommendations for further inquiry regarding EI of FET students.

6.2 Conclusions of the study

This study investigated the EI of students in FETs using a derived model by Autio's *et al* (1997). Both in absolute terms by looking at the proportion of students who intend to found firms in the future, and in terms of measuring mean EI, the study found there to be high EIs among FET students. These findings fell in line with the GUESSS 2011 study (Sieger *et al.*, 2011) which found high EI levels among participating university-students in South Africa, as measured in terms of the absolute proportion to the intent of respondents to found businesses in the future vs. those with no such intention. The GUESSS study (*Ibid*), more importantly found that the EI of South African students was higher than that of their international counterparts.

In this study, equally high EI levels were found amongst differing groups irrespective of whether such groups were sub-categorised based on definitional personal or contextual attributes such as gender or FET-supportiveness, respectively.

This study takes a view that there might be other extenuating factors that may exert a strong positive influence on the overall EI of students. These factors

include among others, employability prospects, perceived future business support and business opportunities and youth entrepreneurship opportunities.

The high levels of EI among FET students may also be largely influenced by the economic conditions in which South Africa finds itself. South Africa's economic growth slowed down around 2008 with the advent of the global economic crisis. This situation has become one of the "push" factors for individuals to look for career alternatives. This may be the case for students irrespective of gender, study discipline and geographic location.

Only in relation to the family history of entrepreneurship did significant differences arise, with the respondents who have had family role-models exhibiting much higher EI than their counterparts without such family role-models. The implications of this are important; while students cannot choose their family backgrounds and are thus unable to influence their exposure to family role-models, in recognition of the impact that role-modelling has in affecting EI, FET environments could create access to role-models through mentorship of aspiring entrepreneurs by established business-founders, for example.

The following antecedents were tested to the dependent variable EI, conviction, image of entrepreneurship- payoff, FET environment – SME support, and general attitudes – valuation of money and achievement motivation. Three tests were conducted to establish which of these antecedents has the highest association with EI. The tests that were conducted are, regression, stepwise regression and direct relationships. In all these tests, conviction proved to have the strongest positive association to EI. On both the regression and stepwise regression, conviction was followed by FET support. The direct relationship test indicated that autonomy was the second most significant dependant variable after conviction. All the other antecedents proved to have a weak positive association with EI.

One of the key contributions made by this study is the measure of the mean EI that took temporality into account. This was performed by defining respondents intending to found businesses within the short-term (within 1-2 years of graduation) as exhibiting high EI, and taking into account that the further the intended time-frame to found the venture the lesser the EI (moderate to low).

6.3 Implications of the study

The findings of this study have confirmed some of the evidence presented in existing literature and the studies reviewed. This study has, significantly, also provided a new understanding of the relationships among various variables and EI. Some of these entirely-original research findings were:

1. At FETs, regardless of gender, EI levels are high.
2. Geographic location has no impact on the EI of FET students.
3. Irrespective of whether students find the FET environment supportive or not, EI levels are high.

6.3.1 Implications for academics

This study puts forward the following implications for academics:

1. As discussed, the findings of generally high EI should not be taken as de facto proof that the existing theories do not hold; these high EIs could be a reflection of the current South African context rather than that of positive attitudes towards entrepreneurship. These could contribute to theories regarding supportive environments of higher educational institutions and their role in EI and entrepreneurship education as a key to ignite and propel EI. As such, on-going exploration into which aspects of entrepreneurial education result in producing entrepreneurial self-efficacy and in turn EI is a much needed field of study.

There are many conflicting theories regarding whether personal characteristics such as attitudes vs. context such as the FET-environment are the key drivers of ESE. Even more fundamentally, the argument of whether it is entrepreneurial education or education in general which results in raising the efficacy of would be entrepreneurs still rages. Without clear answers in this regard, the policy directive to be followed in order to improve youth entrepreneurship cannot be determined.

2. Developing curricula that position entrepreneurship education as a priority in order to improve early-stage entrepreneurship is another critical implication for academics. Furthermore, expanding the entrepreneurship knowledge base to programmes that would not otherwise have been exposed to entrepreneurship is key to developing entrepreneurial mind-sets.
3. Lecturer development programmes that are directed to improving and intensifying the quality of teaching programmes on entrepreneurship at FETs are also key to creating an enterprising culture of students.

6.3.2 *Implications for practitioners*

The implications to practitioners are as follows:

1. For the DoHET, innovative curricula that are more supportive of entrepreneurship are needed in both technical and non-technical disciplines of study in FETs.
2. The DFIs (SEDA, Khula and NYDA) need to expand their reach by collaborating with FETs to improve the impact of entrepreneurial education, thus contributing positively to early-stage entrepreneurship.

3. FETs need to establish partnerships with the private sector institutions that have enterprise development opportunities in order to ensure that teaching methods and content are practical and relevant.

6.4 Recommendations of the study

This study identified a number of key stakeholders that are critical to increasing EI among youths. These stakeholders have a direct role to play in increasing early-stage entrepreneurship that is skills based, thus creating a vibrant and sustainable SME sector in South Africa. These stakeholders are the DoHET, the DTI, The Department of Economic Development (DoED) and the FETs themselves. The following recommendations are made to each stakeholder:

6.4.1. *The Department of Higher Education and Training*

As indicated earlier in this study, business-management and technical courses are totally independent disciplines at FETs. This follows the current design of the curricula by the DoHET. A more vigorous and innovative approach is needed to support entrepreneurship education at FETs. This will primarily require the department to redesign the curricula to overlap entrepreneurial courses in the technical disciplines. This responsibility needs to be executed by the DoHET as the department is the custodian and implementer of policies for higher education and training in South Africa.

This will result in including components of courses such as new venture creation and business management across all courses in FETs. This implies that in the technical disciplines, entrepreneurship-related courses must become compulsory. These courses must include business plan writing skills, marketing and business management skills, and so forth. The objective would be to incorporate entrepreneurship education into vocational training so that there can be a strong impact on new venture creation. This approach would ensure that

the apprentices can be exposed to the world of business through enterprise-based training, thus increasing EI that is skills-based.

The National skills fund (NSF) is a critical player in the development of skills in South Africa. Entrepreneurship skills are categorised as critical skills by the NSF. Therefore, the NSF has to collaborate with the respective agencies (NYDA and SEDA) in order to develop entrepreneurship skills. These collaborations must be linked with the FET curricula with students being the primary beneficiaries. The programmes that are designed must include all disciplines of study, and not merely be limited to students in the new-venture-creation and business-management disciplines.

6.4.2. The Department of Trade and Industry

6.4.2.1 Incubation centres

Incubation centres are key stimulators to structuring and supporting the SME sector. There are a number of incubations that have been successful in South Africa under the SEDA Technology Programme (STP) like the eThekweni Construction Incubator and the Limpopo Jewellery Incubator. In total, approximately 40 incubators operate under the STP; they have proven to be successful. The Minister of Trade and Industry has instructed SEDA to plan and set up 250 new incubators over the next 3 years.

The DTI and SEDA need to place some of these incubators at FETs. The programmes of the incubators must be implemented in collaboration with SEDA, NYDA and Khula. This will ensure that both easily accessible non-financial and financial support is available for all the students who would like to pursue ventures. The financial support programmes must be designed to be more flexible so as to encourage their uptake by students. This approach will therefore ensure a sense of support and safety for students who wish to start new ventures and that they do not perceive that there could be some punitive measures should the venture fail. The approach would also cultivate a new

culture of tolerance, rather than a punitive one, towards new venture failure in South Africa. Even though these incubators would be based on campuses, they must be open to the broader community in order to encourage collaboration and mentorship between seasoned local entrepreneurs and aspiring entrepreneurs (including students). More importantly, if open to the surrounding communities, it would provide students with access to markets for their products and services.

The main objective for this approach would be to ensure that business costs are reduced, technical skills are developed, and entrepreneurship education is promoted, all of which would lead to the development of a sustainable and vibrant SME sector in South Africa.

6.4.2.2 DFI support

Firstly, DFIs need to design packages that will encourage students to participate in entrepreneurship. The DTI has established SEDA as the custodian of the SME sector in South Africa. SEDA only provides non-financial support to the SME sector, which is critical in entrepreneurship education, thus increasing early-stage entrepreneurship. It becomes imperative for the DTI to consolidate other SME incentive schemes such as export programmes targeted for SMEs to be placed under SEDA. This will ensure that there is a 'one-stop shop' for all non-financial support directed to SMEs, thereby increasing the exposure and uptake of the programmes by students at FETs.

Secondly, in line with one of the government priorities, namely the rural development strategy, a strong network of offices of DFIs is needed, especially in the outlying rural areas. There is a significant number of FETs that are rural-based; therefore, DFIs must take advantage of this to open and operate offices in FETs as a first step towards incubation centres. This will promote DFI support programmes and thus have a positive impact on entrepreneurship education. This approach will allow the DFIs to form part of the daily or weekly programmes of FETs and to easily conduct entrepreneurship education programmes such as business plan competitions. This would also ensure that

DFIs are promoted among the youth, thus creating a strong awareness of their programmes and resultantly improve on early-stage and / or youth entrepreneurship. Lastly, DFIs would engage with the incubation centres and thus FETs on a daily or weekly basis.

6.4.2.3 SME base-line study

No known comprehensive consolidated SME base-line study exists in South Africa. It is imperative that the DTI in collaboration with the DoED commission such a study. Furthermore, the various departments and practitioners rely on reports generated by Statistics South Africa such as the labour force survey, the GEM reports and Finscope reports to provide relevant entrepreneurship data. A base-line study would yield a clearer picture and status quo of the overall formal and informal SME sector. More importantly, it would furnish a clear picture of youth entrepreneurship, which would assist the various departments and agencies to understand and allocate resources that are necessary to drive youth entrepreneurship in South Africa. The base line study must include data pertaining to industry, early-stage entrepreneurship and areas of (industrial) development, entrepreneurial skills development and entrepreneurial support reach.

6.4.3. The department of economic development

6.4.3.1. Access to finance

During the 2012/2013 fiscal year, the merger of Khula, IDC small business and APEX fund into one institution with an objective of consolidating DFI financial support will dawn. This is a step towards ensuring that government policy supports and creates greater access to financial institutions like Khula, and NYDA.

The funding should be structured in a format that offers micro-financing tools targeted at students, the informal sector and formal SMMEs. The funding range

should be R10 000 to R250 000. This will close the gap for SMME funding between Khula and other DFIs (especially provincial based DFIs), which start from R250 000. This can also be linked to the job fund and rural development programmes.

The need to design new funding criteria and, more importantly, to design new credit ratings specifically targeted at meeting the needs of students is urgent in order to develop a vibrant and sustainable SMME sector. Access to finance is a key issue for the SMME sector and even worse for youth entrepreneurship. Further access to finance is one of the critical elements in creating an enterprising society. These institutions need to create financial packages that are directed to students and in the case of failure, would have minimal punitive measures so as to encourage and support students to start their ventures.

This approach reinforces entrepreneurship as an alternative career option for students. The more that students feel that failure in starting and running a venture is acceptable, the more they are likely to take up the challenge of entrepreneurship. These financial packages must be linked to FETs when promoting the DFIs, running business plan competitions, and the incubation centres. Ultimately, this approach would generally increase funding capacity and its reach.

6.4.3.2. Local economic development (LED)

The DoED, in collaboration with the DTI, needs to align the incubation centres with the district and local municipal local economic development (LED) strategies. The DoED and the DoHET could position FETs as key areas for local economic and rural development. This approach would ensure that the youths will gain a better understanding of how these institutions function, particularly if there is some kind of integration of the curricula of the SMME support programmes.

6.4.3.3. The FETs

Firstly, FETs need to expand their programmes regarding entrepreneurship to be included in both technical and entrepreneurial disciplines of study. This would assist students to begin to conceptualise partnerships and business ideas. The most important opportunity that needs to be explored at FETs is business partnerships between technical and entrepreneurial students. This could occur only through entrepreneurial activities initiated by the FETs. These would include activities such as business plan competitions, seed funding and enterprise development.

Secondly, collaboration between FETs and DFIs is critical. It is necessary for government support initiatives to be efficient and to expand to encompass a greater reach. It is important that these programmes are not directed to achieve merely numbers but should rather focus on the quality of the entrepreneurs. FETs are well positioned to contribute towards the development of high-growth of entrepreneurship due to the technical skills learned by students. As indicated previously, incubation centres become critical in achieving high growth entrepreneurs who have both technical and business skills. To achieve this, FETs will be required to explore partnerships with non-governmental organisations in order to pursue funding through local and international grants to assist with the training in graduate entrepreneurship programmes. Local funding can be mobilised through linkages and partnerships with South African based corporations that could offer opportunities for the development of enterprises. Entrepreneurship programmes should include “learning from peers” and/or mentorship as well as access to markets.

6.5 Suggestions for further research

1) Motivations for EI

The levels of EI found in this study are very high. It therefore becomes important to investigate whether students have high EIs because of genuine

entrepreneurial motivation or as a result of “push” factors. This would involve a longitudinal study to track whether students do eventually start their own ventures.

- 2) An investigation into the link between the type of business started and the area of study at an FET

This study found that 16.39% of students had entrepreneurial experience, having previously started a business. There is a need to establish if these students who had started their own businesses had done so in fields related to their current study disciplines. This can be linked to establishing whether students who want to start their own ventures have business ideas and identifying the stage at which those ideas have developed.

- 3) Investigate the type of support that students need to start their ventures

It was clear from this study that a significant percentage of students did not find the environment supportive at their respective FETs. It therefore becomes crucial to investigate the type of support that students require beyond actual class studies in order to create new ventures.

- 4) Alumni of FETs who studied entrepreneurship

Many students have graduated from FETs with entrepreneurial related qualifications. There is a need to investigate the level of students who established their own ventures, and in that assessment to establish how much of their learning at the FETs was useful for them in starting their own ventures.

- 5) Longitudinal study of EI realisation

There is a need to explore whether students actually do realise these high entrepreneurial intentions, and if so, what kinds of trends emerge with regards to the personal and contextual domains of those students who do ultimately found new ventures.

6) Economic development

A longitudinal study to investigate the role of graduates from FETs in local economic development would focus on tracking students to establish whether they did realise their high EIs and secondly, whether economic development value was added and why.

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APPENDIX A: RESEARCH INSTRUMENT AND COVER LETTER

Dear Student

I am inviting you to be part of a survey I am conducting in order to gather information related to entrepreneurship intentions of graduates in FET colleges.

I am conducting this study as a professional student undertaking my Masters Degree in Entrepreneurship and New Venture Creation at the Wits Graduate School of Business Administration. The focus of the study is on assessing whether FET students ever intend to start their own businesses or not, after they graduate.

Please be assured that your responses will be held in the utmost confidence. If the results of this study were to be written for publication, no identifying information would be used.

The potential benefits of this study are to include entrepreneurship education – including financial assistance and tools for business opportunity recognition – in the FET curriculum. Should you have any questions about this study, or wish to ascertain the results of the findings, please feel free to contact me telephonically or via email (details below).

I appreciate your participation in this study.

Kind Regards,



Mr Vusi Skosana

083 641 1414 (vuis@vezubuhle.co.za)

Graduate School of Business Administration

Wits Business School

I. Background Information

1. Age group (please tick one):

16 - 20 years	21 – 25 years	26 – 30 years	31 – 35 years
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Gender

Female Male

3. Race

Black Coloured Indian White

4. Name of FET College:

Tshwane FET	Sekhukhune FET	Nkangala FET	Ekurhuleni FET	Umgungundlo vu FET
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. What is your major field of study (please tick one):

Technical field (e.g.Plumbing, Electrical etc).....

Business Management field (e.g. HR, Finance, Economics etc.).....

6. Have you ever started up and run your own business before?

No Yes

7. If yes, describe the nature of the business below.

Offering a Service (e.g.dry-clean, car wash, hair-dressing, plumber, electrician etc).....

Manufactur (e.g. dress-making, welding etc.).....

Retail / Sell (e.g. spaza shop, supermarket, hawker, bottle-store etc).....

8. Does any member your immediate family have their own business?

No Yes

9. If yes, describe the nature of the business below.

Offering a Service (e.g.dry-clean, car wash, hair-dressing, plumber, electrician etc).....

Manufac(e.g. dress-making, welding etc.).....

Retail / s(e.g. spaza shop, supermarket, hawker, bottle-store etc).....

10. Have you ever worked on a part-time or piece job or full-time basis?

No Yes

11. If yes, describe the nature of the business:

Government.....

Store in town or in a mall.....

Big company.....

Family business.....

FET college or other school/ educational institution.....

Local formal or informal business eg local spaza/ supermarket/ hair salon etc

12. I want to start my own business (please tick one):

Within 1 to 2 years after graduating from FET college.....

Within 3 to 5 years after graduating from FET college.....

5 or more years after graduating from FET college.....

Never.....

II. CONVICTION

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13. Even if I came up with a good business idea, I don't think I'd risk starting my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I do not think I have the qualities needed to run my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I want to start my own business one day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Probably the best way for me to support myself would be for me to start my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I could make best use of my education by starting my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. The best way for me to become financially well off would be for me to start my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. Competitiveness

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
19. I enjoy working in situations where I can compete with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I am driven to do better than others on a task	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I feel that winning is important in both work and leisure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. It annoys me when other people perform better than I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I try harder when I know my performance is being compared with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. Competitiveness

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. I feel that winning is important in both work and leisure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. It annoys me when other people perform better than I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I try harder when I know my performance is being compared with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. Valuation of Money

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
24. I firmly believe that money can solve all my problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I would do practically anything legal for money if it were enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Making a lot of money is important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Compared to most other people I know, I think about money much more than they do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. A high income is a sign of success in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

V. Achievement Motivation

- 29. I find it hard to understand people who keep on working towards new goals even though they are already very successful
- 30. I am generally not afraid of new challenges
- 31. To be able to cope with new challenges is extremely important to me
- 32. I always strive to be better than average in whatever I do
- 33. I try to improve on my performance all the time
- 34. I'm constantly trying to accomplish something new
- 35. I generally take the initiative and make things happen even if it means extra stress and working longer hours

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. Autonomy

- 36. When I am in a group I am happy to let someone else take the lead
- 37. I think I've found it harder than others to let authority figures like parents, teachers, and superiors control me

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. Autonomy

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
38. I usually do what is expected of me and follow instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I usually trust my own judgement and do not care much about what others say or think	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I'd prefer to work for someone else, rather than take the risk of starting my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. I'd prefer to have the job security of working for someone else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VII. Payoff

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
42. Most business owners are well off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Starting a business is a very risky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. As a business owner you can almost never take a day off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Running your own business will not necessarily make you richer than working for a salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. It is very difficult to run one's own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. In order to make it as a business owner you'd have to work much harder than others do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. People who start their own business run a greater risk of losing everything they have	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VII. Payoff

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
49. Considering how hard they work, most business owners are actually underpaid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. In order to become successful running your own business you would have to be very knowledgeable in many different areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Money is difficult to come by to start my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VIII. Societal Contribution

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
52. Entrepreneurs create employment and are therefore very important for South Africa's economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Most entrepreneurs are only interested in making as much money as possible for themselves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Individuals who start businesses create our national wealth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. On balance, small businesses are harmful to society since quite a few entrepreneurs engage in tax fraud or cause costly bankruptcies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. FET ENVIRONMENT

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
56. I know many students in my FET who have successfully started up their own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. In my FET, students are actively encouraged to pursue their own business ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. In my FET, you get to meet lots of people with good ideas for a new business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. The courses I take at the FET prepare me well for an entrepreneurial career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. FET ENVIRONMENT

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
57. In my FET, students are actively encouraged to pursue their own business ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. In my FET, you get to meet lots of people with good ideas for a new business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. The courses I take at the FET prepare me well for an entrepreneurial career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. The FET college actively promotes entrepreneurship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. At our FET we have been taught about what SEDA does to promote small businesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. At our FET we have had a guest speaker from SEDA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. At our FET we have been taught about what Khula does to promote small businesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. At our FET we have had a guest speaker from Khula	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. At our FET we have been taught about what the NYDA does to promote small businesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66. At our FET we have had a guest speaker from Khula	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

X. Social Context

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
67. I would find a great deal of support from members of my community for starting my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68. I know a number of people in my community to whom I can turn for support and advice if I decide to start my own business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69. People in my community are strongly supportive of people starting their own businesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

***** END *****

Thank you for giving of your time in participating in this study. Your input is most appreciated and will be treated as confidential at all times.

APPENDIX B: ALIGNMENT BETWEEN RESEARCH INSTRUMENT AND MODEL

IV. Competitiveness	Gen attitude	competitiveness
24. I enjoy working in situations where I can compete with others	Gen attitude	competitiveness
25. I am driven to do better than others on a task	Gen attitude	competitiveness
26. I feel that winning is important in both work and leisure	Gen attitude	competitiveness
27. It annoys me when other people perform better than I do	Gen attitude	competitiveness
28. I try harder when I know my performance is being compared with others	Gen attitude	competitiveness
V. Valuation of Money	Gen attitude	money
29. I firmly believe that money can solve all my problems	Gen attitude	money
30. I would do practically anything legal for money if it were enough	Gen attitude	money
31. Making a lot of money is important to me	Gen attitude	money
32. Compared to most other people I know, I think about money much more than they do	Gen attitude	money
33. A high income is a sign of success in life	Gen attitude	money

FET Environment	FET environment
61. I know many students in my FET who have successfully started up their own business	FET environment
62. In my FET, students are actively encouraged to pursue their own business ideas	FET environment
63. In my FET, you get to meet lots of people with good ideas for a new business	FET environment
64. The courses I take at the FET prepare me well for an entrepreneurial career	FET environment
65. The FET has a clear policy regarding the intellectual ownership of ideas developed during research or studies	FET environment
66. The FET college actively promotes entrepreneurship	FET environment
67. At my FET we have been taught about what SEDA does to promote small businesses	FET environment
68. At our FET we have had a guest speaker from SEDA	FET environment
69. At my FET we have been taught about what Khula does to promote small businesses	FET environment
70. At our FET we have had a guest speaker from Khula	FET environment
71. At my FET we have been taught about what the NYDA does to promote small businesses	FET environment
72. At our FET we have had a guest speaker from the NYDA	FET environment

12. I want to start my own business (please tick one):	Intent
Within 1 to 2 years after graduating from FET college	Intent
Within 3 to 5 years after graduating from FET college	Intent
5 or more years after graduating from FET college	Intent
Never	Intent

VIII. Payoff	Image
47. Most business owners are well off	Image
48. Starting a business is a very risky	Image
49. As a business owner you can almost never take a day off	Image
50. Running your own business will not necessarily make you richer than working for a salary	Image
51. It is very difficult to run one's own business	Image
52. In order to make it as a business owner you'd have to work much harder than others do	Image
53. People who start their own business run a greater risk of losing everything they have	Image
54. Considering how hard they work, most business owners are actually underpaid	Image
55. In order to become successful running your own business you would have to be very knowledgeable in many different areas	Image
56. Money is difficult to come by to start my own business	Image

II. CONVICTION	conviction
13. Even if I came up with a good business idea, I don't think I'd risk starting my own business	conviction
14. I do not think I have the qualities needed to run my own business	conviction
15. I want to start my own business one day	conviction
16. Probably the best way for me to support myself would be for me to start my own business	conviction
17. I could make best use of my education by starting my own business	conviction
18. The best way for me to become financially well off would be for me to start my own business	conviction

FET Environment	FET environment
61. I know many students in my FET who have successfully started up their own business	FET environment
62. In my FET, students are actively encouraged to pursue their own business ideas	FET environment
63. In my FET, you get to meet lots of people with good ideas for a new business	FET environment
64. The courses I take at the FET prepare me well for an entrepreneurial career	FET environment
65. The FET has a clear policy regarding the intellectual ownership of ideas developed during research or studies	FET environment
66. The FET college actively promotes entrepreneurship	FET environment
67. At my FET we have been taught about what SEDA does to promote small businesses	FET environment
68. At our FET we have had a guest speaker from SEDA	FET environment
69. At my FET we have been taught about what Khula does to promote small businesses	FET environment
70. At our FET we have had a guest speaker from Khula	FET environment
71. At my FET we have been taught about what the NYDA does to promote small businesses	FET environment
72. At our FET we have had a guest speaker from the NYDA	FET environment

APPENDIX C: SUMMARY OF SCALE RELIABILITY AND VALIDITY

Scale: FET Environment	Cronbach Alpha: 0.877		Explained Variation: 62.749%
	Average Inter-item Correlation: 0.547		Eigenvalue: 3.765
<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q61	0.885	0.509	0.624
Q62	0.854	0.691	0.795
Q63	0.843	0.759	0.845
Q64	0.842	0.767	0.862
Q65	0.857	0.676	0.782
Q66	0.851	0.711	0.822

Scale: Image	Cronbach Alpha: 0.696		Explained Variation: 35.591%
	Average Inter-item Correlation: 0.247		Eigenvalue: 2.491
<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q43	0.655	0.431	0.622
Q44	0.660	0.416	0.605
Q45	0.672	0.374	0.560
Q46	0.666	0.392	0.576
Q48	0.641	0.484	0.685
Q49	0.664	0.399	0.592
Q51	0.678	0.340	0.524

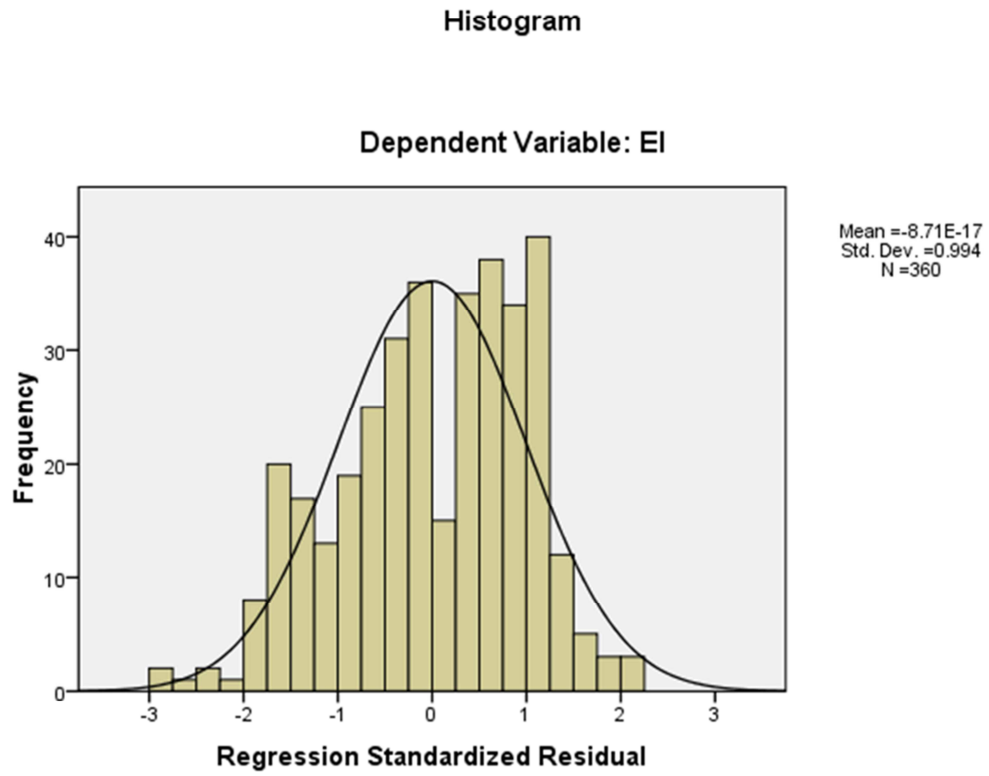
Scale: Conviction	Cronbach Alpha: 0.734		Explained Variation: 56.159%
	Average Inter-item Correlation: 0.412		Eigenvalue: 2.246
<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q15	0.730	0.432	0.658
Q16	0.624	0.608	0.814
Q17	0.647	0.578	0.790
Q18	0.691	0.496	0.726

Scale: Money	Cronbach Alpha: 0.736		Explained Variation: 56.608%
	Average Inter-item Correlation: 0.420		Eigenvalue: 2.264
<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q24	0.710	0.485	0.707
Q26	0.644	0.598	0.804
Q27	0.660	0.556	0.772
Q28	0.695	0.495	0.724

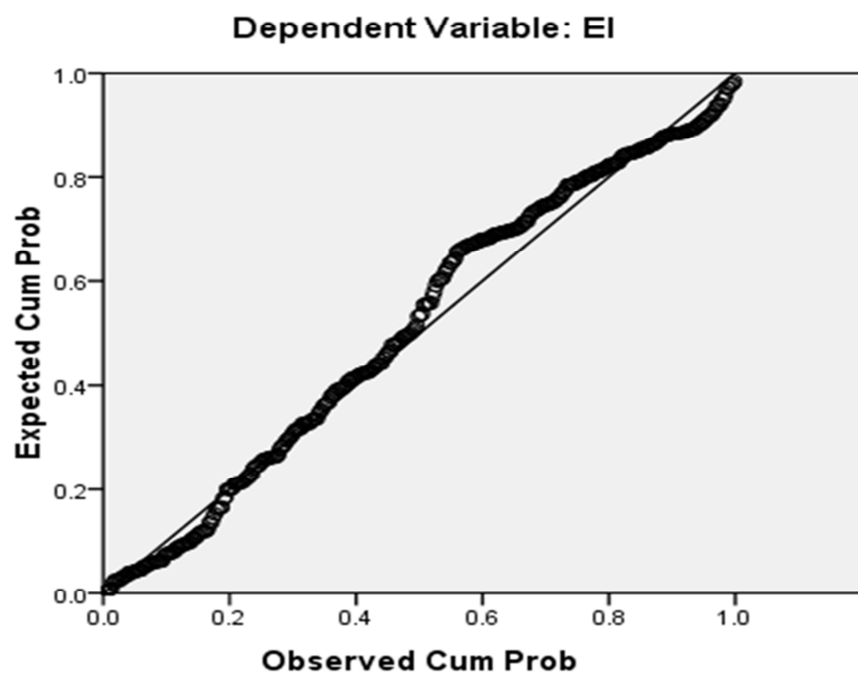
Scale: Achievement	Cronbach Alpha: 0.681		Explained Variation: 39.561%
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<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q30	0.654	0.369	0.577
Q31	0.606	0.510	0.717
Q32	0.613	0.490	0.713
Q33	0.649	0.404	0.617
Q34	0.655	0.368	0.568
Q35	0.661	0.369	0.562

Scale: Attitude	Cronbach Alpha: 0.666		Explained Variation: 26.392%
	Average Inter-item Correlation: 0.173		Eigenvalue: 2.639
<i>Scale Items</i>	<i>Alpha if Deleted</i>	<i>Item-Total Correlation</i>	<i>Factor Loadings</i>
Q24	0.654	0.309	0.418
Q26	0.613	0.456	0.554
Q27	0.590	0.539	0.649
Q28	0.641	0.336	0.438
Q30	0.673	0.136	0.346
Q31	0.632	0.397	0.622
Q32	0.631	0.402	0.641
Q33	0.656	0.257	0.461
Q34	0.653	0.262	0.473
Q35	0.659	0.232	0.437

APPENDIX D: PLOTS FOR VARIABLE – ENTREPRENEURIAL INTENTION (MULTIPLE REGRESSION)

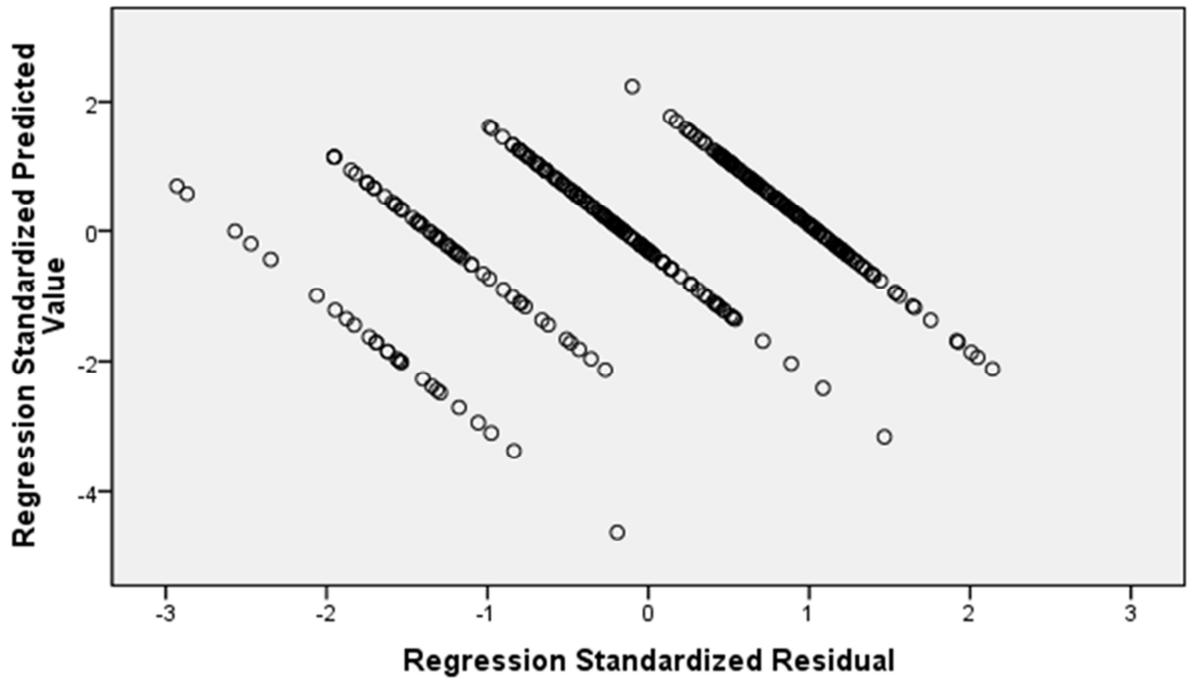


Normal P-P Plot of Regression Standardized Residual



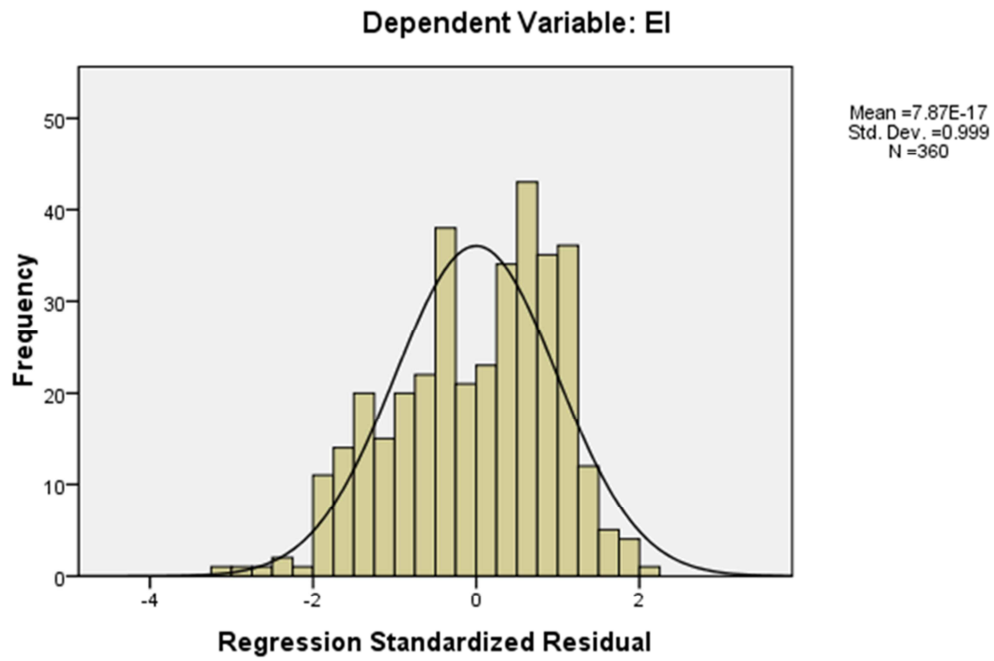
Scatterplot

Dependent Variable: EI



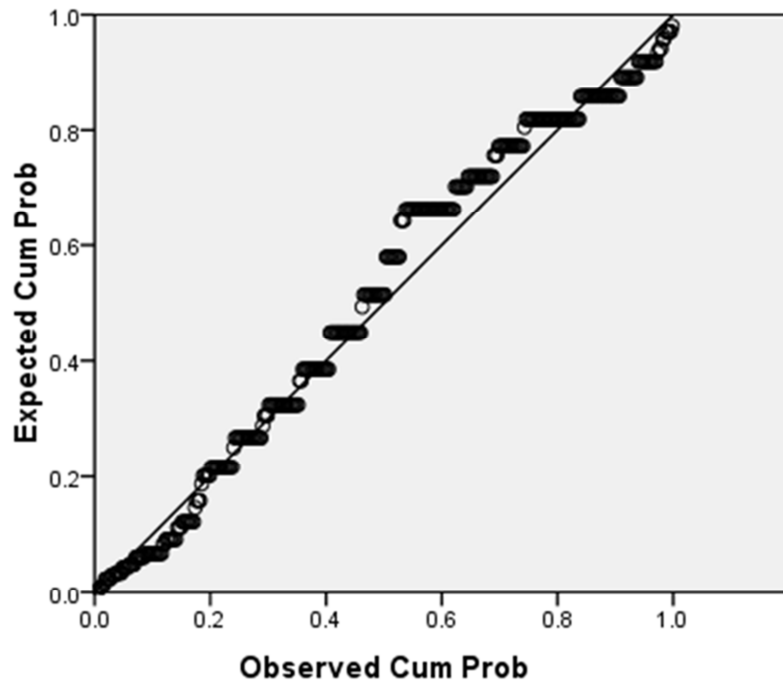
APPENDIX E: PLOTS FOR VARIABLE – ENTREPRENEURIAL INTENTION (STEPWISE REGRESSION)

Histogram



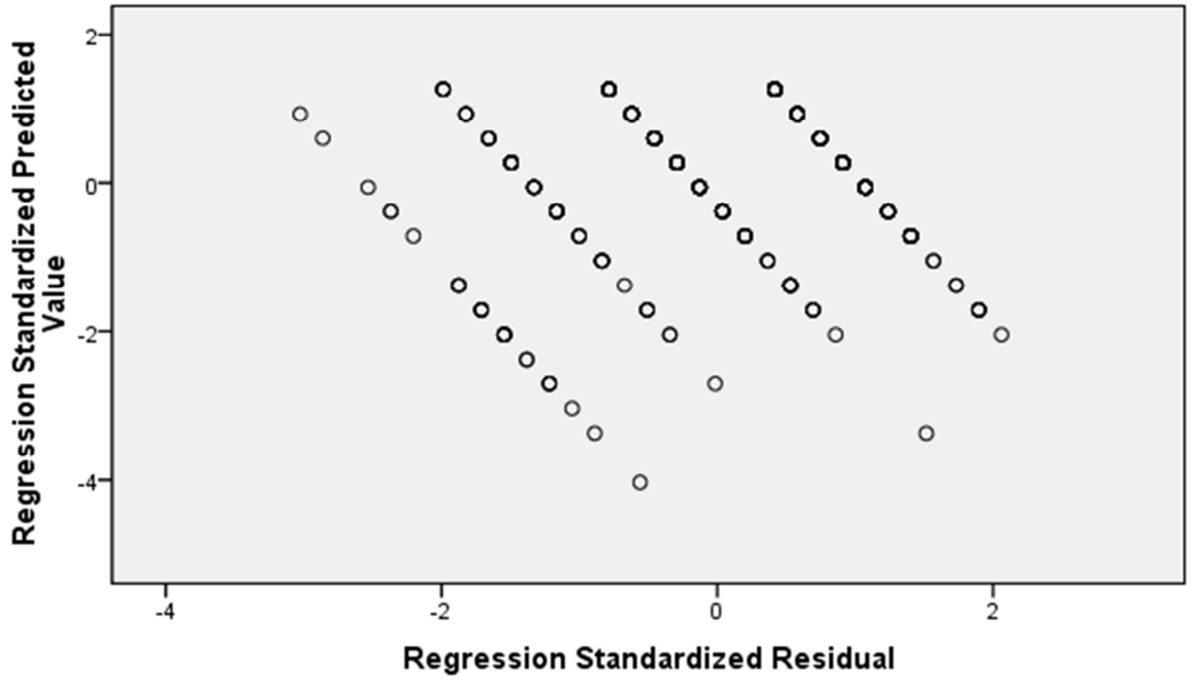
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI



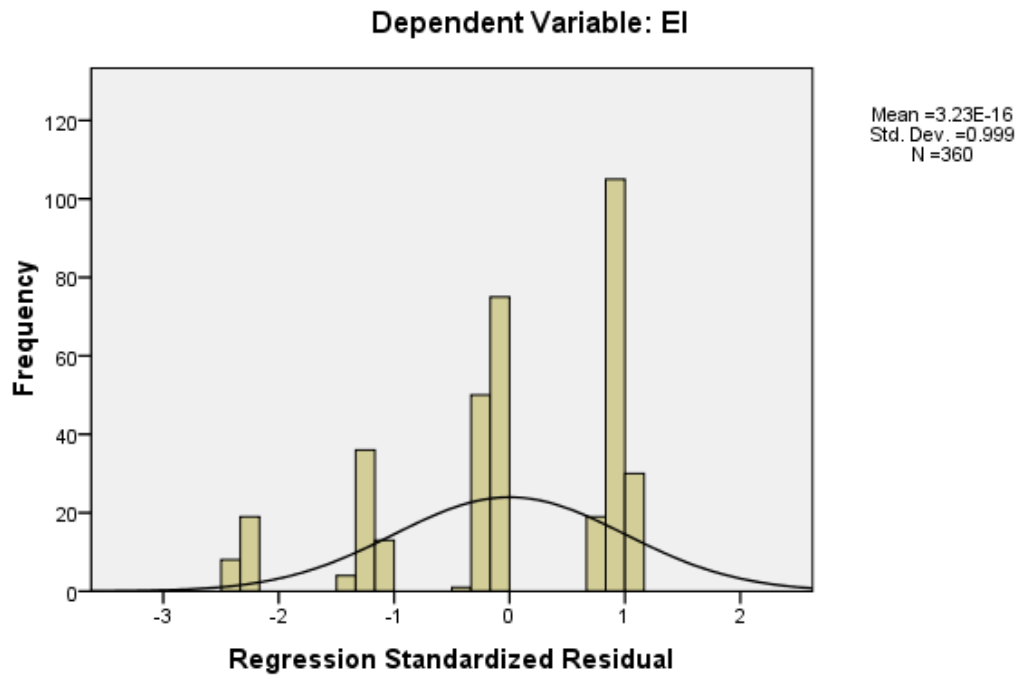
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Dependent Variable: EI



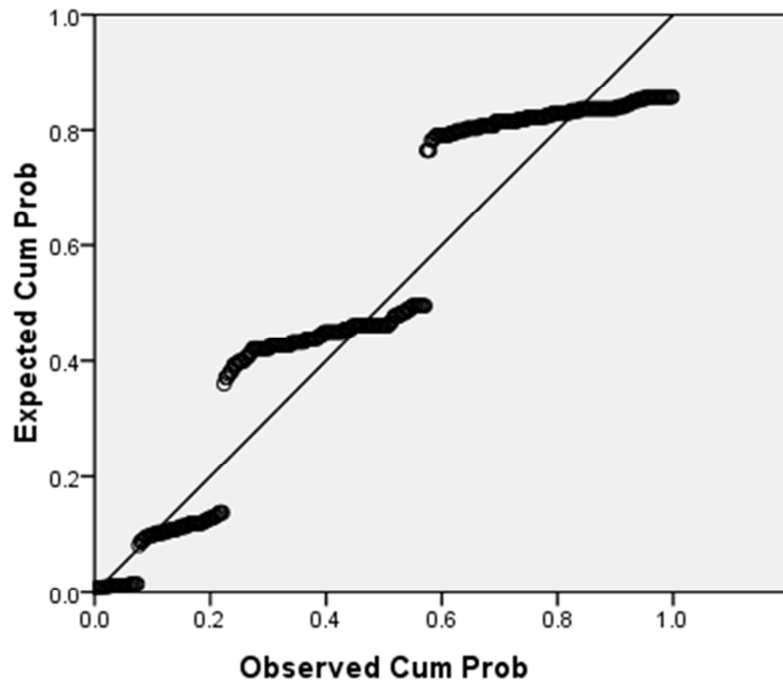
APPENDIX F: PLOTS FOR H2: FET ENVIRONMENT

Histogram



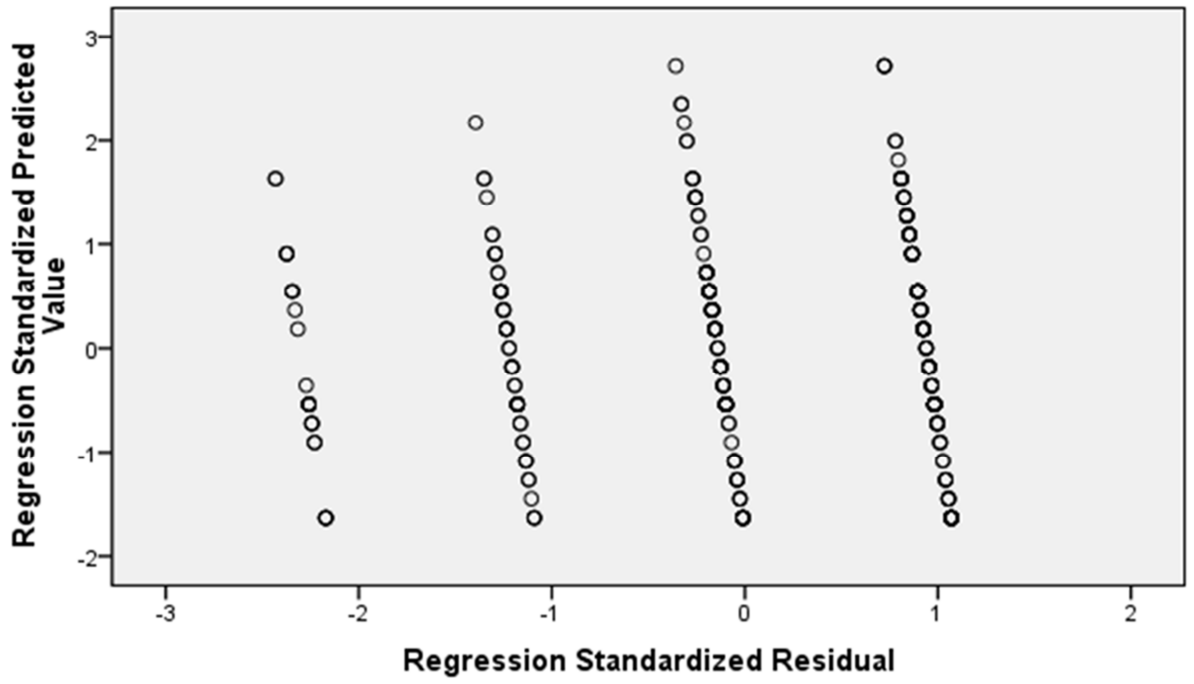
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI

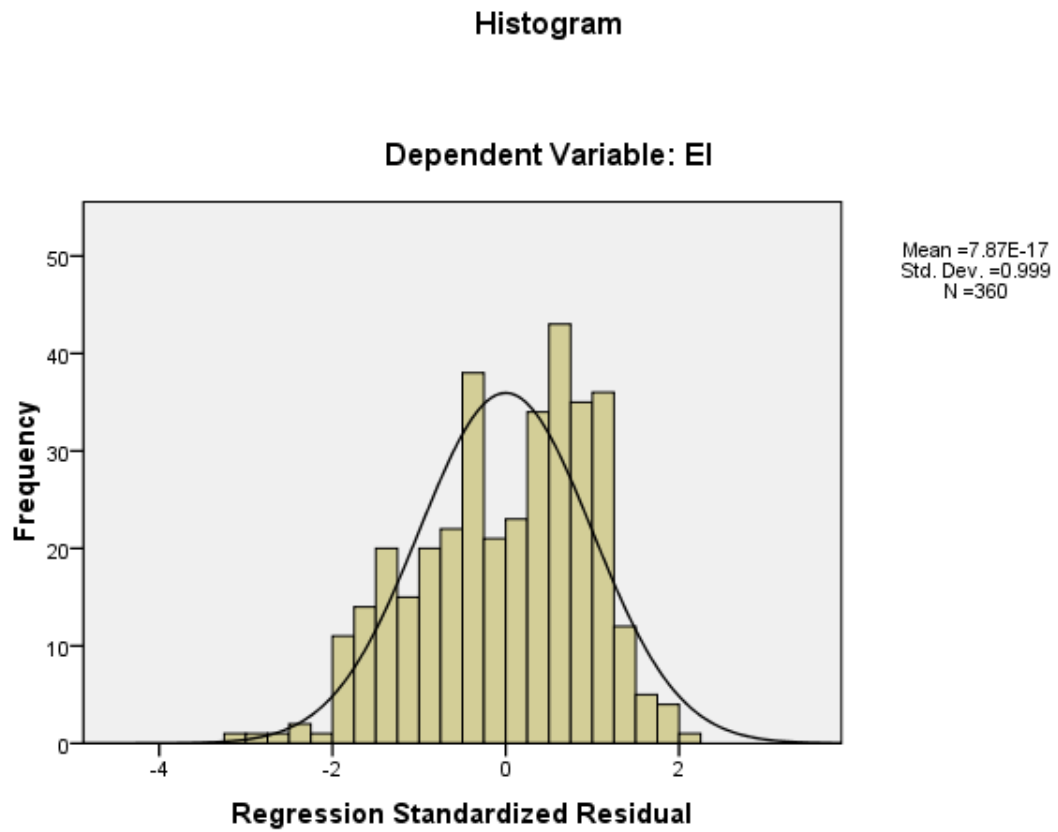


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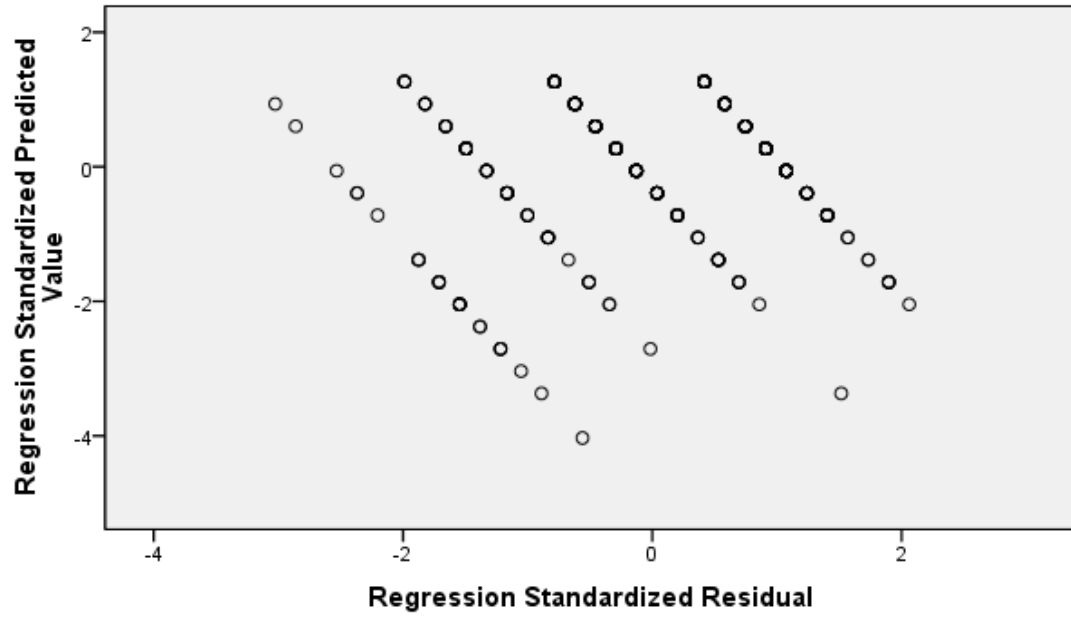


APPENDIX G: PLOTS FOR H4: CONVICTION (LINEAR REGRESSION)



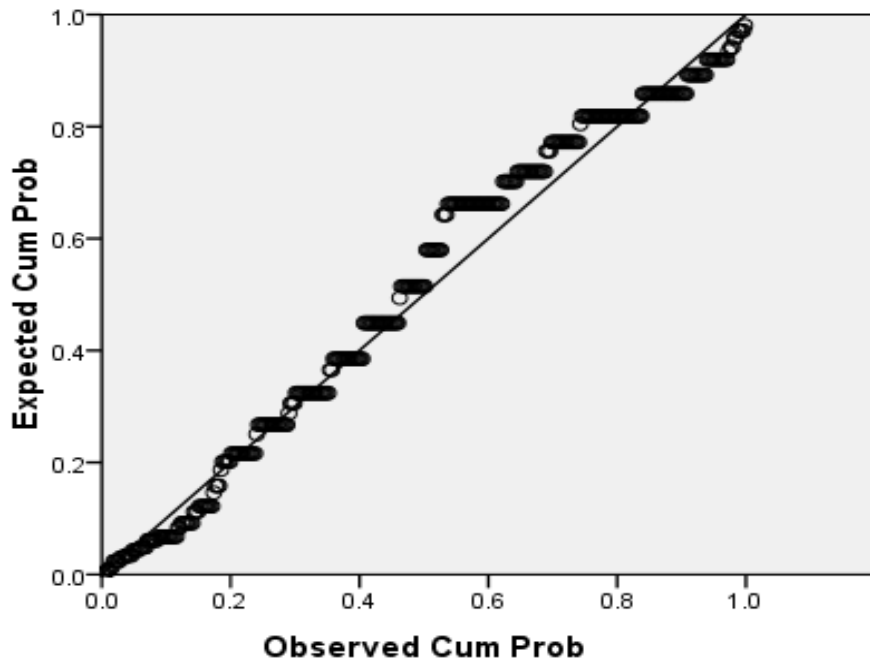
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Dependent Variable: EI

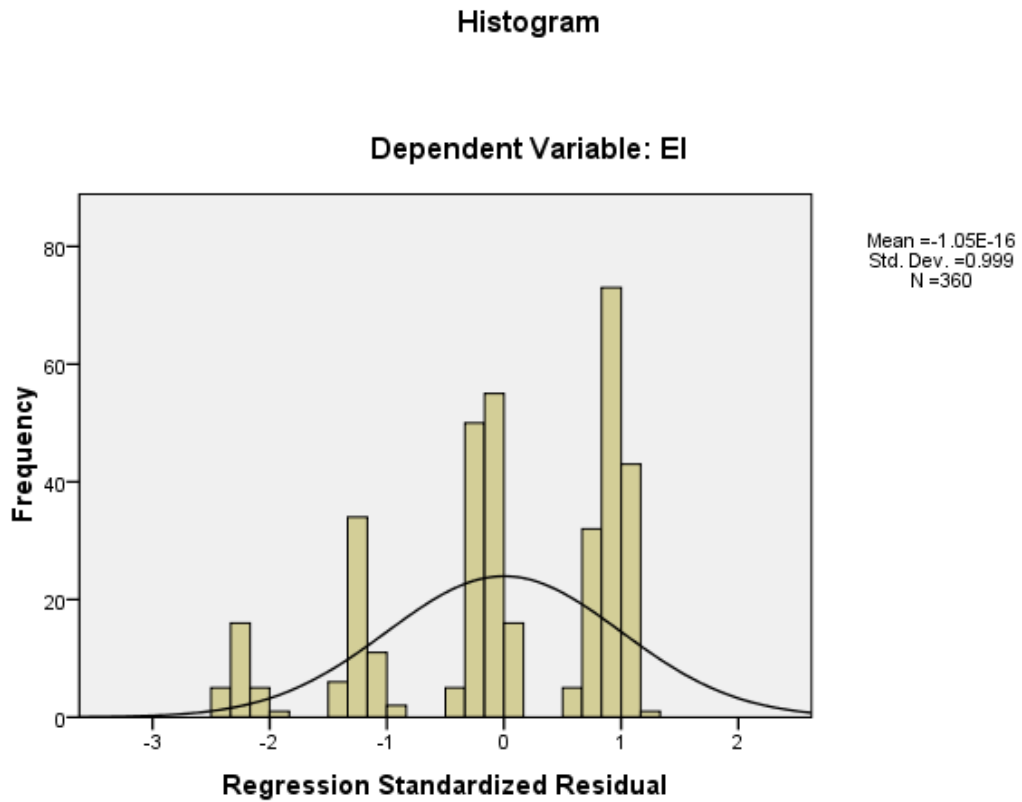


Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI

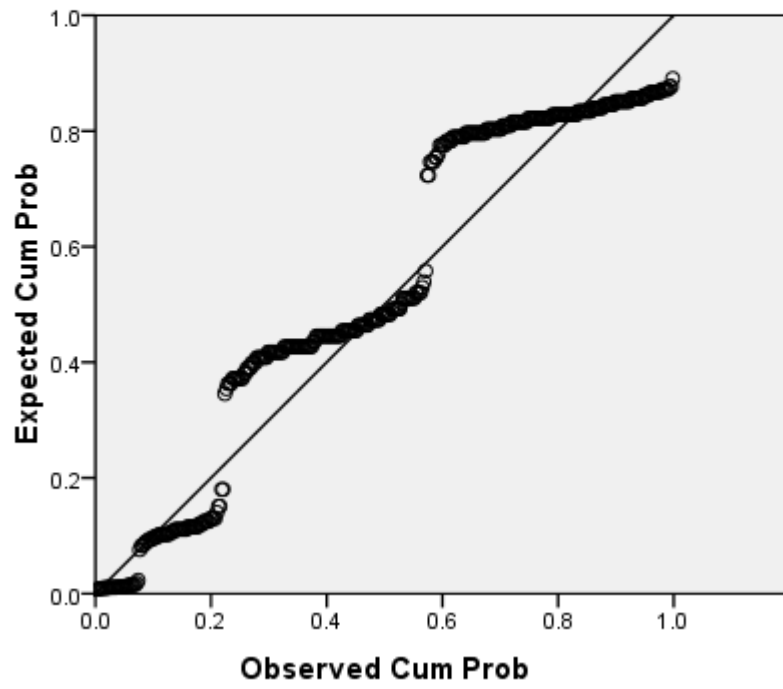


APPENDIX H: PLOTS FOR H4: FET SUPPORTIVENESS (LINEAR REGRESSION)



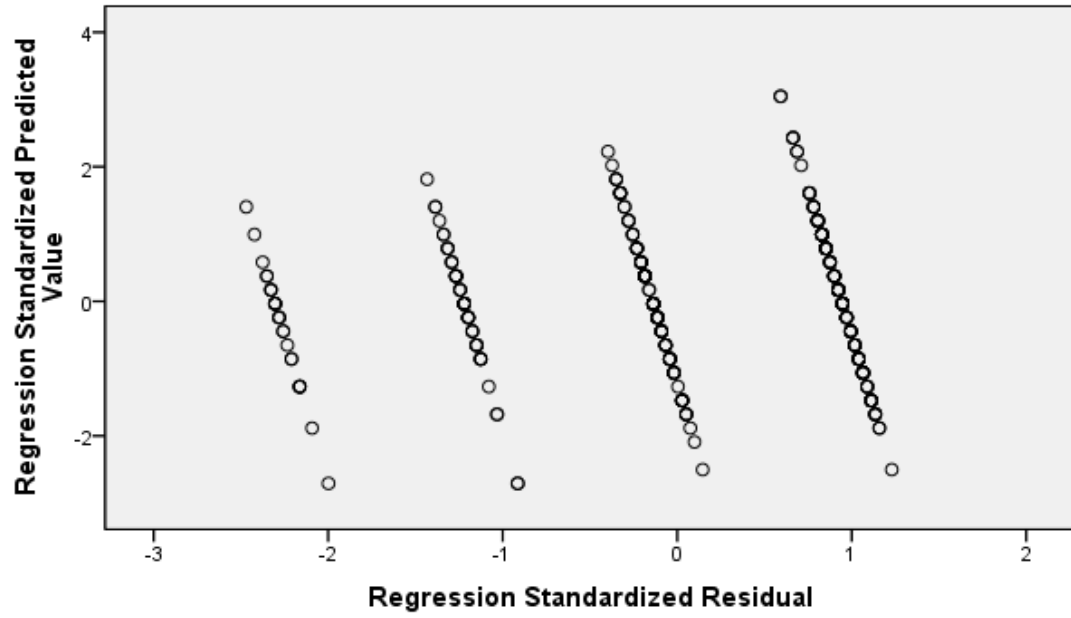
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI



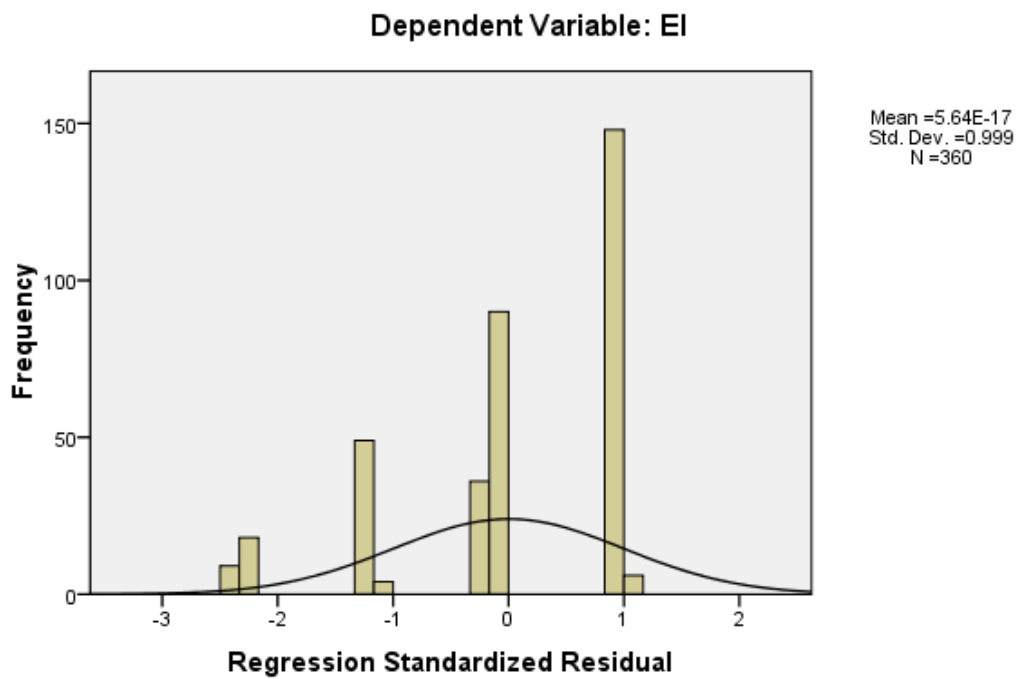
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Dependent Variable: EI



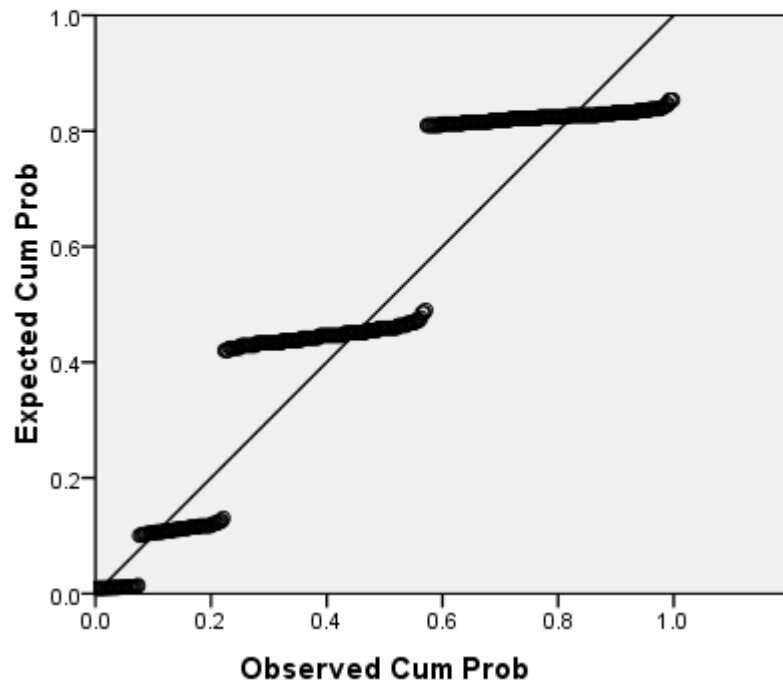
APPENDIX I: PLOTS FOR H4: VALUATION OF MONEY (LINEAR REGRESSION)

Histogram



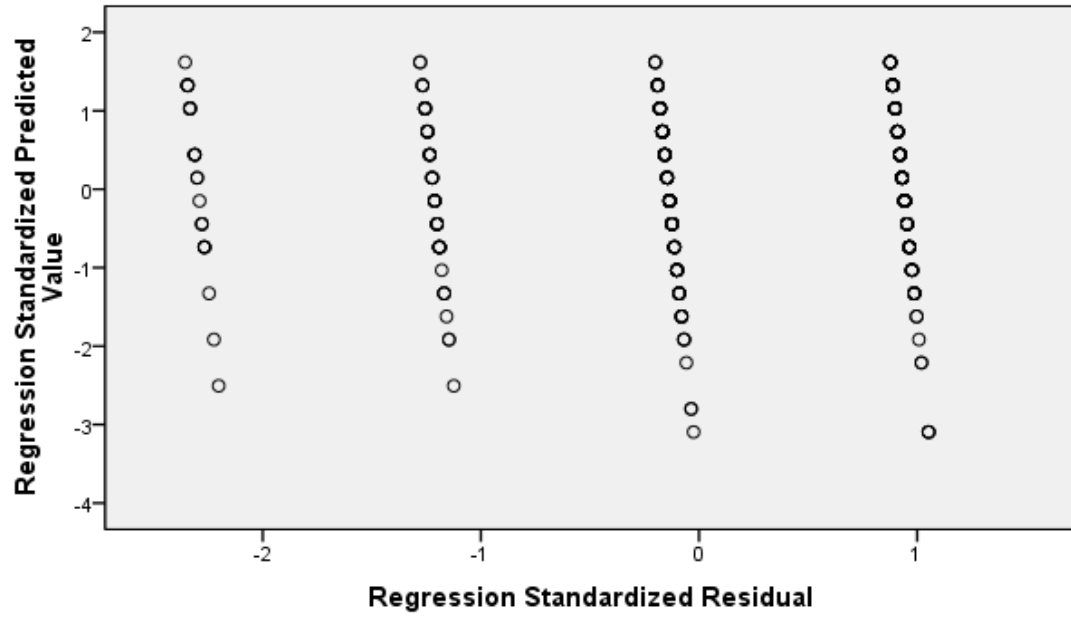
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI

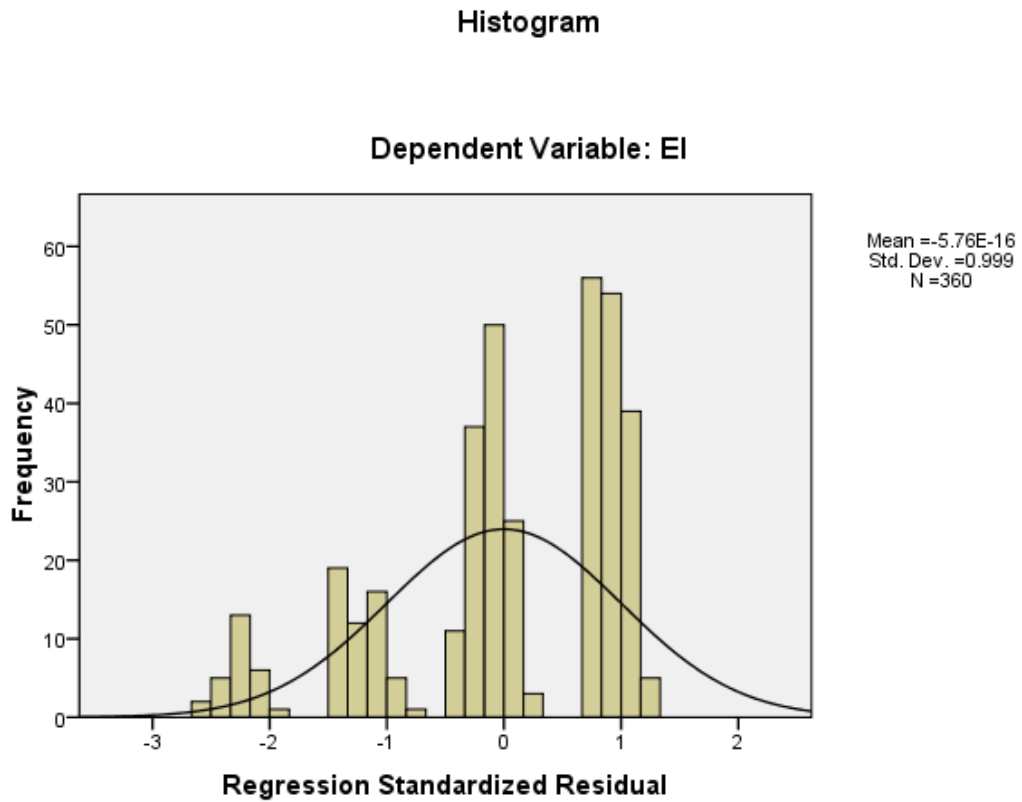


Scatterplot

Dependent Variable: EI

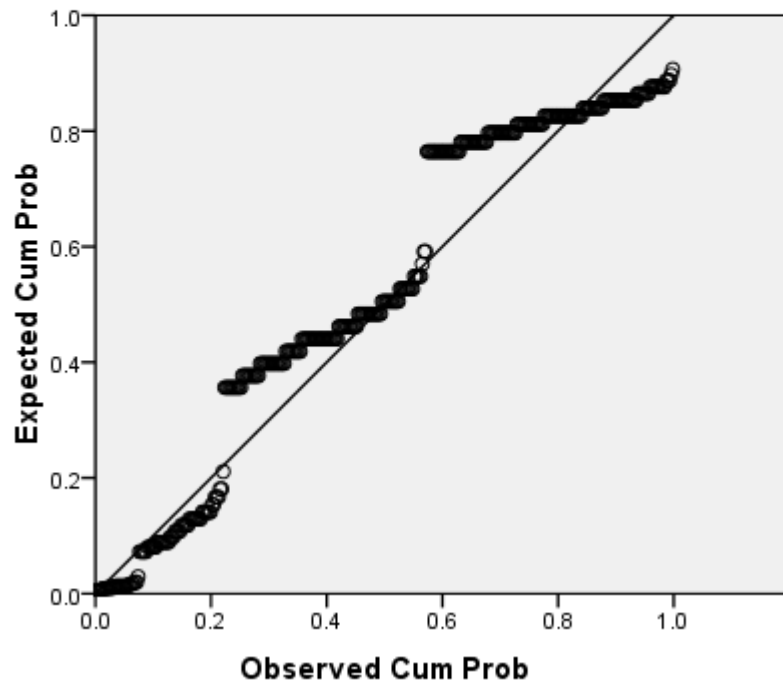


APPENDIX J: PLOTS FOR H4: ACHIEVEMENT MOTIVATION (LINEAR REGRESSION)



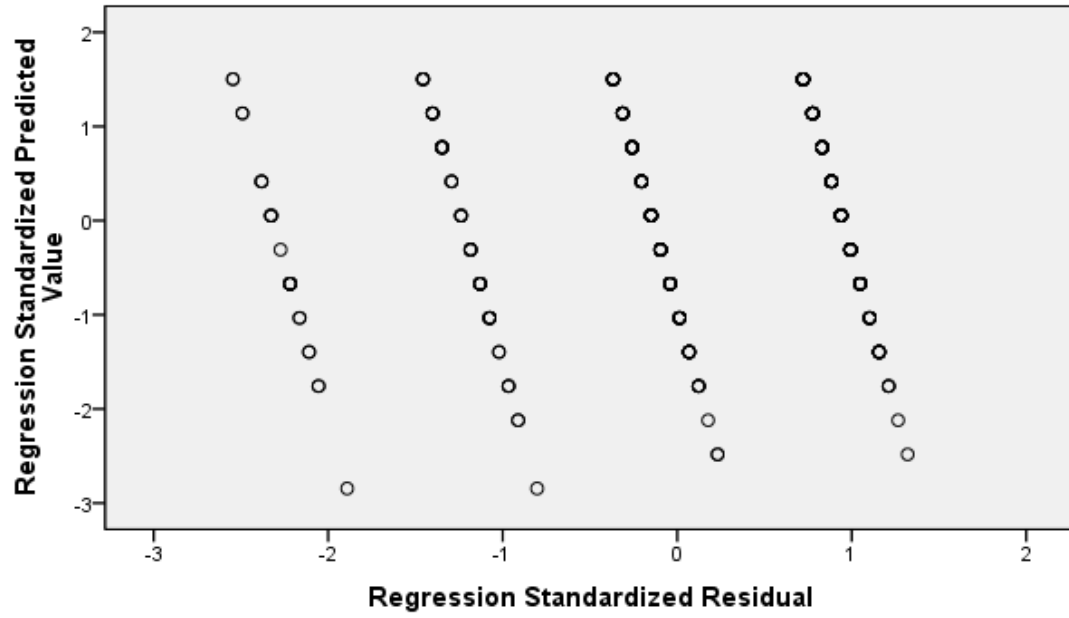
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI

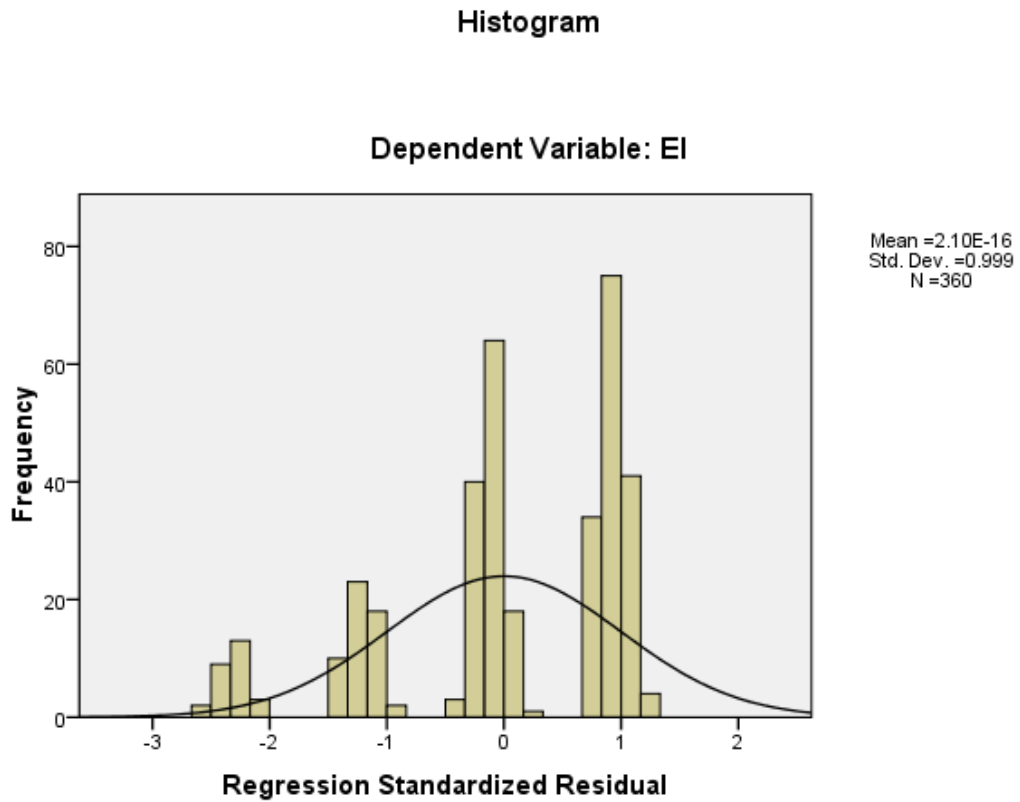


Scatterplot

Dependent Variable: EI

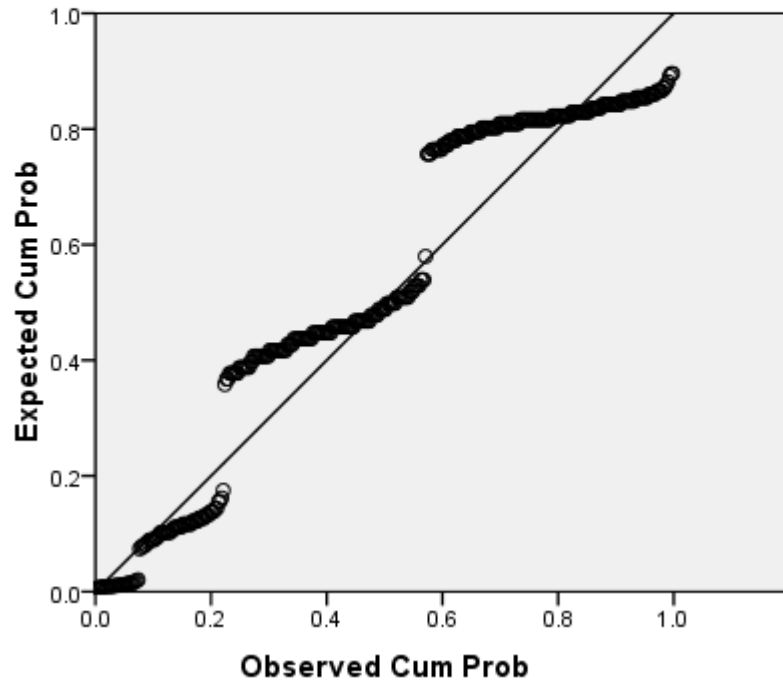


APPENDIX K: PLOTS FOR H4: GENERAL ATTITUDES (LINEAR REGRESSION)



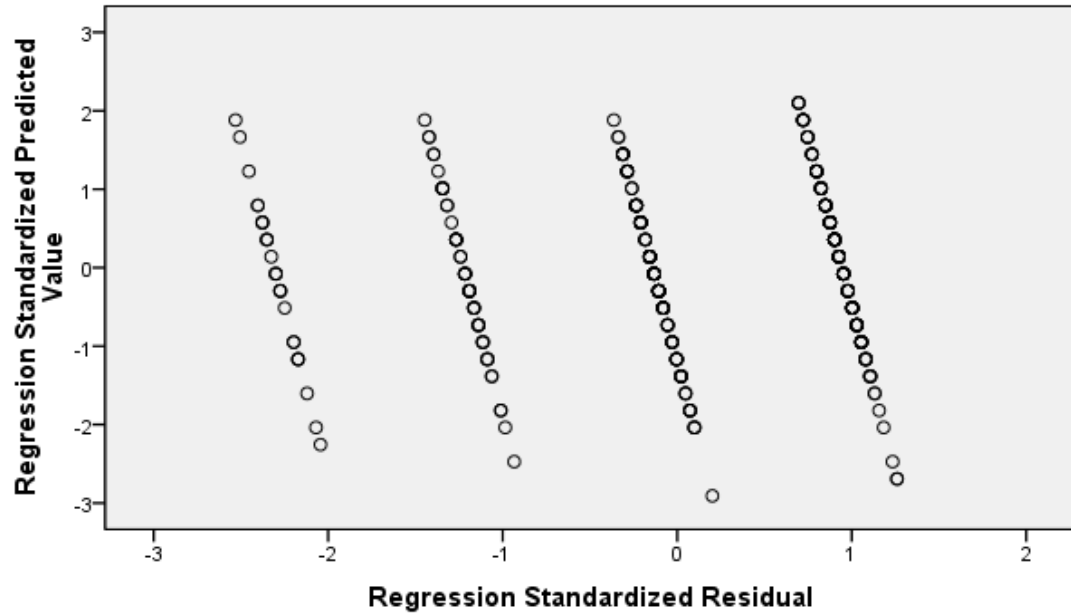
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EI



Scatterplot

Dependent Variable: EI



APPENDIX L: CONSISTENCY MATRIX

Hypothesis 1					
Sub-problem	Literature Review	Hypotheses	Source of data	Type of data	Analysis
The influence of gender on EI	Brush (1992); Brush <i>et al</i> (2006); Fay and Willams (1993); Boden and Nucci (2000); Ahl (2006); Lewis (2006)	H1 (a) Male FET students have higher entrepreneurial intentions than female FET students.	Questionnaire – 5 point Likert scale	Ordinal data	T-test
The influence of education-study discipline on EI	Gibb (2002);Gibb (2004) Gibb (2006); Schoof (2006); Blokker and Dallango (2008); Fayolle (2004); Lumpkin and Dees (1996); Kirby (2007)	H1 (b) Students exposed to FET entrepreneurial-related studies have higher entrepreneurial intentions than those in FET technical courses.	Questionnaire– 5 point Likert scale	Ordinal data	T-test

Hypothesis 1					
Sub-problem	Literature Review	Hypotheses	Source of data	Type of data	Analysis
The influence of entrepreneurial family background on EI	Crant (1996); Dyer (1992); Shapero and Sakol (1982); Krueger (1993); Davidsson (1995); Scherer (1990); Matthews and Moser (1995)	H1 (c) Students who have members of family entrepreneurs have higher entrepreneurial intentions than students who have non-entrepreneurial family members	Questionnaire– 5 point Likert scale	Ordinal data	T-test

Hypothesis 2

Sub-problem	Literature Review	Hypothesis	Source of data	Type of data	Analysis
The influence of SMME support programmes on EI	Fatoki (2010); Schwarz <i>et al</i> (2009); Franke (2003); Franke and Luthje (2004); Sciascia <i>et al</i> (2004); Roffe (1999); Autio <i>et al</i> (1997).	The promotion of entrepreneurship at FETs through exposure to government SMME support-programmes has a positive effect on entrepreneurial intentions.	Questionnaire – 5 point Likert scale	Ordinal data	Pearson's correlation coefficient

Hypothesis 3

Sub-problem	Literature Review	Hypothesis	Source of data	Type of data	Analysis
The influence of geographical location on EI	Shapero and Sakol (1982); Jones-Evans <i>et al</i> (2006); Davidsson (2001); Segal <i>et al</i> (2005); GosNahapiet and Ghoshel (1998).	Students at urban-based FET colleges have higher entrepreneurial intentions than rural-based FET-college students.	Questionnaire – 5 point Likert scale	Ordinal data	ANOVA

Hypothesis 4

Sub-problem	Literature Review	Hypothesis	Source of data	Type of data	Analysis
Establishing which antecedent has the strongest association with EI	Gerald and Saleh (2011); Douglas (1999); Robinson <i>et al.</i> (1991); Fishbein and Ajzen (1975); Autio (1997).	Entrepreneurial conviction has a stronger association than FET college supportiveness, image of entrepreneurship and general attitudes on the outcome variable of entrepreneurship intention.	Questionnaire – 5 point Likert scale	Ordinal data	Linear Regression Multiple Regression Stepwise Regression