

Intentions of students from the North West University to consider entrepreneurship as a career choice

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Abstract

Entrepreneurship is on everybody's lips nowadays; government is engaging and throwing its weight behind entrepreneurship. Today the question to occupy the minds of the politicians who are pro-development of the citizens of South Africa (SA) should be how to place South Africa on a higher economic growth path that benefits all. It is questions like this one that really challenge the status quo, and demand that the South African government together with its citizens roll up sleeves and deal with the twin challenge of unemployment and poverty (NPC 2012:40).

The study recognised as a problem the fact that there is no synergy between government, business and HE (Dempsey, Gore & Fal, 2011:6). However, the study confined itself to the entrepreneurial activity within HE and NWU in particular. Some questions were raised, like: how aware NWU students were about entrepreneurship, whether there were entrepreneurial programmes offered at NWU, if there was enough support for these entrepreneurial programmes and were students intending taking on entrepreneurship as their career choice upon graduating. The study tried to address these questions; some of them were answered quantitatively while others were addressed through literature review.

The primary objective of this study was to determine North-West University students' intentions to take entrepreneurship as a career choice. A primary and respondent population (N=200) of NWU BCom students were tested. Prior to conducting the main study, a pilot test was conducted to improve the reliability and validity of the questionnaire. Fifty-two of the Vanderbijlpark version of questionnaires were randomly distributed with the help of respective lecturers to target respondents in lecture halls as well as students in computer laboratories.

SPSS version 20.0 was used to analyse the data. The reliability statistics from the pilot study was found to be very high, i.e. a Cronbach's alpha of 0.887. The data from the main study was subjected to factor analysis in order to test the reliability and validity in this North-West University sample. The responses from the participants in the study were also subjected to Principal Component Analysis, which allowed inter-correlations between the factors to be revealed. Simple descriptive analysis was conducted to interpret the level of scores obtained from the respondents on

entrepreneurial intentions. Multiple regression analysis was done and a mathematical model which simulates the results of the study was constructed.

The model shows among other things that entrepreneurial inclination increases with an increase in entrepreneurial internships. This result has some implications for the university, in that the university will need to arrange for its students to complete an entrepreneurial experiential period before being conferred a qualification in entrepreneurship.

The study conceded that the findings are applicable specifically within the characteristics of the sample and the study region, i.e. university students at North-West University; therefore, extrapolation to other universities remains speculative.

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Firstly, I would like to thank God for His grace in enabling me to complete this dissertation. I would like to acknowledge the emotional support provided by my immediate family, my parents, brother and sisters, baby-girl, Kgantshang-Kgalalelo, baby-boy, Kitso-Lwazi and fiancé, Ntombenhle.

I am indebted to my supervisor, Prof Renier Jansen van Rensburg of the School of Business Management Faculty: Economic and Business Management at Potchefstroom Campus of the North-West University (NWU-PC), for the guidance provided during the completion of this dissertation.

Declaration

I declare that, apart from the assistance acknowledged, the research contained in the dissertation is my own unaided work. It is being submitted in partial fulfillment of the requirements for the degree Master in Business Administration at the Potchefstroom Campus of the North-West University. It has not been submitted before for any degree or examination to any other University.

Nobody, including Prof R. Jansen van Rensburg (Supervisor), but myself is responsible for the final version of this dissertation.

Signature.....

Date.....

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Index of Abbreviations

ANOVA – Analysis of Variance

AEI – Adcorp Employment Index

CfE – Center for Entrepreneurship

DoE – Department of Education

DTI – Department of Trade & Industry

EDC – Enterprise Development Center

EE – Entrepreneurial Education

EI – Entrepreneurial Intention

FIFA – Fédération Internationale de Football Association (International Federation of Association Football)

GDP – Gross Domestic Product

GEM – Global Entrepreneurship Monitor

GEP – Gauteng Enterprise Propeller

HE – Higher Education

ICT – Information and Communication Technology

ISP – Incubator Support Programme

MBA – Master of Business Administration

NGO – Non-Governmental Organisation

NPC – National Planning Commission

NPO - Not-for-Profit Organisation

NWU - North-West University

NWU-PC – North-West University Potchefstroom Campus

NWU-VTC – North-West University Vaal Triangle Campus

PDE – Postgraduate Diploma in Entrepreneurship

PDEM – Postgraduate Diploma in Enterprise Management

PhD – Doctor of Philosophy

SA - South Africa

SAIHET – South African Institutions of Higher Education and Training

SEDA – Small Enterprise Development Agency

SEDA TP – Small Enterprise Development Agency Technology Programme

SEE – Shapero’s model of the Entrepreneurial Event

SME – Small and Medium Enterprises

Softstart BTI – Softstart Business Technology Incubator

SPSS - Statistical Package for Social Science

SUN – University of Stellenbosch

TEA – Total Early-stage Entrepreneurial Activity

TIMSS - Trends in the International Mathematics and Science Study

TOP – Temporary Entrepreneurship Positions

TPB – Theory of Planned Behavior

UCT – University of Cape Town

UFH – University of Fort Hare

UFS – University of Free State

UJ – University of Johannesburg

UKZN – University of KwaZulu-Natal

UL – University of Limpopo

UN – United Nations

UP – University of Pretoria

UR – Rhodes University

UT – University of Twente

UNESCO - United Nations Educational, Scientific and Cultural Organisation.

UWU – University of Western Cape

Wits – University of Witwatersrand

YES!Delft – Young Entrepreneurs Society Delft

Y-AGE – Youth and Graduate Entrepreneurship

Chapter 1 Nature and scope of the study

1.1 Introduction

Today the question that occupies the minds of the politicians who are pro-development of the citizens of South Africa (SA) should be how to place South Africa on a higher economic growth path that will benefit all. It is questions like this one that really challenge the status quo, and demand that the South African government together with its citizens roll up sleeves and deal with the twin challenge of unemployment and poverty (NPC 2012:40). The continued prevalence of these two problems is an indication that not enough is done to defeat them. This study seeks to investigate entrepreneurial intentions of students from the North-West University (NWU) in taking entrepreneurship as a career choice. It is a belief of this study that entrepreneurship can play a major role in addressing the economic growth problem, how? That remains to be seen from the outcomes. The study agrees with most of the advocates of entrepreneurship and Fayolle, Gailly and Lassas-Clerc (2005:3) could not have been more correct by stating that in terms of the general educational context “empirical research has shown that both the presence of entrepreneurship education programmes and a positive image of venture creators within educational institutions are incentives for students to choose an entrepreneurial career.”

This is true for most of the developed economies, such as China where the entrepreneurial intention stood at 43% (GEM, 2011:8). South Africa is recognised as an efficiency-driven economy, which means government’s focus is (or should be) on ensuring smooth mechanisms such as a proper functioning of the market, higher education systems, goods and labor markets and technological readiness (GEM, 2011:8). There is, however, still a long way before South Africa starts to enjoy the fruit of entrepreneurship on the economic growth. This is shown by lower percentage (14%) when it comes to people intending to embark on entrepreneurship activities (GEM, 2011:8).

Unemployment and poverty remain two ills which continue to plaque South African citizens. Even though the unemployment rate is estimated at 24,9% as of the third quarter 2012 as reported in the media (Isa, 2012), it is much worse than that because this num-

ber only caters for that part of the population which is actively looking for employment opportunities. The expanded unemployment rate stands at 36,2% as of the third quarter 2012 (Isa, 2012), which includes discouraged workers, i.e. workers who are available for work, but are currently not looking for it because they believe there are no jobs available for them. Of this number, about 42% is young people according to Naidoo (2012). This means that at this rate it will be difficult to defeat the battle against poverty and have an economy strong enough to create jobs. A result can be that when the current work-force (skilled or unskilled) retires from their employment, the generation which must take over, will consist of a force that spent longer periods of time unemployed.

Government continues to put in place measures that will assist in fighting unemployment but the illiteracy level counteracts that. South Africa's public education spending as a proportion of total government spending amounted to 18% in 2009/10; however, data sourced from the United Nations Development Programme's Human Development Report shows that South Africa has an adult literacy rate of 89% (UNESCO, 2012:1). The UN defines the adult literacy rate as the proportion of people aged 15 years and above who can read, write, and speak (UNESCO, 2012:1).

This factor counts against the effort of launching a fight against unemployment at many levels. The first level being that the larger percentage of the adult population, although they can read or write, remains in the bracket of unskilled labour force (Van der Berg & Louw, 2004:4). The second one being that, as children learn and advance at school, their parents are left behind and cannot assist them with assignments, homework, projects etc. With time this gap or high illiteracy levels may start to decline, which would be very precious looking at the current state of basic education in the country. Although the current state of basic education deserves thorough attention, that is not the brief of this study. The levels referred to earlier are affecting education in general, not specific disciplines.

South Africa is faced with the daunting task of addressing unemployment and alleviating poverty; with addressing unemployment it becomes particularly difficult given the state of education in the country, illiteracy levels and technological advancement in the labor

market (Van der Berg & Louw, 2004:6 – 7). The dynamism of technology spells a demand for a specific labor force. The type of employee required is one that is equal to the task in the sense that they should possess a relevant set of skills and technological expertise to perform a specific task. Pauw, Oosthuizen and Van der Westhuizen (2006:1) state that the majority of unemployed individuals are poorly educated and possess limited skills, while firms increasingly demand high-skilled workers.

South Africa does not seem to fare well on that level as pupils continue to perform very badly compared to pupils from other countries participating in trends in the international mathematics and science study (TIMSS). The last time South Africa took part in the TIMSS was in 2003 and the performance was dismal: out of an imputed maximum score of 800, the average South African Mathematics score was 275 for TIMSS 1999 and 264 for TIMSS 2003. The average Science score was even lower than the average Mathematics score, namely 243 for TIMSS 1999 and 244 for TIMSS 2003 (DoE, 2009:87). Just in the last quarter of 2012 the World Economic Forum's annual report on financial development placed South Africa last in a ranking of 62 countries in the quality of mathematics and science education (Gernetzky, 2012).

With this stark reality it is difficult to begin to address unemployment because the kind of work force needed is a sophisticated one as technology has advanced and the South African work force is lagging behind. This in itself demands that the education sector produce more people with relevant skills to be absorbed in the labour market. This is just talking about throughput for the labour market which has been regarded as primary responsibility of higher education according to Louw et al. (2003:3). Failure to adequately address unemployment problems results in a defeat in alleviating poverty.

Turning the focus to what the government, business and HE are doing concerning promoting and cultivating the entrepreneurial spirit, one finds that there are lots of fragmented interventions, yet there remains no policy which deals specifically with entrepreneurship in SA.

There is enough entrepreneurship activity going on to spark an intense entrepreneurship drive. Many stakeholders from different elements of society are attempting to foster greater entrepreneurship in South Africa (Nicolaidis, 2011:1044). With different stakeholders offering different support, for instance, partnerships like the Youth and Graduate Entrepreneurship (Y-AGE) offer support (Salga Y-Age, 2011:5), government bodies like the Department of Trade & Industry and the Small Enterprise Development Agency (SEDA) as well as private participants and non-profit-organisations (NGO) like the Black Umbrella Shanduka and others offer funding; academic institutions like North-West University, Gordon Institute of Business Science and the University of Johannesburg offer skills (Nicolaidis, 2011:1044). They all contribute towards this critical cause. However, these fragmented approaches do not appear to be producing acceptable results. Greater effort should be put into trying to combine the various support structures. People sometimes consider starting up a business because they are unemployed due to re-trenchment or due to retirement. This not only often leads to a high failure rate of businesses, but it also indicates the need for an integrated support structure. Next, the study states the identified problem.

1.2 Problem Statement

In section 1.1 it was stated that there exists enough entrepreneurship activity to spark an intense entrepreneurial drive, as well as entrepreneurial impact on the economy. However, the problem is that all these initiatives are done in silos. The lack of an integrated approach continues to relegate entrepreneurship to the periphery instead of bringing it to the center so that it is recognised for the impact, growth and possibilities it can offer the South African economy, or for the impact it can have on unemployment and other social tensions in the country. Failure to harness entrepreneurship in the country has seen over the years an influx of people from overseas and from other African countries into South Africa, many of whom have become vibrant entrepreneurs. This phenomenon does not help in creating role models that will inspire the majority of South Africans to appreciate the role entrepreneurship can have in their own lives and in the communities they live in.

The study recognises as a problem the fact that there is no synergy between government, business and HE. However, the study confines itself to the entrepreneurial activity within HE and NWU in particular. Some questions were raised, like: how aware NWU students were about entrepreneurship, whether there were entrepreneurial programmes offered at NWU, if there was enough support for these entrepreneurial programmes and were students intending taking on entrepreneurship as their career choice upon graduating.

The question that follows from this is whether an interest in taking entrepreneurship as a career choice is determined solely by one's background, mindset, attitude and mental framework, or whether it can be cultivated and taught. As a consequence this study would investigate the entrepreneurship awareness and the role played by entrepreneurship in the economy. Further it is the desire of this study to determine the relationship between entrepreneurial exposure and the intentions to choose entrepreneurship as a career. The objectives of this study are outlined in the following section.

1.3 Objectives of the study

The objectives are outlined as follows, first the primary objective is mentioned and then four secondary objectives are mentioned.

1.3.1 Primary objective

The primary objective of this study is to determine North-West University students' intentions to take entrepreneurship as a career choice.

1.3.2 Secondary objectives

The secondary objectives of the study are to:

- Review a broad overview of entrepreneurial activity and entrepreneurship educational trends within two campuses of the North-West University.
- Investigate entrepreneurship as a discipline and field of academic inquiry.
- Investigate the support for these entrepreneurial programmes within NWU.

- Investigate the entrepreneurial intentions (EI) of selected students within NWU.

1.4 Research methodology

The section is divided in two sub-sections. The first sub-section mentions the nature of this study under literature study. The second sub-section discusses how data is going to be collected, the sample size, organisation of interest and the software to be used to analyse the data.

1.4.1 Literature study

This was a quantitative study. There was a heavy reliance on the literature concerning entrepreneurship, entrepreneurship education, entrepreneurial activities and entrepreneurial intention.

1.4.2 Empirical study

Data was collected from a self-administered questionnaire conducted among 200 students from NWU's two campuses (Vanderbijlpark and Potchefstroom). The unit of analysis comprised of the students whose curriculum includes entrepreneurship and those who do not study any entrepreneurship related courses. The sample comprised of 200 students out of the 3479 BCom (2nd and 3rd year) student population of NWU across the two campuses. The sample was on the basis of non-probability. There was a response rate of 98% (i.e. 196 of the 200 questionnaires were correctly filled-in and usable).

The questionnaire was adapted from various sources and was used as a means of data collection. The questionnaire consisted of 8 parts: demographic and family background, future career planning and entrepreneurial intention, image of entrepreneurship, role models, university's role in promoting entrepreneurship course(s), the entrepreneurial curriculum and content, personal independent learning approach and the internship programmes.

The operationalisation of the model is shown in Figure 3.1 on page 36. The scale used in the questionnaire was based on a 5-point Likert scale (with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) for each close-ended question. Participation in this study was on voluntary basis and the respondents were given approximately thirty minutes to complete the questionnaires. After data was collected, it was analysed using SPSS version 20.

During June 2012 an exploratory trip was taken to the Netherlands to explore and learn about entrepreneurship activities within the university setting. Interviews were conducted with entrepreneurs or people involved with incubators. These interviews are included as part of this study because they form part of entrepreneurial initiatives which can be employed.

1.5 Limitations of the study

The most obvious limitation of the study is its one dimensional design, one dimensional in the sense that only a questionnaire was used to collect data. Therefore, firm conclusions about the views of the respondents in the study cannot be drawn.

The data collection was confined to only two campuses of NWU (i.e. Vanderbijlpark and Potchefstroom) since there were some constraints faced during data collection, constraints such as time, human and financial resources. The replication of the study at different universities of South Africa (especially the 11 conventional universities) would have enabled better generalisation of the findings of this study. A comparison study might also assist in determining entrepreneurial culture with the institutions of higher education.

The sample for the present study comprised of 200 entrepreneurship and non-entrepreneurship students of NWU. This sample was only a very small proportion of the entire BCom students population of NWU across the two campuses, namely the ones busy with the second and third years of their study. Therefore, research studies with a

much larger sample size would be required to ensure appropriate generalisation of the findings of the study.

1.6 Layout of the study

The following is a brief outline of the entire study. A clear and brief layout is given to show all the relevant topics and aspects of research relevant to chapters two to four. The dissertation uses the research proposal as a base.

Chapter 2 Entrepreneurship and entrepreneurship education. The definitions of entrepreneurship, entrepreneurship education, entrepreneurial activity and entrepreneurship intentions are given in this chapter. This chapter is dedicated to a literature study of these concepts and lays a foundation for the concepts that will be used in subsequent chapters.

Chapter 3 Research methodology. The chapter constructs the profile of the entrepreneurship intentions student population of the North-West University. Here an analysis will be done on entrepreneurship intentions, image of entrepreneurship, role models, the university's role in promoting entrepreneurship, the entrepreneurial curriculum and content, personal independent learning approach and the entrepreneurship internship programmes. The educational background and the highest qualifications that students possess are also analysed. Multiple regression analysis will be done and a mathematical model which simulates the results of the study will be constructed.

Chapter 4 Conclusion, Implications and Recommendation, Limitations and Future Research. This chapter will present a summary of the findings of the study as well as a conclusion and recommendation.

Chapter 2 Entrepreneurship and Entrepreneurship Education

2.1 Introduction

This chapter focuses on the entrepreneurship material as appearing in literature. It starts by presenting the current state of entrepreneurship in South Africa; this is not exhausted in totality but only parts which are relevant to the study are presented. This is done in a rather peculiar fashion, in the form of graphs sourced from different research houses which are covered under section 2.2; the chapter then defines entrepreneurship; thereafter it looks at entrepreneurial intentions and entrepreneurship activity as well as discusses the measurement of entrepreneurial activity. The literature will include interviews of entrepreneurs or people involved with incubators, conducted during an exploratory trip taken to the Netherlands from 23 – 30 June 2012 to explore and learn about entrepreneurship activities within the university setting. The inclusion of these interviews as part of this study is because they form part of entrepreneurial initiatives which can be employed.

2.2 Current State of Entrepreneurship in South Africa

This section introduces the current state of entrepreneurship in South Africa. It draws heavily on media coverage on entrepreneurship as they are more current than literature from research articles. This is by no means to say this study is conducted through media. It is just to cover as much current developments as possible regarding entrepreneurship. And again to show that the study has its ears close to the ground, this is motivated by the fact that entrepreneurship is on everybody's lips nowadays, government is engaging and throwing its weight behind entrepreneurship.

Big businesses show their support more than ever; for instance, the emergence of Shanduka Black Umbrellas shows among other initiatives keenness by big businesses to support small businesses (Shanduka Black Umbrellas, 2009). There are initiatives all over on the subject, for instance Gauteng provincial government's support for different initiatives; among them is the Youth and Graduate Entrepreneurship development programme (Y-AGE). Y-AGE prides itself as being different from other youth development

programmes. On its website it is quoted as stating that “it is a Public-Private Sector Partnership initiative that looks to harness the expertise and experience of established entrepreneurs to mentor these new business leaders of tomorrow. It incorporates a global best practice approach to its business model that focuses on research, recruitment, selection, training, funding, monitoring and evaluation, and finally mentorship and support, to ensure programme success for the long-term” (GEP, 2012).

Recent media reports are reporting positive changes that are aimed at the entrepreneurial landscape in South Africa. Entrepreneurial landscape has begun to take the form that promotes and develops entrepreneurship in South Africa.

It is unmistakable to mention that small business growth is essential for economic growth and job creation (Louw *et al.*, 2003:5), which in turn will help to alleviate poverty. In creating wealth, small businesses in South Africa contribute approximately 57 per cent to the country’s gross domestic product (GDP) according to Abor and Quartey (2010:218).

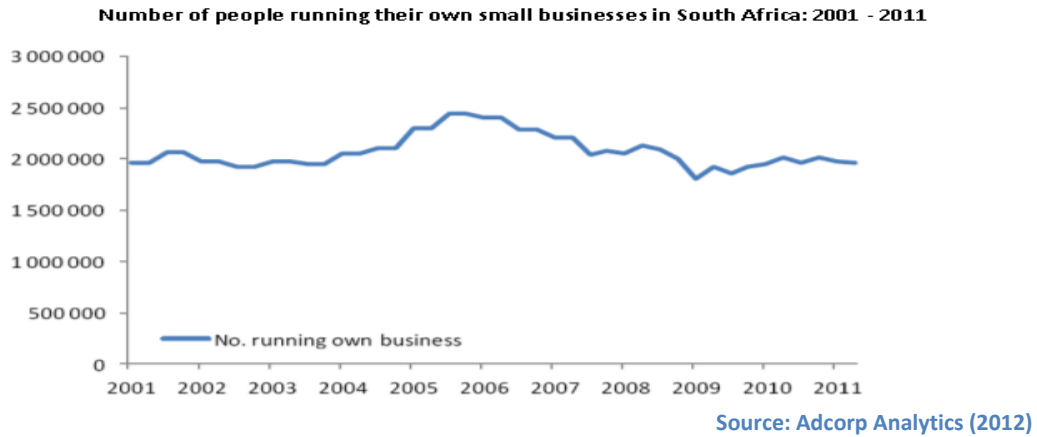
Adcorp Employment Index (2012) is the latest press release which shows that the informal sector and small businesses are major players in the employment of South Africans; with the informal sector having been able to create 22,000 jobs out of 24,000 jobs during the month of February 2012 (AEI, 2012:1). Small businesses account for 68% of employees in the country (AEI, 2012:1). Furthermore, there has been media reports on the support by government in a form of incubator support programme (ISP) which was launched on 16 September 2012 (Dti, 2012).

The National Planning Commission has also put entrepreneurship on its plan to invigorate and expand the economy of the country (NPC, 2012:120).

All these are good signs that small businesses play a role in the broader economy; government is now considering this role played by small businesses and is committed to strengthening its support for these small businesses. This support will be much appreciated by the small businesses as there has been a notable failure experienced by

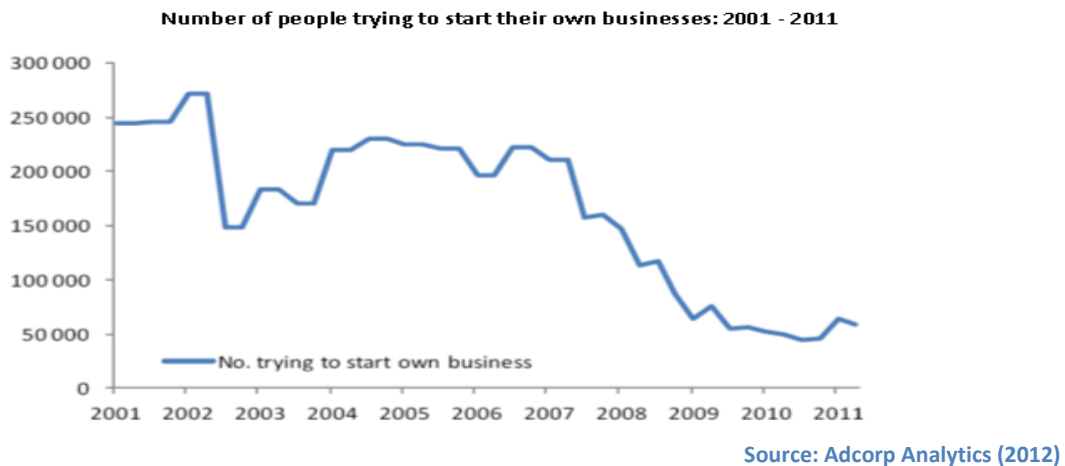
them. AEI (2012:1) has reported that more than 440,000 small businesses have failed in the past five years. The graph in Figure 2.1 below demonstrates the trend in the number of people running their own small business in the country during the period 2001 to 2011.

.....
Figure 2.1: No. running own business



In Figure 2.2 below, the graph shows a decline in the number of people trying to start their own businesses for the period 2001 to 2011.

.....
Figure 2.2: No. trying to start own business

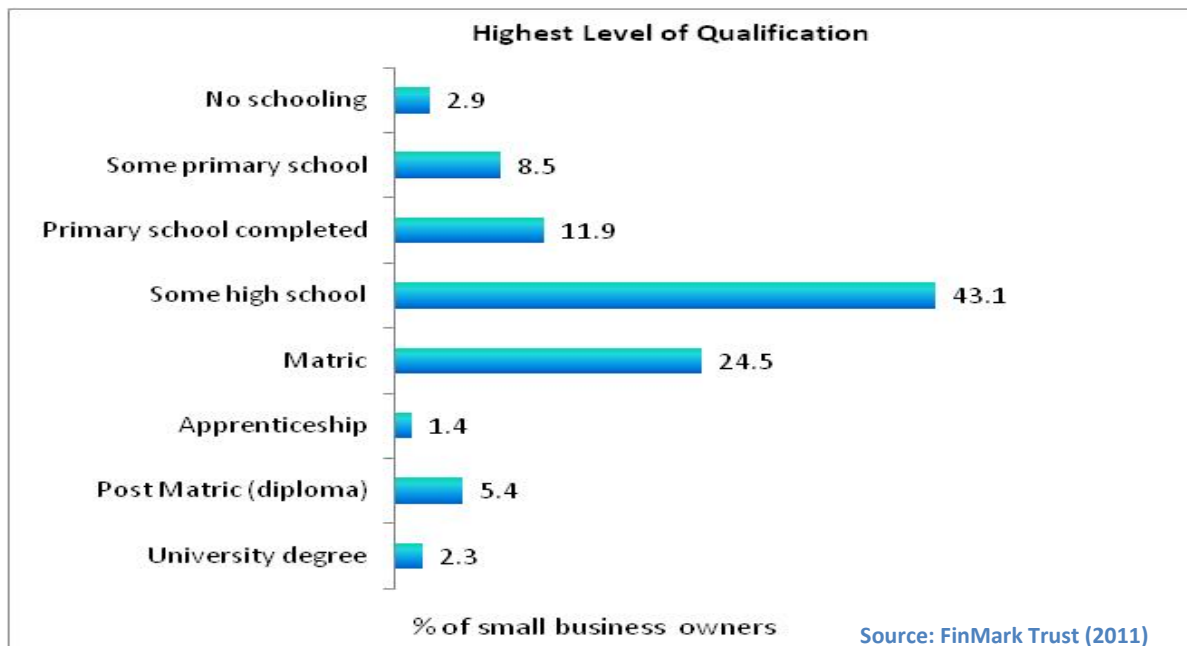


The two figures indicate the prevailing challenges faced by the small businesses despite the fact that these small businesses continue to play a considerable role when it comes to providing employment and contributing toward GDP of the country. These declining

figures may be explained in part by what FinMark Trust (2011:30) has pointed out in its research. Figure 2.3 below indicates the percentage of the small business owners' highest qualification. Small business owners with matric and post-matric qualification account for 33.6% (FinMark Trust, 2011:30).

The majority of people owning small businesses have less than matric qualification (this includes those with some high-school experience, those who completed primary school, those with some primary-school experience and those with no schooling at all), which accounts for 66.4% (FinMark Trust, 2011:30). Although the results as discussed above and shown below in Figure 2.3 are from literature, they strengthen the primary objective of this study: determining the North-West University students' intentions to take entrepreneurship as a career choice. This is for the mere fact that the university qualification accounts for only 2.3% of people owning small businesses (FinMark Trust, 2011:30).

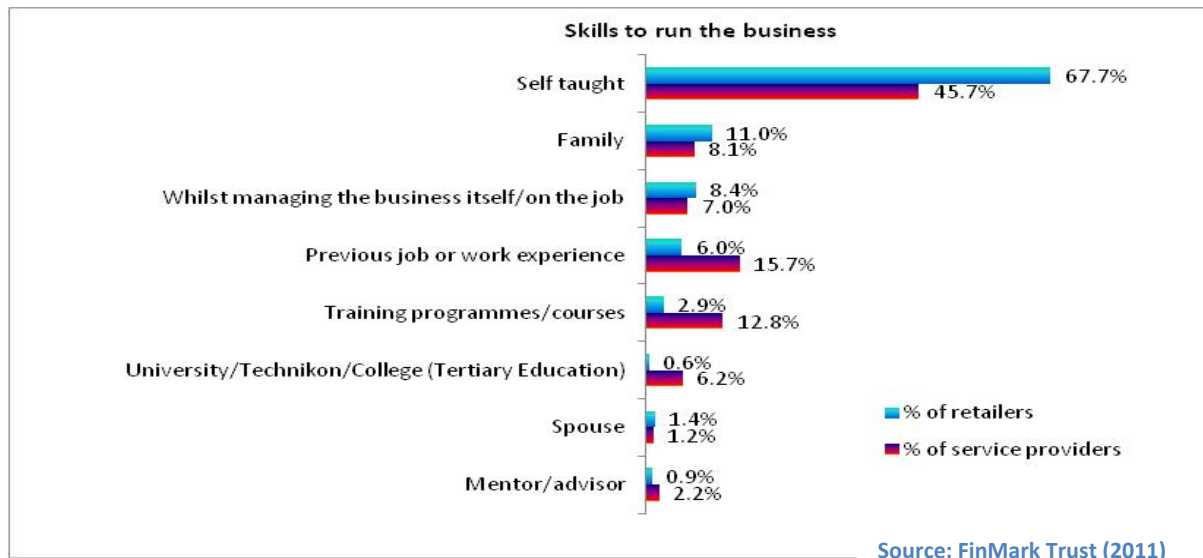
.....
Figure 2.3: Percentage of Small Business Owners



Other interesting information regarding small business owners is by what means they acquired the skills to run their businesses. Once again there is clear evidence that the university ranks lower in terms of the skills source for small business owners. Figure 2.4 on page 13 indicates the percentage of retailer versus the service providers. The per-

centage of service providers who acquired the skills to run their businesses through the university is 6.2% and for the retailers is 0.6% (FinMark Trust, 2011:31).

Figure 2.4: Skill source



Louw *et al.* (2003:6) have long noted that the gap for an entrepreneurial-driven economy in South Africa is increasing in particular because of the aforementioned benefits and it is therefore essential to develop and equip the students with the skills required to become employers. Next the study attempts to define entrepreneurship as found in the literature, which has eluded researchers and scholar of entrepreneurship since the birth of entrepreneurship.

2.3 Entrepreneurship definition

Many authors in entrepreneurship have conceded that finding a single appropriate and ubiquitous definition of entrepreneurship has proved a challenging problem for academic researchers and students of entrepreneurship (Louw *et al.*, 2003:7). This is illustrated by a short selection of entrepreneurial definition compiled by Louw *et al.* (2003:8), which define entrepreneurship differently. However, the study has defined entrepreneurship as an intersection of entrepreneurial opportunity and entrepreneurial capacity, and this is closely related to the common characteristics of successful entrepreneurs as given by

Louw *et al.* (2003:7) after scrutinising different definitions they have tabulated. These common characteristics are:

- recognition of business opportunity;
- creating, establishing and/or expanding profitable economic organisations through time, effort and money;
- blending of creativity, innovation and risk-taking with hard work;
- correct appropriation of resources (Louw *et al.*, 2003:7)

The first point above coincides with the first part of a simple definition given before and points two to four coincide with the entrepreneurial capacity. Next the study looks at entrepreneurship education.

2.4 An overview of Entrepreneurship Education

World-over finding jobs have become highly competitive; the total job opportunities are becoming scarce and thus job seekers must compete to secure a job. This prevailing situation makes it difficult for a graduate to find a job upon graduating according to Keat, Sevarajah and Meyer (2011:206). Keat *et al.* (2011:207) further allude that all over the world more and more students are embarking on a business education that can equip them with the necessary entrepreneurial knowledge and skills to succeed in running businesses or creating jobs from seizing existing entrepreneurial opportunities.

There are twenty three public higher education institutions (HE) in South Africa (SA), namely: eleven conventional universities of which NWU is part of, six comprehensive universities and six universities of technology. The study will only concern itself with conventional universities. The majority of the universities that fall within this category offers entrepreneurship as a module: Bachelors degree (B-degree), graduate degree (Honours and M-degree), doctoral studies (PhD) or as part of their Master of Business Administration (MBA). Some of these universities have centers established which focuses on entrepreneurship education (EE) and research.

Universities of Fort Hare and Limpopo do not have evidence of the existence of entrepreneurship programmes (UFH and UL).

University of Cape Town offers a postgraduate diploma in entrepreneurship (PDE) and also social entrepreneurship as part of its MBA degree (UCT).

University of Free State has a unit for entrepreneurship established with the primary objective of delivering various services to and developing the micro-entrepreneurial sector. The university also offers a B-degree in entrepreneurship (UFS).

University of KwaZulu-Natal offers entrepreneurship as part of its MBA programme (UKZN).

North-West University through all three of its campuses offers entrepreneurship as a part of a B-degree, graduate degree, PhD, as well as part of its MBA programme which is offered at Potchefstroom and Mafikeng campuses (NWU). NWU Vaal Triangle Campus has established an enterprise development center (EDC) with the purpose of creating an environment conducive enough for students to create their businesses either during the term of their studies or when they are done with their studies (NWU).

University of Pretoria offers entrepreneurship as a part of a B-degree, graduate degree, PhD, as well as part of its MBA programme (UP). The university also has an established business incubator within which Softstart business technology incubator on behalf of SEDA TP provides the initial seed funding and operational assistance (Softstart BTI, 2012). This incubation program is designed to aid in the successful development of entrepreneurial companies, by offering an array of support services and resources. A strong focus is placed on ICT orientated entrepreneurs but also is open to any student enrolled at the University of Pretoria with a business idea (Softstart BTI, 2012).

Rhodes University offers a postgraduate diploma in enterprise management (PDEM) (UR).

University of Stellenbosch offers entrepreneurship and management as part of its B-degree (SUN).

University of Western Cape offers entrepreneurship as part of both its undergraduate and graduate programmes (UWC).

University of Witwatersrand (Wits) has a center for entrepreneurship (CfE) established to position itself as internationally leading research-intensive university located in Africa (Wits). Wits also offers entrepreneurship as part of its undergraduate programme and furthermore, a student can do a Master of Management degree in Entrepreneurship and New Venture creation (Wits).

The aforementioned offerings of entrepreneurship at various South African universities follow the international trends that have been established within many institutions of Higher Education (HE) around the world. These institutions have embraced the idea of introducing entrepreneurial courses to their students as a mechanism to promote entrepreneurship and offer it as a professional entrepreneurship career. Nicolaidis (2011:1045) supports this by stating that the primary function of HE should be to seek to instill a greater entrepreneurial character among students. Kuratko (2005:577) has found that by 2005 there were more than 1600 colleges and universities in the United States that offer more than 2200 courses in entrepreneurship and small business management.

According to Landstorm (cited by Keat *et al.*, 2011), many dialogues, forums and training programmes organised by educational institutions were all in favour of entrepreneurship development apart from being the subject taught at colleges and universities. These debates are expected to help foster the entrepreneurial spirit; moreover, students are expected to have an attitude change especially after having undertaken entrepreneurial courses; students are also expected to value entrepreneurship as a personal and future career development alternative (Keat *et al.*, 2011:207). Wang and Wong (2004:163) recognise that due to the influence that education could have on the attitudes and aspirations of students, there is a need to understand how to develop and nurture potential entrepreneurs even while they are still learners at school. They further mention that few empirical studies have examined the entrepreneurial propensity of university students as a source of future entrepreneurs.

Innovation-driven economies have taken a lead in researching and writing about entrepreneurship education and training, starting primarily in the 1980s and accelerating after the turn of the century as interest in entrepreneurship increased and the contribution of new businesses to the growth of a national economy gained recognition (GEM, 2010). The effort by Shigeru Fujii of Kobe University in Japan in 1938 (Alberti, Sciascia & Poli, 2004:5) and later by Myles Mace at Harvard Business School in 1947 (Kart, 2003:283) has ensured that innovation-driven countries are the springboards of entrepreneurship education. Over the years more countries have moved into the innovation-driven category, at the moment there are 20 top countries that have managed to remain in that bracket since 2010. These are the countries which are hard pressed to have their economies producing new and different goods using the most sophisticated production processes and through innovation (Schwab, 2010:14). And by way of how things are in terms of the world rankings as far as innovation-driven category is concerned, these countries are getting it right, not only that but also that they extensively use the effect of entrepreneurship.

The question of how these countries manage to sustain their dominance can be asked. GEM (1999) argues that for entrepreneurship to take effect there needs to exist an entrepreneurial opportunity that should be met by an individual who can recognise it, be motivated enough and have relevant skills needed to turn the perceived opportunity into a business reality. It goes without saying how worthless the entrepreneurial opportunity will be without entrepreneurial capacity to seize it, as defined by GEM (1999) that entrepreneurship is the intersection of entrepreneurial opportunity and entrepreneurial capacity.

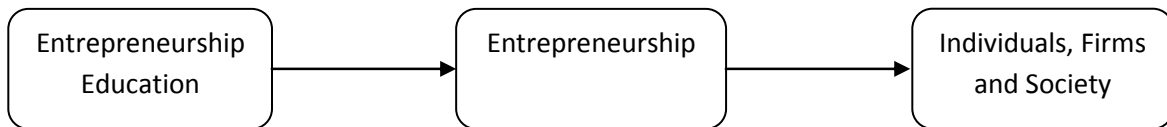
GEM (1999) further elaborates that the production of new products or establishment of new services or creation of new ventures calls for some certain level of education and training. This being the case, GEM (1999) concludes that it is reasonable to expect that the better educated the population, the higher the level of entrepreneurial activity. Now since GEM (1999) puts forward education as one of the important entrepreneurial capacities needed to succeed in the entrepreneurial environment, this answers the ques-

tion asked earlier; a country remains dominant as a result of the high level of training and education among its citizens.

Alberti *et al.* (2004:2) mention that few studies have shown the positive impact of entrepreneurship education on the development of entrepreneurial skills and values. Alberti *et al.* (2004:3) further show the relation that brings about this positive impact, they present that entrepreneurship education fosters entrepreneurship, which in turn results in positive outcomes on individuals, firms and society. This is depicted in Figure 2.5 below.

.....

Figure 2.5: The relevance of entrepreneurship education



Source, Alberti *et al.*, 2004

The past 30 years have witnessed an enormous growth in the number of small business management and entrepreneurship courses at different educational institutions (Alberti *et al.*, 2004:5). They further allude to the fact that quite a substantial number of programs broadly termed as entrepreneurship education have been carried out in schools and higher educational institutions throughout the world. This study has already shown at the beginning of this section that this trend continues even in South Africa.

For every program that is offered at the institution of higher education, there is a demand and a target audience for it. Entrepreneurship education is no exception and toward the end of the last decade authors identified three main sources of demand as governments, students and business-world (Alberti *et al.*, 2004:5). Timmons (1994:7) argues that government through entrepreneurship education aims at the development of entrepreneurial culture oriented to job creation. The study has already alluded to the

fact that most of the new jobs are created by the informal sector (which mainly represents entrepreneurial small businesses) as compared to large corporations.

The second source of demand identified is that of students. Students may want to enroll in entrepreneurship because they may have intentions of starting up their ventures or they may wish to acquire entrepreneurial skills which may come in handy in their careers in larger organizations. Lastly Alberti *et al.* (2004:5) mention that the business-world itself is a consumer of entrepreneurship, as this helps them to stay operational and being able to continuously develop new business initiatives. Lena and Wong (2003:341) fully agree with Alberti *et al.* (2004:5) by stating that entrepreneurship education provides a gateway for learning to entrepreneurs and serves as a preparatory function in relation to starting up a business.

Even though it has been mentioned that the South African government is making a great deal of resources available to support entrepreneurial activity, there seems to be no policy adopting entrepreneurship as a vehicle which can be used to strengthen GDP in the country. Reynolds, Bygrave and Autia (2003:98) raised concerns about the lack of centralised planning and coordination on a national basis to react in time to dynamic global changes. National leaders can encourage citizens to help the country adapt and adjust through entrepreneurial career choices, but they are not well-positioned to micromanage the details of the adaptation process (Reynolds *et al.*, 2003:98). Legislators could benefit from understanding that government initiatives will affect business formations only if there could be national policies directly in support of entrepreneurship in place and those initiatives positively influencing attitudes and thus influencing intentions (Krueger, Reilly & Carsrud, 2000:411). Entrepreneurship intentions are discussed in the succeeding section.

2.5 Entrepreneurship Intentions

Intention is what informs future behaviour or action, for instance a young person's parents often emphasise the importance of going to school in order to increase the chance of being employed. Another example will be the business itself; when a business owner

wants to expand an existing business they scan the environment and go through a lot of planning before the actual act. Turning to entrepreneurship does not come in the absence of threats and weaknesses; it is a way of emphasising opportunities over threats, focusing on one's strengths rather than weaknesses. This will include entrepreneurial activities out of opportunities or necessity.

Krueger *et al.* (2000:411) undertook a study which compared two intention-based models in terms of their ability to predict entrepreneurial intentions:

The first model is by Ajzen and is referred to as Ajzen's theory of planned behavior (TPB) and the second model is by Shapero and is Shapero's model of the entrepreneurial event (SEE).

Krueger *et al.* (2000:411) mention that Ajzen argued that intentions in general depend on perceptions of personal attractiveness, social norms and feasibility while Shapero's argument was that entrepreneurial intentions depend on perceptions of personal desirability, feasibility, and propensity to act. What Krueger *et al.* (2000:411) did was to employ a competing models approach, comparing regression analysis results for the two models. Their sample consisted of student subjects facing imminent career decisions. They in turn found that:

- (1) Intentions are the single best predictor of any planned behavior, including entrepreneurship.
- (2) Personal and situational variables typically have an indirect influence on entrepreneurship through influencing key attitudes and general motivation to act.
- (3) The versatility and robustness of intention models support the broader use of comprehensive, theory-driven, testable process models in entrepreneurship research.

Krueger *et al.* (2000:413) further argue that intentions serve as important mediating variables between the act of starting a business venture and potential exogenous influences. They present that intentions models offer an opportunity to increase the society's ability to explain and predict entrepreneurial activity. Strong intention to start a business should result in an eventual attempt, even if immediate circumstances such as mar-

riage, child bearing, finishing school, a lucrative or rewarding job, or earthquakes may dictate a long delay (Opoku-Antwi Amofah, Nyamaah-Koffuor & Yakubu, 2012:211).

Full understanding of the entrepreneurial process requires an examination of potential entrepreneurs (Urban, 2006:87). Urban (2006:87) gives a simplistic equation relating entrepreneurs to entrepreneurship (entrepreneurs cause entrepreneurship), i.e. $E = f(e)$, where entrepreneurship (E) is a function of entrepreneurs (e).

Urban (2006:94) argues an intention represents a future course of action to be taken; future actions do not just happen but they are a result of a proactive commitment to bringing them about. The author adds that intentions and actions are different factors in a functional relation separated in time. Urban (2006:94) makes the observation that the intentions centre on plans of actions. If intention is absent, action is unlikely. Intentions represent the belief that one will perform certain behaviour. Logically, intent precedes action. Next the study presents discussions on entrepreneurial activity.

2.6 An overview of Entrepreneurial Activity

For developed economies, entrepreneurial activity (new venture formation) is a means of revitalising stagnated economies and of coping with unemployment problems by providing new job opportunities (Gürol & Atsan, 2006:26). Gürol and Atsan (2006:26) further argue that entrepreneurial activity has a more critical role for economies of developing countries since entrepreneurship is seen as an engine of economic progress, job creation and social adjustment.

Although South Africa falls within the efficiency-driven category, GEM (2011) ranks it as a country capable enough to seize every opportunity. Actually, it is more than capable; the perceived opportunity compares 1:1.1 to perceived capability. However, there is a low intention rate in terms of people willing to engage in entrepreneurial activity as seen in Figure 2.2 on page 11. This might be as a result of the low levels of literacy in the country and the current state of education which does not inspire confidence to that effect.

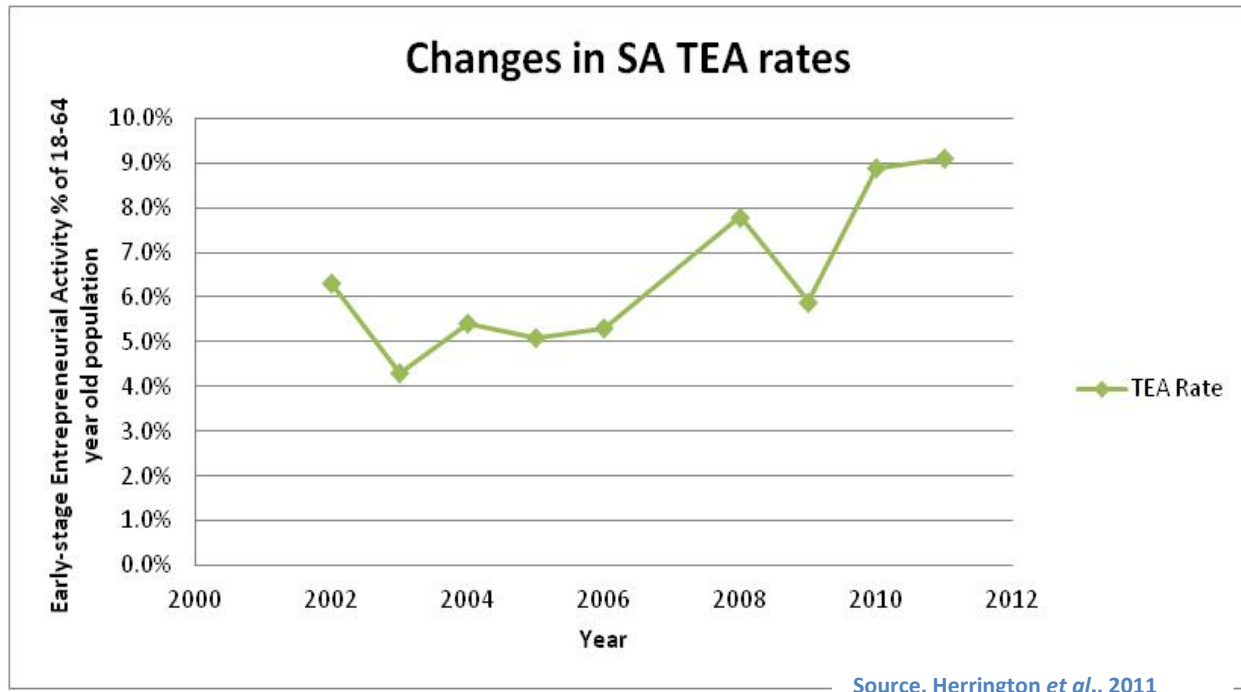
The other reason might be that there is still a higher opportunity cost when considering starting up a business. Those individuals, who have a better educational background and are skilled enough even though they can recognise an opportunity, might be put off by the thought of having to part with their well paying jobs to pursue a business idea that might not come to fruition (Herrington *et al.*, 2011:17).

This coupled with the slow transforming business support environment make it difficult for educated and skilled individuals to make a commitment toward entrepreneurship, leaving a high number of people who are less educated and often lacking relevant skills trying their luck in entrepreneurship, resulting in high failure rate of start-up businesses (Urban, 2006:87).

Since Total Early-stage Entrepreneurial Activity (TEA) index is used as a principal measure of entrepreneurial activity in a country (Herrington *et al.*, 2011:17), Figure 2.6 on page 23 shows the country's TEA rates over the period 2002 to 2011. The data on this figure is in agreement with the data in Figure 2.2 (page 11) on the introduction of this study; both of them show that there was a slight improvement in the entrepreneurial activity in the country.

This improvement can be ascribed to the FIFA Soccer World Cup in 2010, which boosted the country's economy, both in terms of the financial injection it provided, as well as the people who were prepared to cash in the opportunities that this major international event was bringing to the country's shores (Herrington *et al.*, 2011:16).

Figure 2.6: South Africa's TEA rates over periods 2002-2011



Even though there are numbers and statistics to show TEA in the country, South Africa lacks literature material showing the number of businesses started specifically by students during or after their studies. This makes it difficult to have on record the number of students who take entrepreneurship as a career option. That being the case, it becomes even difficult to know or understand the types of problems faced by students when starting a business. This paints a demoralising picture in as far as entrepreneurship is concerned; moreover, it undermines the potential that entrepreneurship has in contributing towards the regional economy.

Wu and Wu (2008:753) argue that the decision-making process of starting up a new business can be regarded as a reasoned behavior or planned behavior; this is strongly supported by Ajzen (1991:186) who advocates that the intentions to perform a behavior can be predicted with high accuracy from attitudes towards the behavior.

In their study Wu and Wu (2008:768) found that even though a positive attitude towards start-up is a good starting point to stimulate entrepreneurial behavior, it does not always result in entrepreneurial intention. However, the authors noted that those students who

love the idea of a start-up, are more likely to create a new venture. Wu and Wu (2008:768) believe that promoting the entrepreneurial intentions of the university students can effectively increase the possibility that the students will engage in entrepreneurship later. This can be achieved through introduction of relevant programmes aimed at promoting entrepreneurship, for instance in the Netherlands the entrepreneurial activism is very high. Universities such as University of Twente, Hanze University Groningen and Delft University have in place programmes that help students wishing to engage in entrepreneurship to achieve that, plus entrepreneurship is part of the curriculum meaning that students get credits by establishing their businesses. As mentioned in section 2.1, as part of this study an exploratory trip was taken to the Netherlands to explore and learn about entrepreneurship activities within the university setting, from 23 - 30 June 2012. Different interviews conducted at different places are discussed below.

2.7 Hanze University Groningen

At the Hanze University Groningen there are programmes such as Business Match and Da Vinci Manor. Business Match is a brain child of students and it is solely run by four students; it is situated within Hanze University Groningen. Business Match is on its seventh year of running, meaning that it has established itself and has a network. It is run on a rotation basis. Every year the committee recruits two new students who learn from their predecessors; in any given year there are four students consisting of two experienced and two new members of the committee.

Students run it through competitions that are organised twice a year, namely Business Class competition and First Class competition. The Business Class competition runs for 16 weeks. During the time of the competition the committee organises guest lecturers every week on different topics that are business related. In the business world networking is very important. So the committee uses its willing network to offer help where there is a need. They also make use of a young entrepreneur who talks to the students. Even though Business match and Minor Da Vinci are both attached to Hanze University Groningen, there is no clear collaboration between them.

Committee members are also taking advantage of the opportunities and network established during their stay in the committee, most of them go on and start their own businesses beyond Business Match. Once again this provides students with a platform to move from a business idea all the way to the establishment of a business.

Manor Da Vince is a programme aimed at giving students an opportunity to learn how to start a business in the most practical way while acquiring credits necessary for their degrees. The programme is part of the student's studies which is 20 weeks long. The students are thrown in real life experience because they organise their own appointments, they pitch their own ideas; in a nutshell, students conduct their businesses in a way they would in a real business setting. This is good because they can only learn by doing.

To further stimulate the students and to keep them motivated they make use of a local entrepreneur, who offers students his network. Networking is very important for students because they get to meet and talk to influential people who they would otherwise have to put appointment (which might be turned down) to see them. Sometime students get the opportunity of being involved in the practical business project.

2.8 Twente University in Enschede

Science Park adjacent to the Twente University in Enschede was established in 2005, this was established as a support towards sustainable economic growth in the region of Twente. There have been many initiatives before the science park since the collapse of the textile industry in the 1960s, which accounted for more than 40,000 employees at the time. Since the collapse there has been a need for new concepts to support sustainable economic growth. Hence the introduction of different initiatives throughout the years, the study will concentrate on the Science Park (or Kennispark, as it is known in the Netherlands).

Kennispark Twente prides itself as a perfect triple helix organisation because it is collaboration between the province, township and university (Etzkowitz, 2003:295). Kennispark Twente is one of the four leading innovation campuses in the Netherlands. It hous-

es about 330 high-tech companies. At this innovation campus business development support, talented employees, new business ideas, incubation and seed-funds are available. Beside these activities there is an attractive TOP arrangement (temporary entrepreneurial positions) for free which is a programme for starting entrepreneurs with innovative ideas and offered by the University of Twente (UT). This helps an entrepreneur bridge the first and usually difficult year of the enterprise, offering basic financing, support and advice. The arrangement is available to everyone who has a business idea. The service or product should match research activities of the university. After a year the entrepreneur's company needs to be self supporting.

The TOP arrangement offers the starter a full package of support, including basic financing, assistance in getting started and practical support in technical and business management areas. What distinguishes TOP is the link with a university discipline or faculty. The entrepreneur can stay in contact with scientists and technical staff, and can use university labs and equipment.

The specific benefits of a TOP-spot consist of an interest free loan of € 20,000, assistance in finding the appropriate discipline or faculty within the UT, business management assistance and practical support provided by an experienced entrepreneur and/or mentor, support in developing a business plan and technical assistance from experts. The use of UT network and contacts, possibilities of generating business through the UT and support and (interim) evaluation by the TOP commission are also included.

Beside the Kennispark Twente there is Venture Lab Twente (VentureLab), which is more focused on global scale, but would also like to be recognised as the big brother to the TOP programme. VentureLab targets entrepreneurs and business developers from all walks of life. They do not discriminate against any background, actually it says in their website:

“Backgrounds can vary in almost any aspect: vocation, age, or experience. You may have just graduated, be in-between jobs, or at a mid- or even end-career stage. Have a degree in technology, psychology or any other topic or have no

degree. Have worked in the agriculture sector, or in healthcare, R&D, finance, marketing. Have many years of entrepreneurial experience or none at all. Have a clear idea on your company, have started already or do not even have an idea yet. Participants in VentureLab are aware that to be successful they need to know themselves, their strengths and weaknesses, their passions and pitfalls. They are ambitious yet realise that successes are never the work of one person. When it comes to building a substantial business, they know “technology” is a prime driver for success.” (VentureLab, 2011)

2.9 University of Delft

Another university that is contributing towards entrepreneurship activism in the Netherlands is the University of Delft through YES!Delft, the ‘incubator’ for high-tech start-ups. YES!Delft stands for ‘Young Entrepreneurs Society Delft’ and was established in 2005 to help young technical entrepreneurs in all aspects of setting up their own technology business as successful as possible. YES!Delft also inspires and encourages students, young technicians and scientists to make informed choices about starting up their own business. YES!Delft comprises of four centers: growth center, incubation center, education center and inspiration center.

The high rate of entrepreneurial activism in the Netherlands agrees well with 83.4% of those who consider having chosen entrepreneurship as a good career choice. This might have been mostly influenced by deliberate interventions that the government has put in place to ensure that its citizens succeed when choosing to be entrepreneurial. This is well considered in literature as many of the previous studies maintain that entrepreneurs are cultivated during their lifetime, and especially social and cultural background, personal experience and education are very important to build entrepreneurship in peoples’ minds (Lee *et al.*, 2006:363).

That is why Kolvereid and Isaksen (2006:886) have included educational background in their analysis because they believe that it is a key demographic variable. However, the

impact of education on entrepreneurship perceptions and intentions still need to be researched upon (Collins, Hannon & Smith, 2004:456).

South Africa is a bit different because traditionally South African universities, technical colleges, technikons and teacher-training colleges have educated graduates for employment in the public and private sectors. The role of South African Institutions of Higher Education and Training (SAIHET) was less important in developing future entrepreneurs. With the rapid change of economy and the defeat of apartheid in South Africa, SAIHET have experienced considerable growth in the past 18 years, resulting in most universities merging. Further recognition of cultivating entrepreneurship as a function of university is evidenced by the growing number of debates and publications in professional journals (Wu & Wu, 2008:753).

Hence, it is important to understand the formation of entrepreneurial intention of South African university students and its linkage with different educational backgrounds. In general there is a need to better understand the South African students' entrepreneurial intentions and the factors affecting these intentions.

2.10 Why entrepreneurship education and training?

Entrepreneurship education (EE) has enjoyed a warm embrace from around the world with developed countries being prime-movers (Raichaudhuri, 2005:17). The study has presented evidence already indicating that entrepreneurship education continues to make its strides within institutions of higher education even in the country. This is mainly because of the potential that entrepreneurship has in creating new jobs and the importance of entrepreneurship education in producing potential entrepreneurs from the educational system (Kuratko, 2005:586). For example, Volery and Mueller (2006:13) have established that there is a significant relationship between entrepreneurial training and the propensity of becoming an entrepreneur.

To this end, universities and other institutions of higher learning in South Africa have already begun to play a leading role in inculcating students with the entrepreneurial knowledge and skills that will be useful in their future career endeavours (Nurmi & Paa-

sio, 2007:62; Wang & Wong, 2004:163). Entrepreneurship education has been recognised as one of the vital determinants that could influence students' career decisions (Peterman & Kennedy, 2003:131). Keat *et al.* (2011:207) advocate that this influence creates a need to examine how entrepreneurship education could influence university students' propensity to entrepreneurship. There is an overwhelming growth in research interest in the area of entrepreneurship education (see Wang & Wong, 2004:163; Wong & Lena, 2005:2); however, there was very little research done specifically investigating the relationship between entrepreneurship education and entrepreneurial inclination particularly on North-West University students.

It is the aim of this study therefore to contribute to the current body of knowledge by identifying the variables within entrepreneurship education that influence students' inclination towards entrepreneurship, specifically in North-West University settings. Taking the above statement into account, this paper primarily investigates the intentions of students from North-West University to consider entrepreneurship as a career choice. Particularly, this paper aims and attempts to investigate the relationship between entrepreneurship education and NWU students' inclination towards entrepreneurship. The following sub-section briefly discusses each attribute of entrepreneurship education that could have influenced university students' inclination towards entrepreneurship.

2.10.1 The university's role in promoting entrepreneurship

South African universities have taken the first step in offering entrepreneurship as part of their curriculum; Dhliwayo (2006:331) alludes that this plays a functional role in promoting entrepreneurship education to develop regional and society economies.

Nicolaidis (2011:1045) supports this by stating that the primary function of HE should be to seek to instill a greater entrepreneurial character among students. Wang and Wong (2004:163) recognise that due to the influence that education could have on the attitudes and aspirations of students, there is a need to understand how to develop and nurture potential entrepreneurs even while they are still learners at school. They further mention that few empirical studies have examined the entrepreneurial propensity of university students as a source of future entrepreneurs. Keat *et al.* (2011:208) urge univer-

sities to position themselves as hubs of entrepreneurship by making a substantial contribution in nurturing an entrepreneurial environment that combines factors that contribute to the development of entrepreneurship.

North-West University as a provider of entrepreneurship education and training programmes has begun to create an entrepreneurially supportive environment in a form of EDC that could encourage entrepreneurial activity among its students. This initiative in turn would help to develop an entrepreneurial culture among university students who will be entrepreneurs in future. This is important as it presents a positive image of entrepreneurship as career option to draw students' attention within the university environment by providing the resources and other facilities available to them.

Keat *et al.* (2011:208) advocate that it should always be remembered that even though individuals have the relevant entrepreneurial knowledge and skills, it is important to promote successful local ventures. It is of equal importance for society in general, and students in particular, to relate to and identify themselves with those entrepreneurs, according to Postigo and Tambrini (2002:24).

With the establishment of the EDC the North-West University hopes to create an entrepreneurial culture across campus, so that students may be able to seize the opportunity of creating businesses whilst still studying or after graduating.

2.10.2 The entrepreneurial curriculum and content

The step of exposing its students to entrepreneurship and providing an environment conducive enough for these students to develop as entrepreneurs seem like a key factor for a university to develop and foster entrepreneurialism. However, due to its multidisciplinary nature, perhaps the pedagogical issue of entrepreneurship is always unfinished discussion (Cooper, Bottomley & Gordon, 2004:13). To Raichaudhuri (2005:3) it appears to be an unfinished debate with little uniformity concerning how, who and what to teach entrepreneurship with regard to its contextual and conceptual understandings,

despite entrepreneurship education having increasingly gained the attention from academia.

This happens largely due to the four possible viewpoints held by different people when developing the entrepreneurship programmes: from the educators viewpoints; the student-entrepreneurs; those who design the programmes and the evaluators (Bécharde & Toulouse, 1998:318). Edwards and Muir (2005:615) also express the same viewpoint that entrepreneurial curriculum develops differently across universities, either as an optional module within business courses or a specific course on entrepreneurship.

Cooper *et al.* (2004:13) sound a cautionary concern about entrepreneurship programmes at institutions of HE. The authors specifically argue after their observation that when entrepreneurship is offered as a core or elective subject, it is often delivered in an 'about' entrepreneurship as opposed to a 'for' entrepreneurship mode.

When an 'about' approach is taken, the focus is on information-giving and teaching concentrates on the economic contribution of entrepreneurship and aspects of government policy. They warn that this will not prepare students enough for the world of work and will render them more employable. When a 'for' entrepreneurship approach is employed, the emphasis is on developing practical skills. They advocate that the aim should be about creating an environment where students from all academic disciplines and years of study can experience a 'see, touch and feel' entrepreneurship. Keat *et al.* (2011:208) conclude that the decisions on teaching methodologies in entrepreneurship courses are therefore influenced by the aim of the educational objective.

Cooper *et al.* (2004:13) remark that interest from the business community is founded in its desire to see universities develop graduates who understand the SME environment and have skills and attitudes that will enable them to move seamlessly into the SME workplace and thus generate value for the business from an early stage.

This is due to the fact that small firms lack the training budgets of their larger counterparts and need new employees who can settle rapidly into their jobs (Cooper *et al.*,

2004:13). In many markets where technological sophistication is increasing, some small business owners recognise the need to employ graduates with specialist skills. On the other hand, some graduates have yet to identify the full benefits of joining an SME, so education has a valuable role to play in opening their eyes.

Keat *et al.* (2011:208) point out that many academics in entrepreneurship advocate for different methods of delivery of entrepreneurship knowledge and skills to students. These methods include among others conventional approach such as textbooks, examinations to unconventional like business plan, life histories of working entrepreneurs, guest lecturers and field study or visiting to business organisations (Keat *et al.*, 2011:68). They argue that the ultimate aim of entrepreneurial programmes should be to stimulate entrepreneurship awareness among students that, in turn, would increase their interest in entrepreneurship.

2.10.3 Role models

Unfortunately as most people believe by seeing, things seen or experienced through physical interaction remain part of them for some time and might influence their perceptions about that particular subject. There is a saying that goes like “one never gets a second chance to make the first impression”. When it come to entrepreneurship the same can be said. Pioneers are the ones who influence aspirants to engage in entrepreneurship or not (Van Auken, Stephens, Fry & Silva, 2006:326). Hence there is a wide coverage on the effect of role models on inclination towards entrepreneurship (see Cooper *et al.*, 2004:12; Deakins *et al.*, 2005:252; Van Auken *et al.*, 2006:325; Kirkwood, 2007:50).

A method adopted by Cooper *et al.* (2004) at Hunter Centre for Entrepreneurship in undergraduate and postgraduate programmes aims at creating an environment where students from all academic disciplines and years of study can experience ‘see, touch and feel’ entrepreneurship. In that environment individual students work full-time for eight weeks on a business development project with an entrepreneur, this further puts

an aspirant entrepreneur in a position to gain firsthand experience regarding entrepreneurship, whether good or bad.

Peterman and Kennedy (2003:141) as well as Wong and Lena (2005:19) have undertaken studies on the influence that the role of educators and friends of university students have on students' intention towards entrepreneurship. Both their studies have revealed that respondents with prior entrepreneurial experience or interaction showed a higher intention to start a business.

Boyle (2007:12) states the well known fact that the role of the teachers in education in general cannot be overemphasised as they 'prepare, encourage and cultivate students'. Hytti and O'Gorman (2004:19) emphasise the training of entrepreneurship educators as a critical element to the development of effective entrepreneurship education initiatives. Keat *et al.* (2011:208) agree with their assertion in that educators are often given the responsibility to mould the personality and characters of students, apart from imparting knowledge in the class. Keat *et al.* (2011:208) also found that friends, on the other hand, are influential on an individual's inclination towards entrepreneurship. This is because the majority of students who attend university and reside at the university dormitories has spent an extended time away from home; they learn different behaviors from their friends and these behaviors often influence their future intentions or actions. So if these students hang around entrepreneurial friends they learn how their friends tried to make it as entrepreneurs and if they succeed, they will have respect for them and will try to emulate them (Fayolle *et al.*, 2006:703).

2.10.4 The entrepreneurial internship programmes

Cooper *et al.* (2004:11) mention that their students at Hunter Centre for Entrepreneurship work full-time for eight weeks on a business development project with an entrepreneur. This is in line with Manor Da Vince programme at Hanze University Groningen; the programme aims at giving the students an opportunity to learn how to start a business in the most practical way while acquiring credits necessary for their degrees.

The programme is part of the students' studies which is 20 weeks long; they spend one day a week out in the "field". They are supposed to organise their own appointments, they pitch their own ideas; in a nutshell students conduct their businesses in a way they would in a real business setting. This is good because they can only learn by doing. Cooper *et al.* (2004:15) see this as a way to enable students to gain hands-on experience by seeing, touching and feeling about the business world. They have also found that acquiring applicable entrepreneurial experience does have a positive relation with an individual's intention and readiness in pursuit of business opportunities because of their early exposure to business environments. This earthworm approach i.e. exposing aspiring entrepreneurs to business environment by means of internship programmes helps them gain practical experience because they learn to deal with real life situations. Many researchers advocate for complete integration of internship programmes in the entrepreneurial curriculum (Keat *et al.*, 2011:208). They see it as an initiative that will have a great impact on more university students to have higher interest in entrepreneurship.

2.10.5 The demographic characteristics and family business background

Dunn (2004:9), Smith (2005:348), Veciana, Aponte and Urbano (2005:171), Van Auken *et al.* (2006:327) and Kirkwood (2007:39) all indicate research done suggests that there is an influence of demographic and family background on an individual's inclination towards entrepreneurship. The common premise is that a good influence brought by family as well as personal experiences about entrepreneurship would contribute to higher entrepreneurial inclination (Van Auken *et al.*, 2006:326; Kirkwood, 2007:39).

Chapter 3 Research methodology

3.1 Introduction

To address the objectives of this study, data was gathered from a self-administered questionnaire conducted among university students from North-West University's Vanderbijlpark and Potchefstroom campuses. The unit of analysis comprised of the students whose curriculum includes entrepreneurship and those who do not study any entrepreneurship related courses. The sample comprised of 200 students out of a 3479 BCom (second and third year) student population of NWU across the two campuses. The sample was on the basis of non-probability. There was a response rate of 98% (i.e. 196 of the 200 questionnaires were correctly filled-in and usable).

Prior to conducting the main study, a pilot test was conducted to improve the reliability and validity of the questionnaire. Fifty two Vanderbijlpark version of questionnaires were randomly distributed to target respondents with the help of respective lecturers in lecture halls as well as to students in their computer laboratories. The participation in this study was on voluntary basis and the respondents were given approximately thirty minutes to complete the questionnaires. After the screening, 51 of the questionnaires were fully completed and usable, yielding a response rate of 98 per cent. SPSS version 20.0 was used to analyse the data. The reliability statistics from the pilot study is given in the Table 3.1 below.

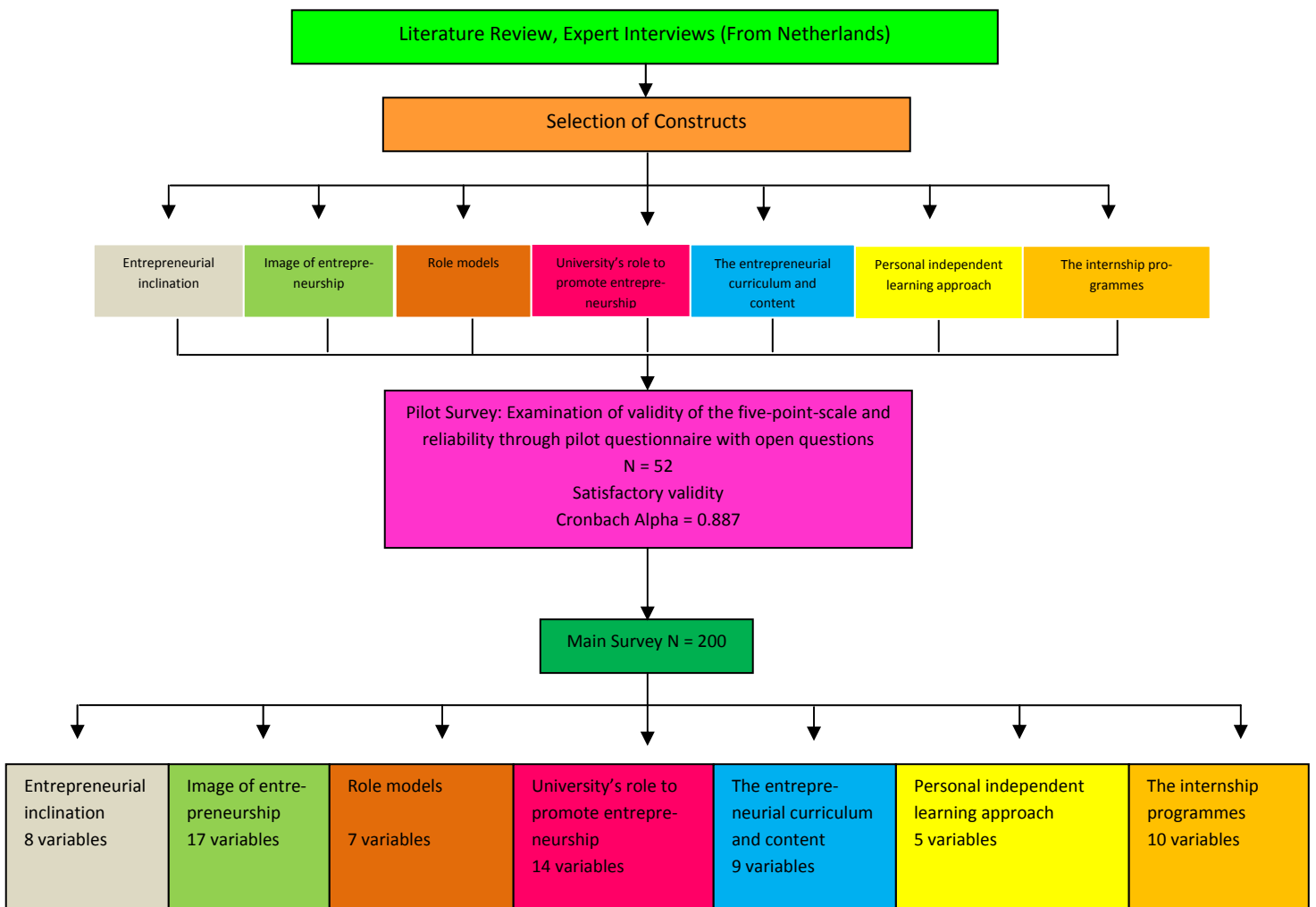
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Table 3.1: Reliability statistics from pilot study

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
0.887	0.896	70

The questionnaire was adapted from various sources and used as a means of data collection. It had five pages that consisted of eight parts: demographic and family background, future career planning and entrepreneurial inclination, image of entrepreneur-

ship, role models, university's role in promoting entrepreneurship, the entrepreneurial curriculum and content, personal dependent learning approach and the entrepreneurial internship programmes. The operationalisation of the model is shown in Figure 3.1 below. The scale used in the questionnaire was based on a 5-point Likert scale (with 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) for each close-ended question.

Figure 3.1: Operationalisation of the model



It must be acknowledged that the administration of questionnaires may result in superficial understanding of EI. Due to its nature of predetermination the questionnaires may direct the respondents to answer in a certain way and not express their true feeling

about the subject. However, in support of this proposed measure, similar research advocates the use of such same items to measure intentions (Fayolle *et al.*, 2005:706).

Previous research (Ajzen, 1991:192; Krueger *et al.*, 2000:426; Urban, 2006:87; Keat *et al.*, 2011:206) had verified the reliability and validity of the instrument that was being used. Factor analysis was employed to test the properties of this measure in this North-West University sample. The responses from the participants in the study were subjected to Principal Component Analysis, which allowed inter-correlations between the factors to be revealed. Simple descriptive analysis was conducted to interpret the level of scores obtained from the respondents on entrepreneurial intentions.

3.2 Sampling

The term population and universe are 'constructed' entities within the context of a specific research project (Mouton, 2002:135). Once the target population has been defined it must be made operational through the construction of the sampling frame. The frame selection process for this study can be viewed as a trade-off between practical considerations on the one hand and the demands of randomisation and generalisability on the other. Sometimes the case for representativeness of judgmental sampling, as used in this study, may be strengthened by the explicit comparison of sample characteristics with those of defined population (Tailor, 2008:39).

Under such circumstances, the most feasible course of action was to describe sample characteristics in detail, with reference to those factors that might impact the results of their interpretation. The unit of analysis comprised of the students whose curriculum included entrepreneurship and those who did not study any entrepreneurship related courses. These were undergraduate students in their second and/or third year depending on when entrepreneurship was prescribed for their curriculum.

Respondents were required to provide specific demographic data. The socio-demographic questions all measured along Likert-type scales and expressed as percen-

tages were respondents' gender, race group, age group, place of origin, programmes of study, academic year of study, work experience and family environment.

3.3 Analysis and results

Research findings are presented in five parts. In the first sub-subsection the study explores respondents' profile. Secondly, an analysis of all the constructs is presented. Thirdly the descriptive statistics is given. Then, the multiple regression is carried out and lastly a mathematical model is constructed.

3.3.1 The respondents' profiles

The final sample consisted of 200 post-graduate students, 196 of the questionnaires were fully completed and usable, this yielded a response rate of 98 per cent. The respondents were almost balanced across gender, with 48 per cent (n=94) male and 52 per cent (n=102) female. This is indicated in Figure 3.2 below.

Figure 3.2: Percentage Frequency for Gender

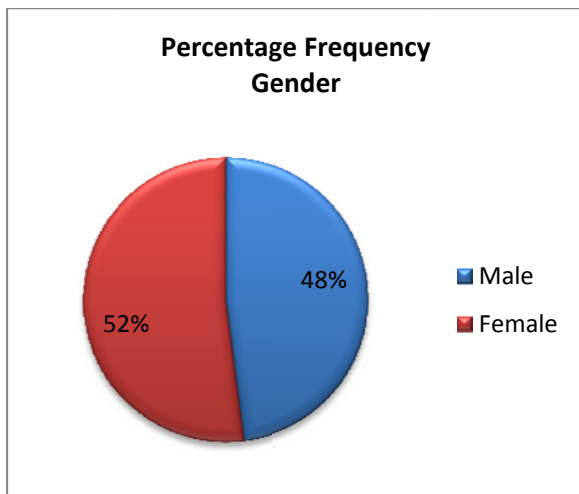
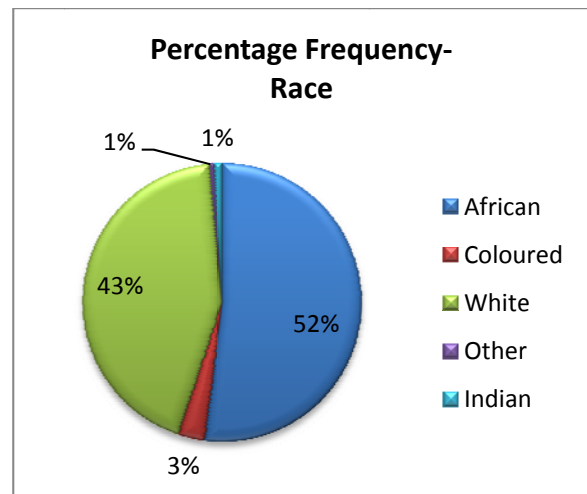


Figure 3.3: Percentage Frequency for Race



In terms of race, the majority were Africans with 52 per cent (n=102), followed by whites 43.4 per cent (n=85), coloureds 3.1 per cent (n=6) and Indians 1.0 per cent (n=2) of the total respondents. This scenario is understandable as African students are in the majori-

ty at Vaal Triangle Campus of NWU and white students are in the majority at Potchefstroom campus and is shown in Figure 3.3 on page 38.

Figure 3.4: Percentage Frequency for Age

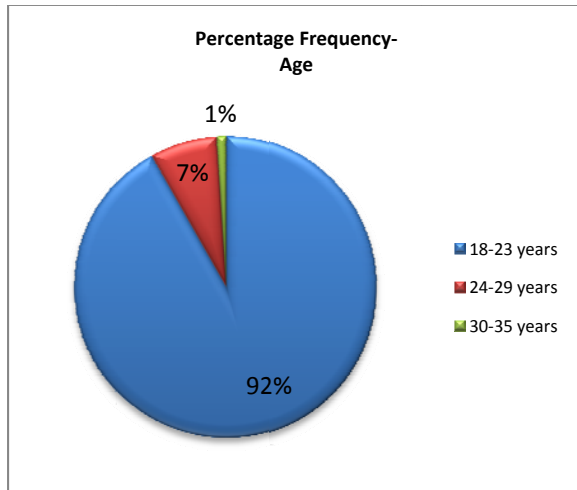
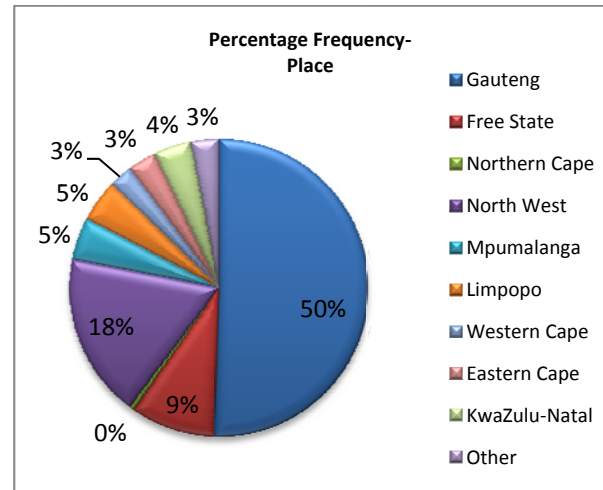


Figure 3.5: Percentage Frequency for Place



As all the respondents were studying at the undergraduate level, 91.8 per cent (n=180) of them were aged between 18 and 23 years old, whilst 7.1 per cent or 14 respondents' age was between 24 and 29; 2 exceptional cases (1 per cent) were recorded, in which respondents were aged between 30 and 35. The frequency of responses is indicated in Figure 3.4 above.

The majority of respondents was originally from within the country; 50.5 per cent (n=99) of the respondents were from Gauteng, followed by North-West province with 17.9 per cent (n=35) respondents. Four respondents or 9.2 per cent indicated that they were from Free State province, whereas Limpopo and Mpumalanga both had 4.6 per cent (n=9) of the respondents, which was followed by 4.1 per cent (n=8) from KwaZulu-Natal province and only 3.1 per cent (n=6) of the respondents were from Eastern Cape and outside the country. A further 2.6 per cent (n=5) indicated that they were from Western Cape. This is illustrated in Figure 3.5 above.

With regard to the programme of study, which asked whether a respondent had studied entrepreneurship or not, 76 per cent (n=149) of the respondents indicated that they had

not enrolled for entrepreneurship, while only 24 per cent (n=47) were entrepreneurship students. This is shown in Figure 3.6 below.

Figure 3.6: Percentage Frequency for Programme

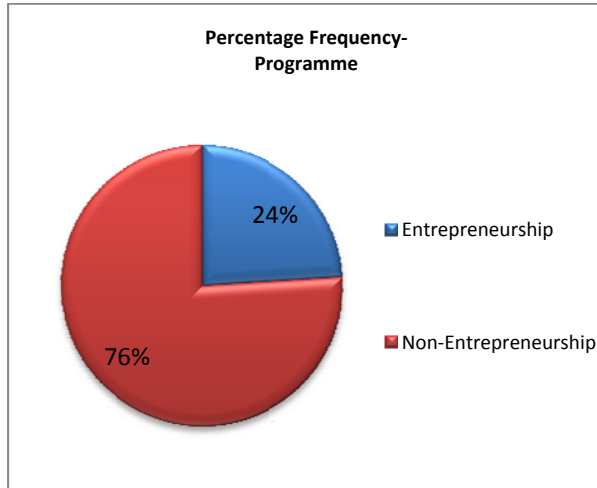
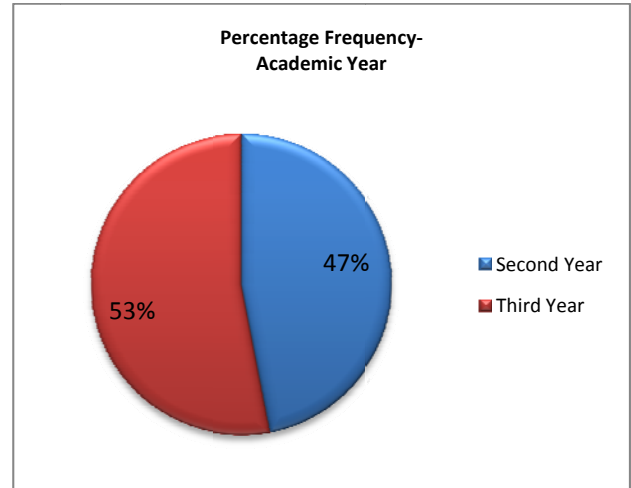


Figure 3.7: Percentage Frequency for Academic Year of Study



The proportion of the respondents' academic year of study is indicated in Figure 3.7 above, namely, 46.9 per cent or 92 respondents were second year students and 53.1 per cent or 104 respondents were students in their third year.

Figure 3.8: Percentage Frequency for Work Experience

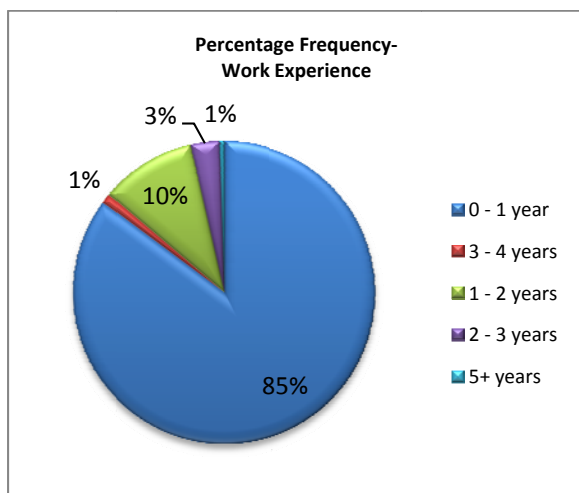
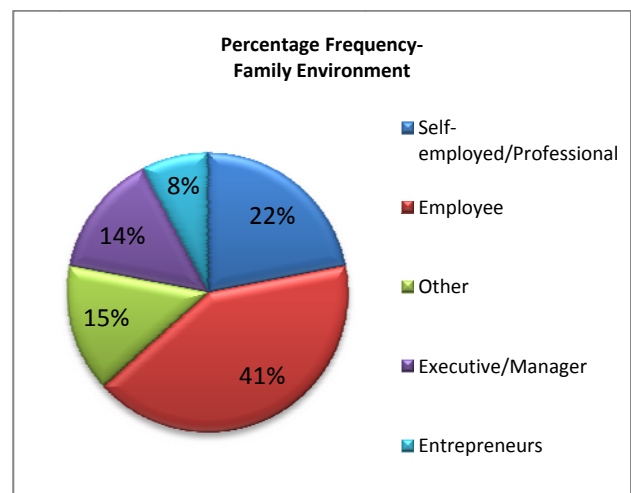


Figure 3.9: Percentage Frequency for Family Environment



When it comes to the respondents' work experience, 167 of them (85.2 per cent) have had up to one year's working experience, 20 of them (10.2 per cent) had up to 2 years

experience and 6 of the respondents (3.1 per cent) had up to 3 years experience, followed by 2 (1 per cent) of them having up to 4 years experience; only 1 respondent or (0.5 per cent) had more than five years experience. This is indicated in Figure 3.8 on page 40.

Pertaining to the respondents' family working status, Figure 3.9 on the previous page demonstrates that 43.1 per cent (n=81) of the respondents' parents have been working as employed workers, self-employed / professional was ranked in the second highest by the respondents (21.9 per cent; n=43), followed by 'other' which accounted for 29 respondents or 14.8 per cent, 'other' might include parents as retired or as passed away; 28 (or 14.3) respondents' parents were managers/executives. Lastly, 15 or 7.7 per cent of the respondents' parent(s) were entrepreneurs.

3.3.2 Factor Analysis

Factor analysis, using principal component analysis and the varimax with Kaiser normalisation, produced satisfactory results. Factor loadings greater or equal to 0.30 are generally regarded as significant, and factors with eigen values greater than 1 (based on scree tests and Kaiser's stopping rule) are used to decide the optimal number of factors to retain (Osborne & Costello, 2009:134).

The Cronbach's alpha for each individual factor was calculated, using only those variables chosen for their loading in the sorted rotated factor-loading matrix. For each factor, only those variables with a positive rotated factor loading on that factor and a zero loading on all other constructs, were selected. Table 3.2 (page 43) summarises the results of the variables with the different factor loadings. Figure 3.1 (page 36) outlines the number of variables each factor had at the beginning, and Table 3.2 (page 43) accounts only for those variables used to calculate the Cronbach's alpha.

Each individual construct was measured as follows:

- **Entrepreneurial inclination** was measured with eight questions, including two reverse-scored questions. A principal component analysis and the varimax rotation suggested two-factor solution one question was omitted due to the loading less than 0.3. Most items were loaded under Factor 5 which represents the entrepreneurial curriculum and content, these items best define Factor 5.
- **Image of entrepreneurship** was measured with seventeen questions; the results suggested that two-factor solution was appropriate with one question excluded due to the loading less than 0.3. The items under this construct were loaded under Factor 1 which represents entrepreneurial inclination. These items best define Factor 1.
- For **role models**, seven questions were used to measure the role models. All the seven questions were not reduced into separate underlying variables; however, the results suggested that two-factor (that is, there were items under Factor 3 and Factor 6) solution was appropriate, and most of the items were loaded under Factor 6 representing personal independent learning approach. The items best define Factor 6.
- Meanwhile, fourteen items were used in measuring the **university's role to promote entrepreneurship**; the results suggested that four-factor (that is, there were items under Factors 3, 4, 5 and 6) solution was appropriate with one question's loading less than 0.3. Most of the items were loaded under Factor 3 which represents role models, these are the items which best define Factor 3.
- To measure the **entrepreneurial curriculum and content**, nine questions were used and were all included and loaded under Factor 2 which represents the image of entrepreneurship. These items define the entrepreneurial curriculum and content (Factor 2).

- **Approach** was measured using five questions and the results suggested that two-factor solution was appropriate. It was defined by items loaded under Factor 6 which represents itself.
- Finally, for the **entrepreneurial internship programmes**, ten items were used with one reverse-scored question. No question was extracted; however, the results suggested that a three-factor solution was appropriate. The items under this construct were loaded under Factor 4 which represents the university's role in promoting entrepreneurship. These items best define Factor 4. Table 3.3 on page 45, summarises the constructs' eigen values, percentages of variance explained and Cronbach's Alphas.

Table 3.2: Factor categorisation for key variables

Variables	Factor Loading
Inclination	
1. I seriously considered entrepreneurship as a highly desirable career option.	0.682
2. I have plans for opening a new venture.	0.764
3. I plan to start my own venture after graduating	0.692
4. I plan to start my own venture after working for a few years	0.601
5. I would easily pursue a career involving self-employment.	0.561
Image	
1. Entrepreneurship is about job creation	0.513
2. Entrepreneurship is an honourable profession and I respect people who are entrepreneurs.	0.616
3. Admire those who succeed in running their own business.	0.572
4. Entrepreneurs are dynamic individuals	0.713
5. Entrepreneurs invest money	0.627
6. Entrepreneurs talk to their employees	0.562
7. Entrepreneurs contribute to the economic development of the country	0.605
8. Entrepreneurs are capable of assuming risk and tolerate it.	0.570
9. Entrepreneurs are well trained professionals	0.582
10. Entrepreneurs know about organizations	0.580
11. Entrepreneurs are highly motivated individuals	0.597
12. Entrepreneurs are innovators	0.613
13. Entrepreneurs have financial and management skills	0.594
14. Entrepreneurs earn a lot of money	0.347
15. Entrepreneurs have a good entrepreneurial vision	0.465

Role Models

1. I care about what my closest friends think regarding my employment decision.	0.405
2. I believe that closest friends think I should become self-employed.	0.355
3. I am interested in business because my friends are in business.	0.716
4. I am interested in business because my parent(s) is(are) in business.	0.538
4. My friends are main source of business-related information.	0.636
5. My lecturers are main source of business-related information.	0.390

University

1. University is an ideal place to learn about starting a business.	0.510
2. Entrepreneurial or business related examples are included in classroom teaching.	0.437
3. Students are encouraged to pursue entrepreneurship ventures in the university.	0.565
4. I get to meet lots of people with good ideas for new businesses.	0.363
5. Students are actively encouraged to pursue their own business ideas.	0.612
6. My university course prepares students well for entrepreneurial careers.	0.511
7. University has infrastructure in place to support the start-up of new businesses.	0.526
8. A creative university environment inspires me to develop ideas for new business.	0.431
9. The university provides resources to assist student entrepreneurs.	0.504

Curriculum

1. The instructors are experienced and competent course presenters.	0.474
2. As a result of taking this course, I have better understanding about business.	0.568
3. The instructor did a good job of making this course relevant to the real world.	0.683
4. The course developed entrepreneurial knowledge and skills.	0.661
5. The instructor did stimulate interest in entrepreneurship through the course(s).	0.626
6. My interest towards entrepreneurship has been raised after taking the course(s).	0.553
7. The course(s) provided a new and different experience.	0.761
8. The course(s) taught to deal with ambiguity in the real world.	0.684
9. The course(s) provided an opportunity to learn by doing.	0.743

Approach

1. I do not enjoy course(s) that require a student to deal with ambiguity.	0.537
2. The course(s) exposed to situations with uncertain outcomes.	0.498
3. I do not enjoy courses that require a student to learn by doing.	0.555

Internship

1. I feel confident about tackling unfamiliar work-based problems.	0.469
2. Internship programmes help to develop the ability to plan and organise my day-to-day work.	0.642
3. Internship programmes help to develop my job-related skills.	0.713
4. Internship programmes provide me with a lot of new business ideas.	0.640
5. Internship programmes help to develop my problem-solving skills.	0.653
6. Internship programmes had lots of real business experiences that are not found in the classroom.	0.747
7. Internship programmes develop my communication skills.	0.722

Table 3.3: Constructs with eigen values, variance explained and Cronbach's alphas

Construct	Eigen Value	% of Variance	Cronbach's Alpha
Inclination	11.887	8.576	0.613
Image	4.553	7.735	0.877
Role Models	4.208	6.698	0.762
University	2.780	6.085	0.738
Curriculum	2.593	5.581	0.886
Approach	2.346	5.494	0.602
Internship	1.969	3.169	0.728

3.3.3 Statistical results

Table 3.4 to Table 3.10 represent the mean scores and standard deviation for the exploratory variables pertaining to the factors. A brief explanation follows.

Table 3.4: Descriptive statistics - constructs by gender

Construct	Gender	N	Mean	Std. Deviation	Std. Error
Inclination	Male	94	3.5970	0.52820	0.05450
	Female	102	3.5130	0.58200	0.05760
	Total	196	3.5540	0.55700	0.03980
Image	Male	94	3.9330	0.43309	0.04467
	Female	102	4.1067	0.47253	0.04679
	Total	196	4.0234	0.46116	0.03294
Role Models	Male	94	2.7629	0.75289	0.07765
	Female	102	2.7031	0.74426	0.07369
	Total	196	2.7318	0.74709	0.05336
University	Male	94	3.3169	0.49360	0.05091
	Female	102	3.2990	0.50913	0.05041
	Total	196	3.3076	0.50054	0.03575
Curriculum	Male	94	3.5981	0.59112	0.06097
	Female	102	3.5131	0.70517	0.06982
	Total	196	3.5539	0.65270	0.04662
Approach	Male	94	3.0260	0.60200	0.06210
	Female	102	3.1000	0.62660	0.06200
	Total	196	3.0640	0.61450	0.04390
Internship	Male	94	3.7910	0.44910	0.04630
	Female	102	3.7550	0.45940	0.04550
	Total	196	3.7720	0.45370	0.03240

Table 3.4 on page 45 represents the relatively stable mean scores and deviations for the demographic variables pertaining to gender, with the exception of role models, which has a mean score less than three for both the male and the female students. The reason might be that questions that represented the role model were not inclusive of the widely held perceptions about entrepreneurship role models. Actually all the tables that will follow show relatively stable mean scores and deviations for the demographic variables pertaining to respectively race, age, place of origin, programme of study, academic year of study, work experience and family environment. For each of the variables role model has a mean score less than three. These results are very important as they show the central tendency of the responses.

Table 3.5: Descriptive statistics - constructs by race

Construct	Race	N	Mean	Std. Deviation	Std. Error
Inclination	African	102	3.612	0.5612	0.0556
	Coloured	6	3.563	0.7695	0.3142
	Indian	2	3.688	0.0884	0.0625
	White	85	3.49	0.5384	0.0584
	Other	1	2.75	.	.
	Total	196	3.554	0.557	0.0398
Image	African	102	4.0479	0.48519	0.04804
	Coloured	6	4.1176	0.49775	0.2032
	Indian	2	4.1471	0.12478	0.08824
	White	85	3.991	0.43507	0.04719
	Other	1	3.4706	.	.
	Total	196	4.0234	0.46116	0.03294
Role Models	African	102	2.6064	0.71257	0.07055
	Coloured	6	2.4524	0.62215	0.25399
	Indian	2	3.0714	0.50508	0.35714
	White	85	2.9059	0.76727	0.08322
	Other	1	1.7143	.	.
	Total	196	2.7318	0.74709	0.05336
University	African	102	3.3522	0.52837	0.05232
	Coloured	6	3.4881	0.19387	0.07915
	Indian	2	3.0714	0.60609	0.42857
	White	85	3.2538	0.47553	0.05158
	Other	1	2.7143	.	.
	Total	196	3.3076	0.50054	0.03575

Curriculum	African	102	3.5675	0.71204	0.0705
	Coloured	6	3.7037	0.36963	0.1509
	Indian	2	3.1667	0.39284	0.27778
	White	85	3.5425	0.60017	0.0651
	Other	1	3	.	.
	Total	196	3.5539	0.6527	0.04662
Approach	African	102	3.094	0.6404	0.0634
	Coloured	6	2.4	0.5657	0.2309
	Indian	2	2.7	0.7071	0.5
	White	85	3.094	0.5594	0.0607
	Other	1	2.2	.	.
	Total	196	3.064	0.6145	0.0439
Internship	African	102	3.764	0.4947	0.049
	Coloured	6	3.7	0.405	0.1653
	Indian	2	3.4	0.1414	0.1
	White	85	3.798	0.4111	0.0446
	Other	1	3.7	.	.
	Total	196	3.772	0.4537	0.0324

Table 3.6: Descriptive statistics - constructs by age

Construct	Age	N	Mean	Std. Deviation
Inclination	18-23	180	3.557	0.54310
	24-29	14	3.473	0.74870
	30-35	2	3.813	0.44190
	Total	196	3.554	0.55700
Image	18-23	180	4.024	0.46595
	24-29	14	4.038	0.41377
	30-35	2	3.882	0.58232
	Total	196	4.023	0.46116
Role Models	18-23	180	2.746	0.74232
	24-29	14	2.633	0.84555
	30-35	2	2.143	0.20203
	Total	196	2.732	0.74709
University	18-23	180	3.333	0.50368
	24-29	14	3.056	0.36869
	30-35	2	2.821	0.45457
	Total	196	3.308	0.50054
Curriculum	18-23	180	3.586	0.65433
	24-29	14	3.294	0.44574
	30-35	2	2.5	0.70711
	Total	196	3.554	0.65270
Approach	18-23	180	3.081	0.61810
	24-29	14	2.886	0.57490
	30-35	2	2.8	0.56570

	Total	196	3.064	0.61450
Internship	18-23	180	3.788	0.43760
	24-29	14	3.6	0.59610
	30-35	2	3.6	0.84850
	Total	196	3.772	0.45370

Table 3.7: Descriptive statistics – constructs by programme

Construct	Programme	N	Mean	Std. Deviation	Std. Error
Inclination	Entrepreneurship-Student	47	3.787	0.5047	0.0736
	Non-Entrepreneurship-Student	149	3.48	0.5539	0.0454
	Total	196	3.554	0.557	0.0398
Image	Entrepreneurship-Student	47	4.23	0.50256	0.07331
	Non-Entrepreneurship-Student	149	3.958	0.42875	0.03512
	Total	196	4.023	0.46116	0.03294
Role Models	Entrepreneurship-Student	47	2.796	0.86114	0.12561
	Non-Entrepreneurship-Student	149	2.711	0.70934	0.05811
	Total	196	2.732	0.74709	0.05336
University	Entrepreneurship-Student	47	3.488	0.49673	0.07246
	Non-Entrepreneurship-Student	149	3.251	0.48973	0.04012
	Total	196	3.308	0.50054	0.03575
Curriculum	Entrepreneurship-Student	47	3.853	0.61738	0.09005
	Non-Entrepreneurship-Student	149	3.459	0.63667	0.05216
	Total	196	3.554	0.6527	0.04662
Approach	Entrepreneurship-Student	47	3.115	0.8296	0.121
	Non-Entrepreneurship-Student	149	3.048	0.5315	0.0435
	Total	196	3.064	0.6145	0.0439
Internship	Entrepreneurship-Student	47	3.862	0.4019	0.0586
	Non-Entrepreneurship-Student	149	3.744	0.4665	0.0382
	Total	196	3.772	0.4537	0.0324

Table 3.8: Descriptive statistics – constructs by year

Construct	Year	N	Mean	Std. Deviation	Std. Error
Inclination	2nd Year	92	3.649	0.4833	0.0504
	3rd Year	104	3.469	0.6046	0.0593
	Total	196	3.554	0.557	0.0398
Image	2nd Year	92	4.056	0.41088	0.04284
	3rd Year	104	3.994	0.50165	0.04919
	Total	196	4.023	0.46116	0.03294
Role Models	2nd Year	92	2.75	0.72151	0.07522
	3rd Year	104	2.716	0.77214	0.07571
	Total	196	2.732	0.74709	0.05336
University	2nd Year	92	3.394	0.44254	0.04614
	3rd Year	104	3.231	0.53722	0.05268
	Total	196	3.308	0.50054	0.03575
Curriculum	2nd Year	92	3.641	0.58681	0.06118
	3rd Year	104	3.477	0.6996	0.0686
	Total	196	3.554	0.6527	0.04662
Approach	2nd Year	92	3.07	0.5768	0.0601
	3rd Year	104	3.06	0.6488	0.0636
	Total	196	3.064	0.6145	0.0439
Internship	2nd Year	92	3.738	0.4221	0.044
	3rd Year	104	3.803	0.4798	0.047
	Total	196	3.772	0.4537	0.0324

Table 3.9: Descriptive statistics – constructs by work experience

Construct	Work Experience	N	Mean	Std. Deviation	Std. Error
Inclination	Up to 1 year	167	3.5570	0.55030	0.04260
	Up to 2 years	20	3.5060	0.69590	0.15560
	Up to 3 years	6	3.7500	0.23720	0.09680
	Up to 4 years	2	3.1880	0.44190	0.31250
	5 years +	1	3.5000	.	.
	Total	196	3.5540	0.55700	0.03980
Image	Up to 1 year	167	4.0254	0.47070	0.03642
	Up to 2 years	20	4.0176	0.44517	0.09954
	Up to 3 years	6	4.1765	0.18602	0.07594

	Up to 4 years	2	3.7353	0.37435	0.26471
	5 years +	1	3.4706	.	.
	Total	196	4.0234	0.46116	0.03294
Role Mod-els	Up to 1 year	167	2.7280	0.76212	0.05897
	Up to 2 years	20	2.7714	0.74936	0.16756
	Up to 3 years	6	2.6905	0.51442	0.21001
	Up to 4 years	2	3.0000	0.20203	0.14286
	5 years +	1	2.2857	.	.
	Total	196	2.7318	0.74709	0.05336
	University	Up to 1 year	167	3.3229	0.49907
Up to 2 years		20	3.2857	0.45766	0.10234
Up to 3 years		6	3.2857	0.59590	0.24328
Up to 4 years		2	2.3929	0.05051	0.03571
5 years +		1	3.1429	.	.
Total		196	3.3076	0.50054	0.03575
Curriculum	Up to 1 year	167	3.5722	0.66707	0.05162
	Up to 2 years	20	3.5778	0.49769	0.11129
	Up to 3 years	6	3.1852	0.73591	0.30043
	Up to 4 years	2	3.1667	0.54997	0.38889
	5 years +	1	3.0000	.	.
	Total	196	3.5539	0.65270	0.04662
Approach	Up to 1 year	167	3.0740	0.61170	0.04730
	Up to 2 years	20	2.9700	0.64650	0.14460
	Up to 3 years	6	2.9670	0.77370	0.31590
	Up to 4 years	2	3.4000	0.28280	0.20000
	5 years +	1	3.2000	.	.
	Total	196	3.0640	0.61450	0.04390
Internship	Up to 1 year	167	3.7690	0.46240	0.03580
	Up to 2 years	20	3.8600	0.38310	0.08570
	Up to 3 years	6	3.5500	0.43240	0.17650
	Up to 4 years	2	3.6500	0.49500	0.35000
	5 years +	1	4.2000	.	.
	Total	196	3.7720	0.45370	0.03240

Table 3.10: Descriptive statistics – constructs by family

Construct	Family	N	Mean	Std. Devia- tion	Std. Error
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Inclination	Entrepreneur(s)	15	3.75	0.5218	0.1347
	Executive/Manager	28	3.589	0.4905	0.0927
	Self-employed/Professional	43	3.532	0.565	0.0862
	Employee	81	3.568	0.5643	0.0627
	Other	29	3.409	0.5994	0.1113
	Total	196	3.554	0.557	0.0398
Image	Entrepreneur(s)	15	4.1333	0.40478	0.10451
	Executive/Manager	28	3.9223	0.40756	0.07702
	Self-employed/Professional	43	4.0233	0.5393	0.08224
	Employee	81	4.0196	0.44039	0.04893
	Other	29	4.0751	0.47863	0.08888
	Total	196	4.0234	0.46116	0.03294
Role Models	Entrepreneur(s)	15	3.0952	0.83066	0.21447
	Executive/Manager	28	2.7551	0.6516	0.12314
	Self-employed/Professional	43	2.8671	0.79625	0.12143
	Employee	81	2.5908	0.71384	0.07932
	Other	29	2.7143	0.754	0.14001
	Total	196	2.7318	0.74709	0.05336
University	Entrepreneur(s)	15	3.3714	0.59652	0.15402
	Executive/Manager	28	3.3495	0.37107	0.07013
	Self-employed/Professional	43	3.2625	0.51737	0.0789
	Employee	81	3.306	0.52516	0.05835
	Other	29	3.3054	0.48741	0.09051
	Total	196	3.3076	0.50054	0.03575
Curriculum	Entrepreneur(s)	15	3.637	0.76459	0.19742
	Executive/Manager	28	3.5556	0.46751	0.08835
	Self-employed/Professional	43	3.4341	0.80665	0.12301
	Employee	81	3.5418	0.63814	0.0709
	Other	29	3.7203	0.51914	0.0964
	Total	196	3.5539	0.6527	0.04662
Approach	Entrepreneur(s)	15	3.32	0.8906	0.2299
	Executive/Manager	28	3.043	0.548	0.1036
	Self-employed/Professional	43	3.042	0.6437	0.0982
	Employee	81	3.044	0.5771	0.0641
	Other	29	3.041	0.5766	0.1071
	Total	196	3.064	0.6145	0.0439
Internship	Entrepreneur(s)	15	3.767	0.5178	0.1337
	Executive/Manager	28	3.854	0.4176	0.0789
	Self-employed/Professional	43	3.784	0.5052	0.077
	Employee	81	3.758	0.4248	0.0472
	Other	29	3.721	0.4716	0.0876
	Total	196	3.772	0.4537	0.0324

3.3.4 Correlation and regression Analysis

To evaluate the relationship between the variables, correlation analysis and multiple regression analysis were performed. Cooper and Emory (1995:485) advocate that the correlation significance be checked before making comparisons. For the correlation matrix (see Table 3.11 on page 53), the Pearson correlation coefficients are reported with the values in the second line of each row indicating the p – values. This study considers the correlation to be statistically significant at the 0.05 and 0.01 levels, as indicated at the bottom of Table 3.11 (page 53). The university's role to promote entrepreneurship is highly correlated to the entrepreneurial curriculum and content. From the correlation matrix (see Table 3.11 on page 53) most of the scales have a statistically significant correlation with entrepreneurial inclination with the exception of place and personal independent learning approach. This means that where the students originally came from, did not have any statistical significance, personal independent learning approach did not have any statistical significance either.

From Table 3.11 (page 53) one can read that the factors: image of entrepreneurship, the role of university to promote entrepreneurship, the entrepreneurial curriculum and content, and the entrepreneurship internships are all statistically significant when determining the inclination of students from NWU to take entrepreneurship as a career choice. However, as alluded before, the university's role to promote entrepreneurship is highly correlated to the entrepreneurial curriculum and content. It means that either the role of the university to promote entrepreneurship or the entrepreneurial curriculum and content play a significant role in the determination of the entrepreneurial inclination of NWU students. The abovementioned correlation results in the inclusion of the image of entrepreneurship, the role of university to promote entrepreneurship, the entrepreneurship internships and the academic year of study in the final model. This is a very important result in that it tells that the entrepreneurial inclination is dependent on the image of entrepreneurship, the role of university to promote entrepreneurship, the entrepreneurship internships and the academic year of study. The explanation is given in more detail later in sub-section 3.3.5.

Table 3.11: Matrix correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Inclination	Pear Corre	1														
	Sig. (2-tailed)															
Image	Pear Corre	0.401**	1													
	Sig. (2-tailed)	0														
Role Models	Pear Corre	0.149*	0.202**	1												
	Sig. (2-tailed)	0.037	0.005													
University	Pear Corre	0.386**	0.435**	0.416**	1											
	Sig. (2-tailed)	0	0	0												
Curriculum	Pear Corre	0.323**	0.366**	0.213**	0.526**	1										
	Sig. (2-tailed)	0	0	0.003	0											
Approach	Pear Corre	0.124	0.198**	0.331**	0.320**	0.285**	1									
	Sig. (2-tailed)	0.083	0.005	0	0	0										
Internship	Pear Corre	.378**	0.231**	0.071**	0.348**	0.329**	0.168**	1**								
	Sig. (2-tailed)	0	0.001	0.325	0	0	0.018									
Gender	Pear Corre	-	0.189**	-	-	-	0.061**	0.040**	1							
	Sig. (2-tailed)	0.295	0.008	0.577	0.804	0.364	0.398	0.574								

Race	Pear Corre	-	-	0.186**	-	-	-	0.032**	0.083**	1						
	Sig. (2-tailed)	0.118**	0.071**	0.009	0.123	0.67	0.919	0.654	0.246							
Age	Pear Corre	-	-	-	-	-	-	-	0.052	-	1**					
	Sig. (2-tailed)	0.003**	0.012**	0.08**	0.173*	0.191**	0.092**	0.109**	0.471	0.799						
Place	Pear Corre	-	-	-	-	-	-	-	0.046	0.237	0.022	1				
	Sig. (2-tailed)	0.065	0.052**	0.034*	0.036**	0.118**	0.006	0.04**	0.523	0.001	0.763					
Programme	Pear Corre	-	-	-	-	-	-	-	-	-	-	0.031**	1**			
	Sig. (2-tailed)	0.236**	0.253**	0.049**	0.203**	0.258**	0.046**	0.111**	0.18**	0.028**	0.025**	0.663				
Year	Pear Corre	-	-	-	-	-	-	-	-	-	-	-	0.046**	1*		
	Sig. (2-tailed)	0.162*	0.067**	0.023*	0.164**	0.126**	0.008**	0.072**	0.003*	0.068**	0.078**	0.062	0.518			
Work	Pear Corre	-	-	-	-	-	-	-	-	-	-	-	-	0.005**	1**	
	Sig. (2-tailed)	0.015**	0.041**	0.001**	0.118**	0.112**	0.007**	0.001**	0.037**	0.066**	0.404**	0.052**	0.562	0.945		
Family	Pear Corre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1**
	Sig. (2-tailed)	0.114*	0.022**	0.145**	0.030**	0.042**	0.074**	0.062**	0.046	0.242**	0.008**	0.018*	0.184**	0.027**	0.018**	
	N	0.111	0.762	0.043	0.675	0.555	0.306	0.385	0.518	0.001	0.913	0.801	0.01	0.705	0.803	
	N	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3.12: Regression - model summaries

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.401 ^a	0.161	0.156	0.5116
2	0.497 ^b	0.247	0.239	0.4859
3	0.523 ^c	0.273	0.262	0.4785
4	0.539 ^d	0.291	0.276	0.4740

- a. Predictors: (Constant), Image
- b. Predictors: (Constant), Image, Internship
- c. Predictors: (Constant), Image, Internship, Year
- d. Predictors: (Constant), Image, Internship, Year, University

Table 3.13: Regression for Models 1, 2, 3 and 4 - ANOVA tests

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.728	1	9.728	37.169	.000 ^b
	Residual	50.772	194	0.262		
	Total	60.5	195			
2	Regression	14.936	2	7.468	31.633	.000 ^c
	Residual	45.564	193	0.236		
	Total	60.5	195			
3	Regression	16.536	3	5.512	24.073	.000 ^d
	Residual	43.964	192	0.229		
	Total	60.5	195			
4	Regression	17.584	4	4.396	19.565	.000 ^e
	Residual	42.916	191	0.225		
	Total	60.5	195			

- a. Dependent Variable: Inclination
- b. Predictors: (Constant), Image
- c. Predictors: (Constant), Image, Internship
- d. Predictors: (Constant), Image, Internship, Year
- e. Predictors: (Constant), Image, Internship, Year, University

Table 3.14: Regression for Models 1, 2, 3 and 4 - coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.605	0.322		4.989	0
	Image	0.484	0.079	0.401	6.097	0
2	(Constant)	0.546	0.38		1.439	0.152
	Image	0.4	0.078	0.331	5.162	0
	Internship	0.37	0.079	0.302	4.697	0
3	(Constant)	0.826	0.389		2.125	0.035
	Image	0.383	0.077	0.317	4.994	0
	Internship	0.389	0.078	0.317	4.987	0
	Year	-0.182	0.069	-0.164	-2.644	0.009
4	(Constant)	0.683	0.391		1.749	0.082
	Image	0.315	0.082	0.261	3.841	0
	Internship	0.336	0.081	0.274	4.152	0
	Year	-0.155	0.069	-0.139	-2.228	0.027
	University	0.172	0.08	0.155	2.16	0.032

a. Dependent Variable: Inclination

Hierarchical multiple regression is designed to check the contribution made by different variables to the inclination toward entrepreneurship, where two steps are involved. Demographic characteristics and family environment are controlled first. Step two involved both the control and independent variables. The entrepreneurial inclination is the dependent variables. The results are shown in Table 3.14 above.

The use of multiple regressions allows for the partitioning of variance with correlated predictors, thereby reducing the likelihood of making a Type 1 error. The coefficient of multiple determinations was used to compute what proportion of the variance of the dependent variables is due to the combined effects of the predictors (Cohen & Holliday, 1998:98). The sign of the regression coefficients indicates the nature of the relationship between the variables under study. The regression procedure uses stepwise regression; first the variables that contribute the most to explaining the dependent variable are entered, and the rest of the variables are included in order of their incremental contribution after the first variable, provided they are statistically significant.

Using this procedure, image of entrepreneurship, the internship programmes, academic year and university's role to promote entrepreneurship (see Table 3.12 on page 56) produced models 1, 2, 3 and 4 with an adjusted R square of 0.156, 0.239, 0.262 and 0.276 respectively. Interpreting model 1 if image of entrepreneurship is taken as a predictor it explains 17 per cent of the variance in the NWU students' inclination towards entrepreneurship. From model 2 it can be deduced that including the internship programmes only improves the explanation slightly (24 per cent), which is still low. NWU students' inclination towards entrepreneurship is improved further by 26% if academic year of study is included in model 3. From model 4 it can be shown that including university's role to promote entrepreneurship only improves the explanation slightly (28 per cent); the variables included in the model seem to be contrasting the question that was asked earlier on whether an interest in taking entrepreneurship as a career choice is determined solely by one's background, mindset, attitude or mental framework, or whether it can be cultivated and taught. This is answered in detail below.

3.3.5 Constructing a mathematical model

In Table 3.13 (page 56) the ANOVA calculates an F value which has an overall role for all the models and for each of the independent variables and measures. The results in this case represent a set of regression coefficients that are statistically significant from zero.

The general regression equation is given by:

$$\hat{y} = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

Equation 1

From Table 3.14 (page 57) the values for the coefficients are read which gives the following estimated regression equation:

$$\hat{y} = 0.683 + 0.315x_1 + 0.336x_2 - 0.155x_3 + 0.172x_4 + \varepsilon$$

Equation 2

where \hat{y} is the dependent variable: inclination.

The constant $\beta_0 = 0.683$ from Equation 2 shows the level of inclination when $x_1 = x_2 = x_3 = x_4 = 0$, that is, if there is nothing good that comes out of the image of entrepreneurs, entrepreneurship is not offered as one of the programmes at any level and the university's role to promote entrepreneurship is at its lowest.

The coefficient for ' $x_1 =$ image of entrepreneurship' shows that the inclination towards entrepreneurship increases with increasing positivity about the image of the entrepreneurship while keeping other variables constant, that is, ' $x_2 =$ the internship programmes', ' $x_3 =$ academic year' and ' $x_4 =$ university's role to promote entrepreneurship' constant. The coefficient for ' $x_2 =$ the internship programmes' points to the fact that the inclination towards entrepreneurship increases with increasing in the number of students going for entrepreneurial internship programmes while keeping other variables constant, that is, ' $x_1 =$ image of entrepreneurship', ' $x_3 =$ academic year' and ' $x_4 =$ university's role to promote entrepreneurship' constant.

For the coefficient of ' $x_3 =$ academic year' a different result is shown, there is an inverse relationship between the predictor and the dependent variable \hat{y} . The result indicates that the inclination towards entrepreneurship increases if students are introduced to entrepreneurship education early enough. At the institution of higher learning it should be at their first year of study, while keeping other variables constant, that is, ' $x_1 =$ image of entrepreneurship', ' $x_2 =$ the internship programmes' and ' $x_4 =$ university's role to promote entrepreneurship' constant.

The University's role to promote entrepreneurship, if taken seriously has a potential of increasing the inclination toward entrepreneurship. From Table 3.11 (page 54) it is clear that curriculum and university are the only most highly correlated variables. This means that with the right curriculum and the university playing an active role to promote entrepreneurship, there is bound to be an increase in the number of students interested in taking entrepreneurship as a career choice. The error term, ε , from Equation 2 represents the effect of the variables that were omitted from the equation. The resulting

equation is very important; it shows briefly how to quickly determine the entrepreneurial rate of NWU given image, year, university and internship programmes.

To a greater extent primary objective has been achieved: there is an interest among NWU students in taking entrepreneurship as a career choice. Literature study has ensured that this study is able to review a broad overview of entrepreneurial activity and entrepreneurship educational trends within two campuses of the North-West University, which formed part of the secondary objectives.

Literature study also made it possible for the study to address the second secondary objective, namely to investigate entrepreneurship as a discipline and field of inquiry. The study could not quantitatively link entrepreneurship as a discipline and field of inquiry to the primary objective, but it has shown through literature review that entrepreneurship has been accepted as a discipline and a field of research world over. The study has shown quantitatively that NWU has entrepreneurial programmes in place. The NWU also supports entrepreneurship but not to the extent of making a significant impact, as more still needs to be done.

Chapter 4 Conclusion, Implications and Recommendation, Limitations and Future Research

4.1 Conclusion

In this study, North-West University students' intention towards taking entrepreneurship as a career choice was examined together with several related variables. The results of the analysis indicate that three entrepreneurship education variables, namely, the role of university to promote entrepreneurship, the entrepreneurial curriculum and content and the entrepreneurial internships along with the image of entrepreneurship are statistically significant.

From Table 3.11 (page 54), it can be read that the role of the University to promote entrepreneurship and the entrepreneurial curriculum and content are the only variables which are highly correlated. This comes as no surprise as the final model does not include entrepreneurial curriculum and content. It is because the role of the University to promote entrepreneurship includes among other things, good entrepreneurship programmes and well structured curriculum as well as the content which supports that.

The final model includes the role of the University to promote entrepreneurship, image of entrepreneurship, academic year of study and the entrepreneurial internships. This simply says that for entrepreneurship to flourish within the university and for the student to start taking entrepreneurship as a career choice, there is a need for the university to play an active role both in creating an entrepreneurial environment and in promoting entrepreneurial spirit. The university needs to have relevant programmes in place to achieve all these. The university needs to partner with pioneers or existing entrepreneurs and invite them regularly so that they can address students and let them mentor students who are willing to give entrepreneurship a hand while studying.

This will mean that there must be a paradigm shift regarding students' current learning approach. The shift must be such that it promotes the 'see, touch and feel' entrepreneurial learning process.

As alluded before, the timing of the exposure to entrepreneurship is very important and if it is done soon enough, it might influence the students' perception about their future careers. The subject needs to be introduced at high school level already and not at university level for the first time. The model also suggests that entrepreneurial inclination increases with the decreased academic year of study, this means that when a student completes an entrepreneurship courses at first year, for example, this will increase the number of students who will consider entrepreneurship as a career choice. This is in line with students' career planning, because the more years students spend in their studies the less flexible they become in changing their careers choices. Most of the students plan from high school on what to study at the university; some of them come to the university with open options. If they had not covered entrepreneurship at high school, it will be intriguing for them to study entrepreneurship in the first year of their studies.

The model also shows that entrepreneurial inclination increases with an increase in entrepreneurial internships. This result will have some implications for the University; the institution will need to arrange for students to complete an entrepreneurial experiential period before being conferred a qualification in entrepreneurship. The most practical approach will be for an aspiring entrepreneur to work on a business development project with a practising entrepreneur, so that at the end of that project a student would have learned most important aspects of establishing a business. This calls for a practical learning environment.

In section 1.2 some questions were raised and although they do not form a major part of the study, it is only proper to see if they were addressed or not. Although students were not directly asked the question of how aware NWU students were about entrepreneurship, the response to one of the questions from the questionnaire was that the students seriously considered entrepreneurship as a highly desirable career option. It shed some light on a question that illustrated the fact that NWU students were aware about entrepreneurship. The results are shown in Figure 4.1 on the next page.

The question whether there were entrepreneurial programmes offered at NWU was asked previously. This question was more direct in the questionnaire under the question: My university course prepares students well for entrepreneurial careers. The results are indicated in Figure 4.2 below.

Figure 4.1: I seriously consider entrepreneurship as highly desirable career option

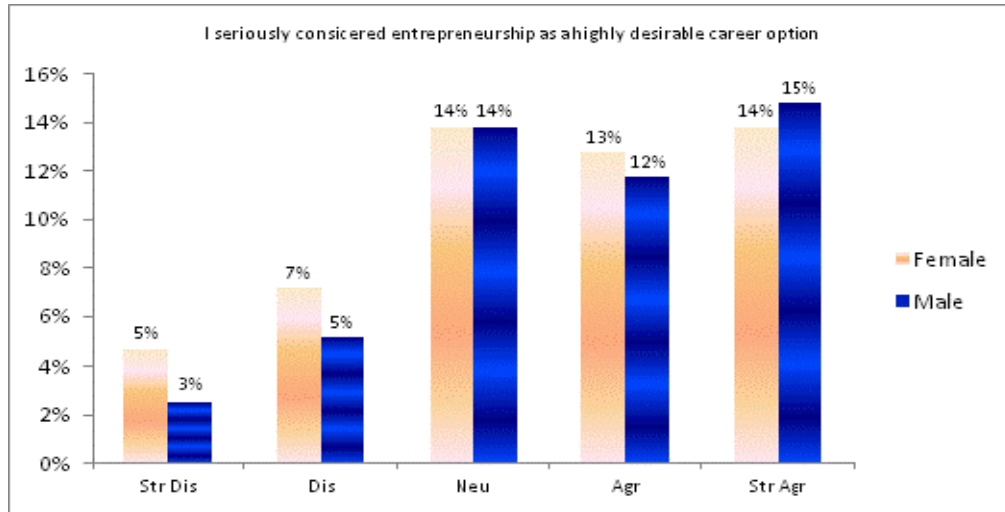
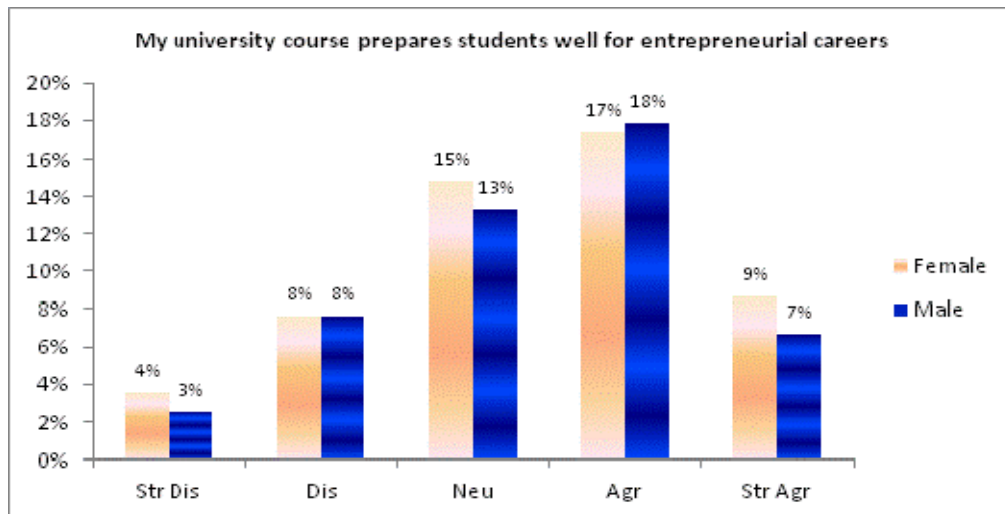


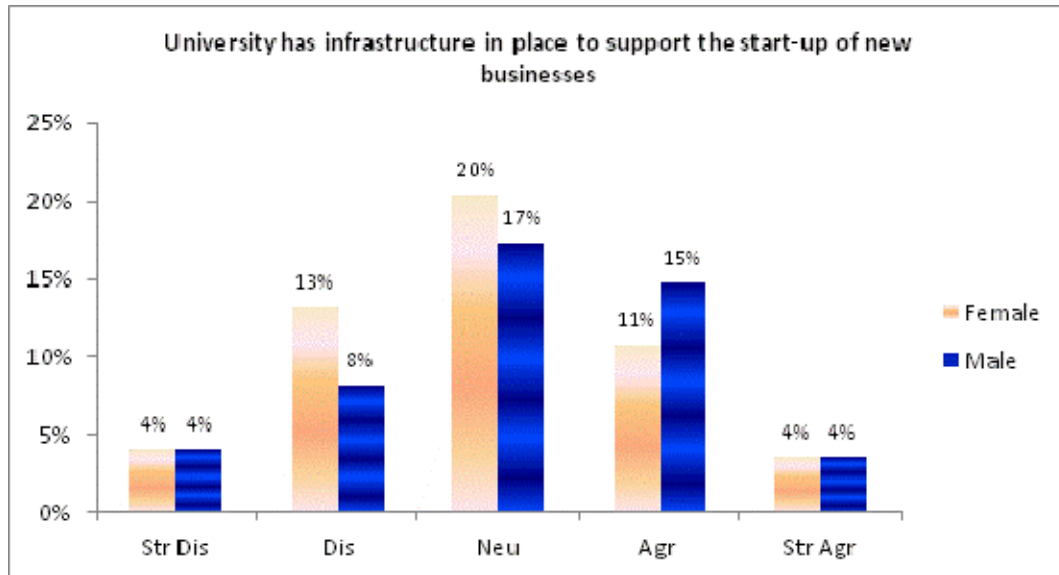
Figure 4.2: My university course prepares students well for entrepreneurial careers.



On the question of whether there was enough support for these entrepreneurial programmes within NWU, students did not seem to be convinced that there was enough support, especially for new business start-ups. This is shown in the response to the

question: The University has infrastructure in place to support the start-up of new businesses. The results are shown in Figure 4.3 below.

Figure 4.3: University has infrastructure in place to support the start-up of new businesses.



Another indirect question asked was whether an interest in taking entrepreneurship as a career choice was determined solely by one's background, mindset, attitude and mental framework, or whether it can be cultivated and taught. In addressing this question the study refers to the constructed model given by Equation 1. The model included two entrepreneurship education variables, namely, the role of university to promote entrepreneurship and the entrepreneurial internships along with the academic year of study. This is reason enough to mention that entrepreneurship can be cultivated and taught.

Once more the study uses the model to test whether there is a relationship between entrepreneurship exposure and the intentions to choose entrepreneurship as a career. The model shows that entrepreneurial inclination has inverse relationship with the academic year of study, this means that entrepreneurial inclination increases with decrease in the academic year of study. The earlier the student is exposed to entrepreneurship the better are the chances of considering it as a career choice.

4.2 Implications and recommendation

To a greater extent this study has addressed its primary objective and this has raised some implications. It is evident from the model that the entrepreneurial inclination increases with a decreasing academic year of study. This means that the sooner a student is introduced to entrepreneurship the higher the chance of considering entrepreneurship as a career. Now it is upon the management of the respective campuses not only to ensure that entrepreneurship is part of students' curriculum from their first year of study, but also that the management supports and creates an environment conducive enough for students to embark on enterprise developments.

By creating this environment the campuses can establish incubators or enterprise development centers, where students can walk-in whenever they have a business idea they want to pursue, then these centers will be manned by staff that will be able to assist these students. The main aim will be to see if the idea is feasible enough to be transformed into a business concept; if that is the case then the staff will coach and mentor the student all the way. NWU-VT campus has already established such a center, but it is still at infancy stage.

The study recommends that NWU become part and parcel of bodies such as South African Business and Technology Incubator Association (SABTIA), in order for it to fully support its students. This will assist in connecting the university with the business world and help in making the best of both worlds.

It must be borne in mind that most of the successful entrepreneurship programmes follow the principle of 'see, touch and feel' entrepreneurial learning process. With the affiliation of the university to these bodies comes the leverage; the university will be able to leverage on hands-on experience and the networks that already exist in the business world. By hands-on experience it is meant that an entrepreneurship student will be able to work with a practising entrepreneur and will be able to learn firsthand about some of the pitfalls that are common when embarking on entrepreneurship.

4.3 Limitations and Future Research

There are several limitations picked up during this study. The greatest challenge picked up is in the data collection process, since the study only collected cross-sectional data, in the sense that only BCom second and third year students (entrepreneurship and non-entrepreneurship) were selected and data collected to address the problem of the study.

Data was collected as a once off event for this study, but if there would be another data collection in two and three years for the third and second year students respectively to measure if there has been any business development taking place or not, longitudinal data will provide validity research support.

Further, the findings are applicable specifically within the characteristics of the sample and the study region, i.e. university students at North-West University; therefore, extrapolation to other universities remains speculative.

Chapter 5 Bibliography

Abor, J. & Quartey, P. 2010. Issues in SME Development in Ghana and South Africa. *International research journal of finance and economics*, 39: 218 – 228.

Adcorp Employment Index (AEI). 2012. Press Release.

<http://www.adcorp.co.za/Documents/12%2003%202012%20REPORT%20Adcorp%20Employment%20Index%20February%202012.pdf>. Date of access: 12 March 2012.

Ajzen, I. 1991. The theory of planned behavior. *Organisational behavior and human decision processes*, 50: 179-211.

Alberti, F., Sciascia, S. & Poli, A. 2004. Entrepreneurship education: notes on an ongoing debate. Paper presented at the 14th annual Internationalising Entrepreneurship Education and Training (IntEnt) conference, University of Napoli Federico II, Italy, 4-7 July 2004.

Béchar, J. & Toulouse J. 1998. Validation of a didactic model for the analysis of training objectives in entrepreneurship. *Journal of business venturing*, 13: 317-332.

Boyle, T. J. 2007. A new model of entrepreneurship education: Implications for Central and Eastern European universities. *Industry & higher education*, 16: 9-19.

Collins, L., Hannon, P.D. & Smith, A. 2004. Enacting entrepreneurial intent: the gaps between student needs and higher education capability. *Education + Training*, 46(8): 454 – 463.

Cooper, S., Bottomley, C. & Gordon, J. 2004. Stepping out of the classroom and up the ladder of learning: An experiential learning approach to entrepreneurship education. *Industry and higher education*, 18(1): 11 – 22.

Cooper, R.D. & Emory, C.W. 1995. *Business Research Methods*. 5th ed. Chicago: Irwin.

Deakins, D., Glancey, K., Menter, I. & Wyper, J. 2005. Enterprise education: The role of Head Teachers. *International entrepreneurship and management journal*, 1: 241-263.

Dempsey, I., Gore, A. & Fal, M. 2011. The entrepreneurial dialogues: State of entrepreneurship in South Africa.

<http://www.gibs.co.za/SiteResources/documents/The%20Entrepreneurial%20Dialogues%20-%20State%20of%20Entrepreneurship%20in%20South%20Africa.pdf>. Date of access: 12 March 2012.

- Dhliwayo, S. 2008. Experiential learning in entrepreneurship education: A prospective model for South African tertiary institutions. *Education + Training*, 50(4): 329 – 340
- Edwards, L. J. & Muir, E. J. 2005. Promoting entrepreneurship at the University of Glamorgan through formal and informal learning. *Journal of small business and enterprise development*, 12(4): 613-626.
- Etzkowitz, H. 2003. Innovation in Innovation: The triple helix of university-industry-government relations. *Social Science Information*, 42:293.
- Fayolle, A., Gailly, B & Lassas-Clerc, N. 2006. Assessing the impact of entrepreneurship education programmes: a new methodology. *Journal of European industrial training*, 30(9):701-720.
- FinMark Trust. 2011. FinScope South Africa Small Business Small Business Survey, 2010. http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&sqi=2&ved=0CDMQFjAE&url=http%3A%2F%2Fwww.finscope.co.za%2Fnew%2Fscriptlibrary%2Fgetfile.aspx%3Ffilename%3DFinScope%2520small%2520business%2520survey.pdf%26file%3D..%2Fmodule_data%2Fabb94be2-c25b-4e2b-8fea-b4cb8cf019ab%2Fdownloads%2Fd6df1c42-4233-4227-ab9b-861281045506.file&ei=r2dpUPyKLMiAhQfh5IFo&usg=AFQjCNHr46Pmu0-U29cWw8rn8CKdM-MTPA Date of access: 15 July 2012.
- Gauteng Enterprise Propeller (GEP). 2012. Y-AGE takes a ten step approach towards creating 1 million new jobs for Gauteng. http://www.gep.co.za/?module=menu&sub_module=display_content&id=60. Date of access: 19 October 2012.
- Gernetzky, K. 2012. South Africa bottom of class in maths and science. *Business Day*, 31 October. <http://www.bdlive.co.za/national/education/2012/10/31/south-africa-bottom-of-class-in-maths-and-science>. Date of access: 14 November 2012.
- Global Entrepreneurship Monitor (GEM). 2010. GEM_SpecialReport_2010. A global perspective on entrepreneurship education and training. <http://www.gemconsortium.org/docs/download/276> Date of access: 25 June 2012.
- Global Entrepreneurship Monitor (GEM). 2011. GEM_AnnualReport_2011. <http://www.gemconsortium.org/docs/download/2201>. Date of access: 25 June 2012.

Gürol, Y. & Atsan, N. 2006. Entrepreneurial characteristics amongst university students: some insights for entrepreneurship education and training in Turkey. *Education + Training*, 48(1): 25-38.

Herrington, M., Kew, J., Simrie, M. & Turton, N. 2011. Global Entrepreneurship Monitor, South Africa. Graduate School of Business, University of Cape Town. GEM_AnnualReport_2011.

Isa, M. 2012. Unemployment rate dips slightly, to 24,9%. Business Day, 31 July.
<http://www.businessday.co.za/articles/Content.aspx?id=177410>. Date of access: 01 August 2012.

Hytti, U., & O'Gorman, C. 2004. What is 'enterprise education?' An analysis of the objectives and methods of enterprise education programmes in four European countries. *Education + Training*, 46(1):11-23.

Kart, J. A. 2003. The chronology and intellectual trajectory of American entrepreneurship education 1876–1999. *Journal of Business Venturing*, 18: 283–300

Keat, O.Y., Sevarajah, C. & Meyer, D. 2011. Inclination towards entrepreneurship among university students: An empirical study of Malaysian university students. *International journal of business and social science*, 2(4): 209-220.

Kennispark Twente. 2012. TOP scheme and accounting.
http://www.utwente.nl/mesaplus/Starting_entrepreneurs/Top%20scheme%20and%20accounting/. Date of access: 10 August 2012.

Kirkwood, J. 2007. Igniting the entrepreneurial spirit: is the role parents play gendered?, *International journal of entrepreneurial behaviour & research*, 13(1):39 – 59.

Kolvereid, L. & Isaksen, E. 2006. New business start-up and subsequent entry into self-employment. *Journal of business venturing*, 21: 866-885.

Krueger N.F., Reilly M.D. & Carsrud AL. 2000. Competing models of entrepreneurial intentions. *Journal of business venturing*, 15: 411-432.

Kuratko, D.F. 2005. The emergence of entrepreneurship education: development, trends, and challenges. *Entrepreneurship theory and practice*, 577-597

Lena, L. & Wong, P. 2003. Attitude towards entrepreneurship education and new venture creation. *Journal of enterprising culture*, 11(4): 339-357.

- Lee, S.M., Lim, S., Pathak, R.D., Chang, D. & Li, W. 2006. Influences on students attitudes toward entrepreneurship: a multi-country study. *The international entrepreneurship and management journal*, 2(3): 351-366
- Louw, L., Van Eeden, S.M., Bosch, J.K. & Venter, D.J.L. 2003. Entrepreneurial traits of undergraduate students at selected South African tertiary institutions. *International journal of entrepreneurial behavior & research*, 9(1): 5-26.
- Mouton, J. 2002. *Understanding Social Research*. Pretoria: Van Schaik.
- Naidoo, N. 2012. Entrepreneurship could cure South Africa's growing youth unemployment crisis. BizCommunity, 11 June. <http://www.bizcommunity.com/Article/196/534/76602.html>. Date of access: 01 August 2012.
- National Planning Commission (NPC). 2012. National Development Plan 2030. Our future - Make it work. <http://www.info.gov.za/view/DownloadFileAction?id=172306> Date of access: 01 October 2012.
- Nicolaidis. A. 2011. Entrepreneurship-the role of Higher Education in South Africa. *Educational Research*. 2(4): 1043-1050.
- North-West University (NWU). 2012. NWU at a glance. http://www.nwu.ac.za/webfm_send/41223 Date of access: 25 June 2012.
- North-West University (NWU). Faculty of commerce and administration. <http://www.nwu.ac.za/node/4218>. Date of access: 20 October 2012.
- Nurmi, P. & Paasio, K. 2007. Entrepreneurship in Finnish universities. *Education + Training*, 49(1): 56-65.
- Opoku-Antwi, G.L., Amofah, K., Nyamaah-Koffuor, K. & Yakubu A. 2012. Entrepreneurial Intention Among Senior High School Students in the Sunyani Municipality. *International review of management and marketing*, 2(4): 210-219
- Osborne, J.W. & Costello, A.B. 2009. Best practice in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Pan-Pacific management review*, 12(2): 131-146
- Pauw, K., Oosthuizen, M. & Van der Westhuizen, C. 2006. Graduate unemployment in the face of skills shortages: a labour market paradox. Paper presented at the Accelerated and Shared Growth in South Africa: Determinants, Constraints and Opportunities conference, the Birchwood Hotel and Conference centre, Johannesburg, South Africa, 18-20 October 2006.

http://www.tips.org.za/files/forum/2006/papers/KPauw_Graduate_Unemployment.pdf. Date of access: 25 June 2012.

Peterman, N. E. & Kennedy, J. 2003. Enterprise education: influencing students' perceptions of entrepreneurship. *Entrepreneurship theory and practice*, 28(2): 129-144.

Postigo, S. & Tamborini, M.F. 2002. Entrepreneurship Education in Argentina: The case of San Andres University. Paper presented for the Internationalizing Entrepreneurship Education and Training Conference- IntEnt 2002. Malasya, 8-10 July 2002.

<http://www.udesa.edu.ar/files/img/Administracion/dtn27.pdf>. Date of access: 25 June 2012.

Raichaudhuri, A. 2005. Issues in entrepreneurship education. *Decision* 32(2): 1-20.

Reynolds, P.D., Bygrave, W.D. & Autio, E. 2003. Global Entrepreneurship Monitor, USA. Babson College, Babson Park, MA, USA. GEM_AnnualReport_2003.

Rhodes University. Postgraduate diploma in enterprise management.

<http://www.ru.ac.za/management/courses/pdem/>. Date of access: 20 October 2012.

SALGA – Y-AGE. 2011. Paper presented at Municipal consultative conference. Kopanong Conference Centre, Benoni. 12 - 14 December 2011.

Sapa. 2010. New-curriculum, new language options, 07 July 2010.

<http://www.news24.com/SouthAfrica/Politics/New-curriculum-new-language-options-20100706>. Date of access: 25 June 2012.

Schwab, K. 2010. The Global Competitiveness Report 2010-2011. World Economic Forum. Geneva, Switzerland.

Shanduka Black Umbrellas. 2009. <http://www.shandukablackumbrellas.org/About-us/index.html>.

Date of access: 12 March 2012.

Smith, D. T. 2005. Developing self-employment among African Americans: The impact of household social resources on African American entrepreneurship. *Economic development quarterly*, 19(4): 346-355.

Softstart BTI. 2012. Welcome to Softstart Business Technology Incubator.

<http://softstartbti.co.za/>. Date of access: 20 October 2012.

South Africa. Department of Education (DoE). 2009. Trends in education macro-indicators report. <http://www.education.gov.za/LinkClick.aspx?fileticket=kKd2AHtjxYo%3D&tabid=358&mid=1261>. 25 June 2012.

South Africa. National Planning Commission (NPC). 2011. National Planning Commission: Diagnostic Overview. <http://www.info.gov.za/view/DownloadFileAction?id=147192>. Date of access: 25 June 2012.

South Africa. Department of Trade and Industry (Dti). 2012. SMMEs development financial assistance. Incubator Support Programme. http://www.thedti.gov.za/financial_assistance/financial_incentive.jsp?id=54&subthemeid=8 Date of access: 01 October 2012.

Taylor, J.M. 2008. The effects of a computerized-algebra program on mathematics achievement of college and university freshmen enrolled in a developmental mathematics course. *Journal of college reading and learning*, 39(1): 35-53.

The Center for Entrepreneurship (CfE). Leadership Development Center. http://www.wbs.ac.za/speciality_courses/cfe/. Date of access: 20 October 2012.

Timmons, J.A. 1994. *New Venture Creation*. Burr Ridge, Ill.: Irwin.

United Nations Educational, Scientific and Cultural Organisation (UNESCO). 2012. Adult and youth literacy. <http://www.uis.unesco.org/literacy/Documents/fs20-literacy-day-2012-en-v3.pdf> Date of access: 08 September 2012.

University of Cape Town (UCT). Faculty of Commerce, management studies. <http://www.commerce.uct.ac.za/managementstudies/pgdiplomas/em.asp>. Date of access: 20 October 2012.

University of Fort Hare (UFH). Faculty of management and commerce. <http://www.ufh.ac.za/files/FACULTY%20OF%20MANAGEMENT%20AND%20COMMERCE%20-%20ACCOUNTING%20PROSPECTUS%20ENTRY.pdf>. Date of access: 20 October 2012.

University of Free State (UFS). Business management. Unit for entrepreneurship. <http://econ.ufs.ac.za/content.aspx?id=5>. Date of access: 20 October 2012.

University of Limpopo (UL). School of economics and management.

http://www.ul.ac.za/index.php?Entity=School%20Main%20Menu&school_id=5. Date of access: 20 October 2012.

University of Pretoria (UP). Faculty of economic and management science.

<http://web.up.ac.za/default.asp?ipkCategoryID=40>. Date of access: 20 October 2012.

University of Stellenbosch (SUN). Department of business management.

<http://academic.sun.ac.za/business/eng/qualifications-modules.html>. Date of access: 20 October 2012.

University of Western Cape (UWC). Faculty of economic and management science.

http://www.uwc.ac.za/index.php?module=cms&action=showfulltext&id=gen11Srv7Nme54_4890_1210050564&menustate=academic#F04. Date of access: 20 October 2012.

University of Witwatersrand (Wits). Faculty of commerce, law and management.

<http://www.wits.ac.za/prospective/postgraduate/programmes/11592/commercelawmanagement.html>. Date of access: 20 October 2012.

Urban, B. 2006. Entrepreneurship education and entrepreneurial intentions: A prospect for higher education. *Education as change*, 10(1): 85-103.

Van Auken, H., Stephens, P., Fry, L.F. & Silva, J. 2006. Role model influences on entrepreneurial intentions: A comparison between USA and Mexico. *International entrepreneurship and management journal*, 2(3): 325-336.

Van der Berg. S. & Louw. M. 2004. Labour trends observed in South Africa: 1995-2002. A context paper prepared for the World Bank. DIFID-WB collaboration on knowledge and skills in the new economy. University of Stellenbosch.

Veciana, J. M., Aponte, M. & Urbano, D. 2005. University students' attitudes towards entrepreneurship: A Two countries comparison. *International entrepreneurship and management journal*, 1: 165-182.

Venture Lab Twente. 2011. Full support for ambitious business development.

<http://www.utwente.nl/mb/nikos/teaching/summerschooltechnologyventuring2011/aboutventurelabtwenteleaflet.pdf>. Date of access: 10 August 2012.

Volery, T. & Mueller, S. 2006. A conceptual framework for testing the effectiveness of entrepreneurship education programmes towards entrepreneurial intention. 51st ICSB World Conference Melbourne, Australia.

Wang, C.K. & Wong, P. 2004. Entrepreneurial interest of university students in Singapore. *Technovation*, 24: 163-172.

Wong, P. & Lena, L. 2005. Antecedents for entrepreneurial propensity in Singapore. NUS Entrepreneurship Center, Working paper. Reference number: WP2005-12

Wu, S. & Wu, L. 2008. The impact of higher education on entrepreneurial intentions of university students in China. *Journal of small business and enterprise development*, 15(4): 752-774.

Yes!Delft. 2012. Building tomorrow's leading firms. <http://www.yesdelft.com/>. Date of access: 10 August 2012.