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Entrepreneurial intent and perseverance among South African students

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ENTREPRENEURIAL INTENT AND PERSEVERANCE AMONG SOUTH AFRICAN STUDENTS

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management specialising in Entrepreneurship and New Venture Creation

(Johannesburg, 2014)

ABSTRACT

South Africa is currently experiencing high levels of unemployment, and entrepreneurship is regarded as a tool that can help solve the problem.

Entrepreneurial intent is regarded as the best predictor of actual entrepreneurial behaviour. On the other hand, perseverance is believed to influence a person's course of action and is considered to be one of the motivating factors that are necessary for entrepreneurship, as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). In this regard, we question if there is a relationship between entrepreneurial intent and perseverance.

Data was collected using two self-rating questionnaires called the Individual Entrepreneurial Intent Scale (IEIS) developed by Thompson (2009) to measure entrepreneurial intentions and the Short Grit Scale (Grit-S) which was developed by Duckworth and Quinn (2009) to measure perseverance.

The study found no significant relationship to exist between perseverance (measured using grit) and entrepreneurial intent. Regardless of a low level of perseverance, a person with high levels of entrepreneurial intent may still start a business. According to the person-entrepreneurship fit model, this person is more likely to fail (Markman & Robert, 2003). Furthermore, the study found final-year university students to have a low level of entrepreneurial intent and perseverance. The findings suggest that students prefer to be employed and thus will put more effort into finding a job than starting their own business ventures. They are unlikely to cope with the challenges associated with entrepreneurship.

Recommendations were made to educators and organisations aimed at developing entrepreneurs. These recommendations suggested were to improve current entrepreneurship and entrepreneurial training courses by introducing programmes aimed at improving the learners' levels of perseverance within the entrepreneurship courses. A recommendation was also made to introduce entrepreneurship courses to students from all fields of study, with the main aim of creating awareness and participation.

DECLARATION

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

Richard Pendame

Signed at ……

On the …….. day of …… 2014

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CHAPTER 1: INTRODUCTION

This chapter presents the purpose of the study, the background of the research, the main problem and sub-problems that were identified, the gap in theory the paper aims to fill, the scope of the study, the definitions used in the paper and the assumptions that have been made.

1.1 Purpose of the study

The purpose of the research was to determine the level of entrepreneurial intent and perseverance among South African final-year university students, and to investigate the relationship between the two constructs “entrepreneurial intent” and “perseverance” in the context of entrepreneurial education and training.

1.2 Context of the study

One of South Africa’s main challenges is the high level of unemployment, especially among the country’s youth (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012). South Africa’s unemployment rate in the first quarter of 2013 was estimated to be around 25% (Statistics South South Africa, 2013). It is widely accepted that entrepreneurship is very important to an economy as it is believed to facilitate the creation of jobs (Venter, Urban, & Rwigema, 2010). It is believed that a person’s intention to start a new business is the single best predictor of entrepreneurial behaviour (Choo & Wong, 2009; Venter, Urban, & Rwigema, 2010).

The underlying assumption of this research is that perseverance influences a person’s course of action (Eisenberger & Leonard, 1980) and is considered one of the motivating factors that is necessary for entrepreneurship, as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). It is well known that entrepreneurs encounter many challenges and the capacity to respond adaptively and overcome these challenges is considered a key to success (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002). The personality trait associated with this type of behaviour is perseverance.

Entrepreneurial intent is regarded as the best predictor of actual entrepreneurial behaviour. Entrepreneurial intentions are said to be higher in people who have a more positive attitude towards risk (Douglas & Shepherd, 2003). Additionally, perseverance is believed to influence a person's course of action and is considered to be one of the motivating factors that are necessary for entrepreneurship, as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). In this regard, we question if there is a relationship between entrepreneurial intent and perseverance.

1.3 Problem statement

1.3.1 *Main problem*

Determine if there is a relationship between entrepreneurial intent and an individual's level of perseverance.

1.3.2 *Sub-problems*

The first sub-problem was to analyse the level of entrepreneurial intent among final-year university students in South Africa.

The second sub-problem was to analyse the level of perseverance among final-year university students in South Africa.

The third sub-problem was to determine if there is a relationship between entrepreneurial intent and perseverance.

1.4 Significance of the study

The study aims to fill a gap in current knowledge of entrepreneurship education and training. According to the author's knowledge, based on the literature review, there has been very little research investigating the relationship between entrepreneurial intent and perseverance. The proposed research therefore aims to investigate if there is a relationship between these two constructs. Furthermore, the research aims to offer an insight into the level of

entrepreneurial intent and perseverance among final-year undergraduate students at South African universities.

Since entrepreneurship education is believed to have the capacity to increase both the quantity and quality of entrepreneurs (Venter, Urban, & Rwigema, 2010; Dickson, Solomon, & Weaver, 2008), the proposed study will provide guidance to educators and organisations interested in and aimed at developing entrepreneurs on whether there is a need to develop programmes that aim to develop the potential entrepreneur's levels of entrepreneurial intent and/or perseverance in South Africa.

1.5 Delimitations of the study

The proposed study focused on evaluating and analysing the levels of entrepreneurial intent and perseverance among final-year undergraduate students at South African universities.

1.6 Definition of terms

The following definitions have been adopted in this study:

- Entrepreneurship is the process of starting and running a new business venture (Venter, Urban, & Rwigema, 2010).
- Entrepreneurial intent is the level of one's personal commitment to set up a new business venture in the near future (Krueger, 1993; Thompson, 2009).
- An entrepreneur is a person who starts the entrepreneurial process (Venter, Urban, & Rwigema, 2010).
- Perseverance is a person's ability to continually put effort into a task, even when faced with numerous or consistent challenges (Markman & Robert, 2003; Duckworth, Peterson, Matthews, & Kelly, 2007).
- Grit is an individual's ability to persist and maintain interest with passion in the pursuit of long-term goals, even when faced with adversity (Maddi, Matthews, Kelly, Villarreal, & White, 2012).

1.7 Assumptions

For data collection purposes, final-year undergraduate students were targeted through modules designed for final-year students. Therefore, an assumption was made that any student doing a third-year module studying towards a three-year undergraduate degree was a final-year student. Likewise, any student doing a fourth-year module studying towards a four-year undergraduate degree was considered a final-year student.

CHAPTER 2: LITERATURE REVIEW

This study was aimed at determining if there is a relationship between entrepreneurial intent and perseverance. This chapter therefore investigates the need for entrepreneurship and the state of entrepreneurship in South Africa, discusses the two constructs “entrepreneurial intent” and “perseverance”, and develops hypotheses based on the literature.

2.1. Unemployment in South Africa

It is reported that South Africa has one of the highest levels of unemployment (Venter, Urban, & Rwigema, 2010) and inequality (Lebusa, 2011) in the world. South Africa’s unemployment rate in the first quarter of 2013 was estimated to be around 25% (Statistics South South Africa, 2013). Unemployed persons are defined by Statistics South Africa (2013) as follows:

> Unemployed persons are those (aged 15–64 years) who were not employed in the reference week and; actively looked for work or tried to start a business in the four weeks preceding the survey interview and; were available for work, i.e. would have been able to start work or a business in the reference week or; had not actively looked for work in the past four weeks but had a job or business to start at a definite date in the future and were available (p. xxii).

Figure 1 shows the change in total unemployment that took place over the period 2008–2013 in South Africa.

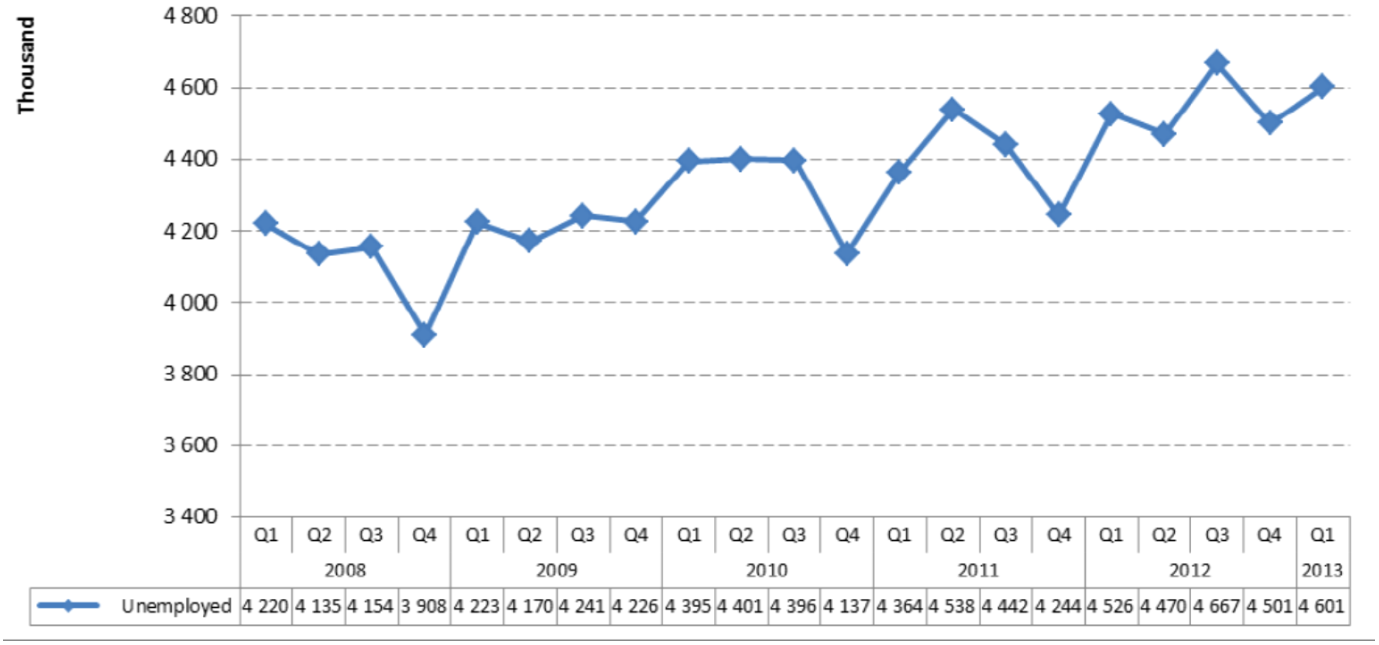


Figure 1: Total unemployment, quarter 1 of 2008 to quarter 1 of 2013

(Statistics South South Africa, 2013, p. viii)

Figure 1 illustrates that the lowest level of unemployment was recorded in quarter four of 2008, when unemployment stood at 3.9 million. The highest level of unemployment was recorded in the third quarter of 2012, where unemployment stood at 4.6 million. Despite the levels of unemployment dropping in some quarters within this time period, there has generally been an increase in unemployment (Statistics South South Africa, 2013).

This high level of unemployment is considered to be the main contributor to the high levels of poverty in the country (Venter, Urban, & Rwigema, 2010) and is one of the country's socio-economic challenges that call for urgent attention. Recently, there has been a huge focus on youth unemployment which is very high in South Africa (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012).

2.1.1 *Youth Unemployment*

The Global Entrepreneurship Monitor (GEM) report reported the youth unemployment rate in South Africa to be 48% (Turton & Herrington, 2013). Statistics South Africa (2013) reported that about 3.5 million young people aged

between 15 and 24 years of age were not employed, studying or involved in any sort of training (Statistics South South Africa, 2013).

Given this high unemployment rate in the country (Davies & Thurlow, 2010; Simrie, Herrington, Kew, & Turton, 2012; Statistics South South Africa, 2013), especially among the country's youth (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, Global Entrepreneurship Monitor 2011 South Africa, 2012), and all the associated negative socio-economic effects (Lebusa, 2011), it is believed that introducing and/or improving policies and programmes that have the potential to increase the number of people that pursue entrepreneurship as a career choice is very important (Simrie, Herrington, Kew, & Turton, 2012). It therefore comes as no surprise that there is a lot of focus on entrepreneurship and new venture creation by the South African government (Olufunso, 2010; Irma, 2011). The next section looks at the state of entrepreneurship in South Africa.

2.2. Entrepreneurship in South Africa

One of the South African government's main goals is to fight unemployment through job creation (Irma, 2011). Entrepreneurship is the process of starting and running a new business venture (Venter, Urban, & Rwigema, 2010). The GEM report uses the Total Early-stage Entrepreneurial Activity (TEA) index as a measure of entrepreneurial activity in the adult population between 18 and 64 years of age in an economy (Simrie, Herrington, Kew, & Turton, 2012).

Over the years South Africa has consistently displayed lower levels of entrepreneurial activity than other developing countries, and also in comparison to developed countries (Gird & Bagraim, 2008; Simrie, Herrington, Kew, & Turton, 2012). South Africa's TEA rate was reported to be around 7% in 2012, indicating a decrease of about 2% from the preceding year (Turton & Herrington, 2013). This is a below-average TEA rate (Turton & Herrington, 2013). Interestingly, South Africa displays the characteristics that are said to be favourable to business (Simrie, Herrington, Kew, & Turton, 2012).

The 7% TEA among South Africa's youth was the lowest among the participating sub-Saharan African countries in the survey, which included Angola, Botswana, Ethiopia, Ghana, Malawi, Namibia, Nigeria, Uganda and Zambia (Turton & Herrington, 2013). Furthermore, South Africa recorded one of the lowest youth-established business rates (1%), which was below the average of 8% in the participating countries.

The high levels of unemployment among South Africa's youth (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012; Turton & Herrington, 2013) and the low entrepreneurial activity among young people (Turton & Herrington, 2013) is a worrying combination. There is a clear need to increase entrepreneurial activity among South Africans and specifically young people. Is there an indication that the entrepreneurial activity rate in South Africa will improve in the near future? Entrepreneurial intentions are considered the best ways to measure future entrepreneurial activity (Choo & Wong, 2009; Venter, Urban, & Rwigema, 2010).

2.3. Entrepreneurial intent

It is believed that most people's intentions to start a new business are formed at least a year before the actual implementation, which suggests that there is a link between entrepreneurship and intentions (Henley, 2007). To better understand entrepreneurial intentions, one needs to look at and understand the theoretical foundation that supports this concept. Two well-known theories that form this foundation are Ajzen's theory of planned behaviour and Shapero's model of entrepreneurial intent (Venter, Urban, & Rwigema, 2010).

2.3.1 *Ajzen's theory of planned behaviour*

The theory of planned behaviour argues that entrepreneurial intention signifies the effort that the person will make to start a new business venture and therefore captures the motivational factors that influence this type of behaviour (Ajzen, 1991). According to Ajzen's Theory of Planned Behaviour (Ajzen, 1991;

Venter, Urban, & Rwigema, 2010), there are three motivational factors to this type of behaviour (see figure 2).

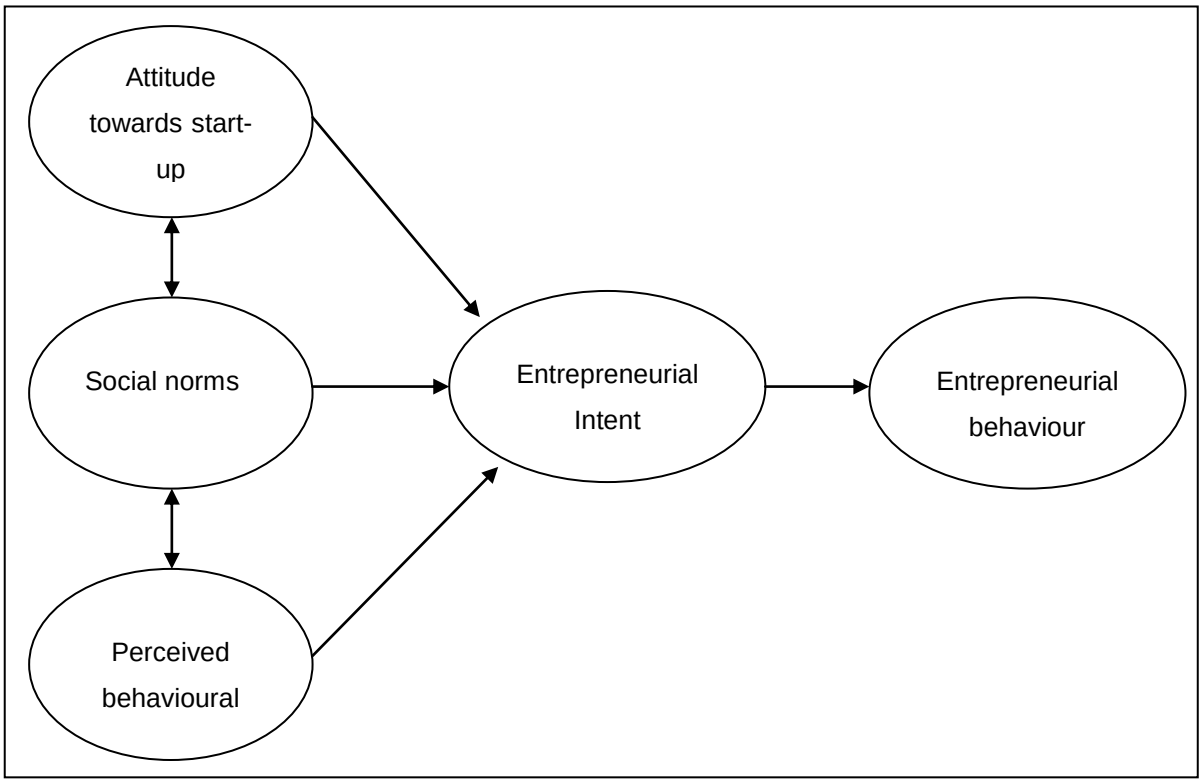


Figure 2: An illustration of Ajzen's Theory of Planned Behaviour (Autio, Keeley, Klofsten, Parker, & Hay, 2001, p. 147)

The motivational factors include attitude towards start-up, social norms and perceived behavioural control (Venter, Urban, & Rwigema, 2010).

1) A person's attitude to a start-up is the degree to which the person believes being an entrepreneur is a worthwhile career choice, based on his or her own appraisal of the behaviour (Ajzen, 1991; Erkko, Keeley, Magnus, Parker, & Hay, 2001; Venter, Urban, & Rwigema, 2010).
2) Social norms are the individual's perception of whether he or she will receive support from other people within their circle, or whether these people will approve of his or her decision to become an entrepreneur (Ajzen, 2001; Venter, Urban, & Rwigema, 2010). This therefore refers to the influences of social pressure (Erkko, Keeley, Magnus, Parker, & Hay, 2001).

3) Perceived behavioural control is the person's perception of how easy or difficult it is to become an entrepreneur (Venter, Urban, & Rwigema, 2010). This is different to self-efficacy, because perceived behavioural control includes the person's perception of the controllability of the behaviour and not just the feeling that he or she can manage (Ajzen, 2002).

The more favourable a person's social pressure, attitude towards start-ups and belief in how easy it is to become an entrepreneur or start a business, the greater that person's entrepreneurial intentions are said to be (Erkko, Keeley, Magnus, Parker, & Hay, 2001).

Shapero's model of entrepreneurial intent

On the other hand, Shapero's model of entrepreneurial intent explains entrepreneurial intent as a product of an individual's perceived desirability and self-efficacy (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Venter, Urban, & Rwigema, 2010) (see figure 3).

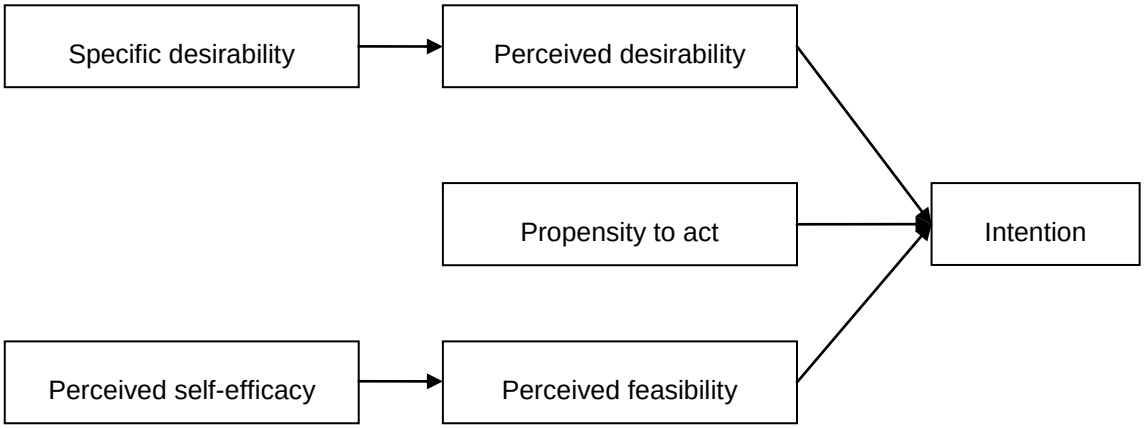


Figure 3: An illustration of Shapero's model of entrepreneurial intent
(Krueger, Reilly, & Carsrud, 2000, p. 418)

Perceived desirability in this model refers to how a person rates the attractiveness of starting a new venture, and perceived self-efficacy refers to the

extent to which a person believes he or she has the capability to start a new venture (Venter, Urban, & Rwigema, 2010). The more favourable a person's perceived desirability and self-efficacy, the greater the person's entrepreneurial intentions (Venter, Urban, & Rwigema, 2010). In addition, the model predicts that intentions will be influenced by previous entrepreneurial experiences (Autio, Keeley, Klofsten, Parker, & Hay, 2001).

The two models differ, in that Ajzen's Theory of Planned Behaviour emphasises the role of social norms while Shapero's model emphasises the role of previous experience (Autio, Keeley, Klofsten, Parker, & Hay, 2001). The next section looks at the entrepreneurial intentions of South Africans, based on past research.

2.3.2 *Entrepreneurial intentions in South Africa*

Intentional entrepreneurs are defined as people who intend to start a business in the next three years (Turton & Herrington, 2013). Entrepreneurial intentions are affected by demographic variables (Farrington, Venter, & Louw, 2012). South Africa's pool of intentional entrepreneurs is reported to be 14%, which in comparison to other efficiency-driven economies is below average (efficiency-driven economies recorded an average of 27%) (Turton & Herrington, 2013).

South Africa recorded the lowest rate of entrepreneurial intentions among its youth (15%), which was significantly below that of the participating sub-Saharan African countries which averaged 56% (Turton & Herrington, 2013). Olufunso (2010) found graduates in South Africa to have a low level of entrepreneurial intent, suggesting that students prefer to be employed than to start their own business ventures. Given the failure of the South African economy to absorb the increasing number of job seekers (Olufunso, 2010), this is worrying. On the other hand, in their study Sieger, Fueglistaller and Zellweger (2011) found university students in South Africa to have high levels of entrepreneurial intent.

Taking into account the low levels of entrepreneurial activity in South Africa (Simrie, Herrington, Kew, & Turton, 2012; Turton & Herrington, 2013), the low level of entrepreneurial activity among South Africa's youth (Turton &

Herrington, 2013) and the low entrepreneurial intentions reported among graduates (Olufunso, 2010), we hypothesise that entrepreneurial intentions among final-year South African university students are low.

Hypothesis 1: Entrepreneurial intentions among South African final-year students are generally low.

Entrepreneurial intentions are said to be higher in people who have a more positive attitude towards risk (Douglas & Shepherd, 2003). This is because it is well known that entrepreneurs encounter entrepreneurial risks (Zahra, 2005; Venter, Urban, & Rwigema, 2010) and challenges (Markman & Robert, 2003). In the next section, the entrepreneurial risks and/or entrepreneurial challenges entrepreneurs may face are discussed.

2.3.3 *Entrepreneurial challenges and risks*

Entrepreneurial risks

Entrepreneurship involves risk-taking (Douglas & Shepherd, 2003; Zahra, 2005). Risk can be defined as the chance of unwanted events occurring (Venter, Urban, & Rwigema, 2010). Venter, Urban and Rwigema (2010) point out that the risks entrepreneurs are exposed to include; financial risk, career risk, psychological risk and family and social risks.

Financial risk is the probability of the entrepreneur losing his or her investment in the case that the business does not perform well (Venter, Urban, & Rwigema, 2010). Entrepreneurial activities pose a risk because there is no complete guarantee of success (Zahra, 2005). Career risk is a situation in which an entrepreneur had abandoned a very good job in order to pursue an entrepreneurial career, and therefore risks failing to get a job as good as the one he or she had before should the business fail (Venter, Urban, & Rwigema, 2010). The psychological risk is the possible psychological damage that can result from business failure, such as self-doubt and gloating from family and friends (Venter, Urban, & Rwigema, 2010). This is made worse because the costs and risks of failure in business can be substantial (Zahra, 2005). Family

and social risk is the risk the entrepreneur takes as a result of spending more time dealing with business affairs and less time with family and friends (Venter, Urban, & Rwigema, 2010).

Entrepreneurial challenges

The Finscope South Africa Small Business Survey of 2010 identified three main challenges small business owners in South Africa face when trying to launch their businesses. The challenges are money-related, strategy-related and infrastructure and equipment (Irma, 2011).

The majority (39%) of the respondents in the study cited money-related challenges as the main ones they faced when trying to launch their business. Money-related challenges include sourcing start-up capital, cash-flow problems, managing debtors and poor financial records. Strategy-related challenges were cited by 34% of the respondents as the main challenge they faced when trying to launch their business. These challenges include too much competition, small customer base, difficulty deciding what products or services to trade, market segmentation, marketing to potential customers, and managing of stock. A minority (17%) of the respondents cited infrastructure and equipment as the main challenge they faced when trying to launch their business. These challenges include obtaining equipment, transportation of stock, obtaining business premises, and connecting water and electricity services (Irma, 2011).

Furthermore, the study identified challenges that small businesses in South Africa face as the owners tried to grow their businesses. The challenges that were most cited were access to space to operate the business in, access to and/or cost of finance, too much competition, crime and theft, transportation, electricity, and business licensing (Irma, 2011). The GEM report cited the high costs of commercial and physical infrastructure, low labour market efficiency, the dominance of large firms, and corruption as the challenges facing new businesses and small businesses that are trying to grow in South Africa (Turton & Herrington, 2013).

The literature shows that entrepreneurs encounter many challenges, and the capacity to respond adaptively and overcome these challenges is considered an

important advantage (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002). The personality trait associated with this type of behaviour is perseverance.

2.4. Perseverance

Perseverance can be defined as a person's ability to continually put effort into a task even when faced with challenges (Markman & Robert, 2003; Duckworth, Peterson, Matthews, & Kelly, 2007). Recently, grit has been proposed as a personality trait believed to be associated with perseverance (Eklund, Dowdy, Jones, & Furlong, 2011; Maddi, Matthews, Kelly, Villarreal, & White, 2012).

2.4.1 *Grit associated with perseverance*

"Grit" is an individual's ability to persist and maintain interest with passion in the pursuit of long-term goals even when faced with adversity (Duckworth, Peterson, Matthews, & Kelly, 2007; Maddi, Matthews, Kelly, Villarreal, & White, 2012).

People with a high level of grit are said to work tirelessly, even when faced with failure and adversity, until they achieve their goals (Maddi, Matthews, Kelly, Villarreal, & White, 2012; Reed, Pritschet, & Cutton, 2012). In contrast, people with low levels of grit tend to picture failure, adversity, and plateaus in their progress as a sign to stop and change direction (Duckworth, Peterson, Matthews, & Kelly, 2007; Maddi, Matthews, Kelly, Villarreal, & White, 2012; Reed, Pritschet, & Cutton, 2012). Research on grit also indicates that people high in grit are more passionate about their goals (Duckworth, Peterson, Matthews, & Kelly, 2007; Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013). As a result, grit is believed to be a good predictor of success in a wide range of careers (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2011; Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013).

Grit has two components, namely perseverance of effort and consistency of interest (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013) (see figure 4).

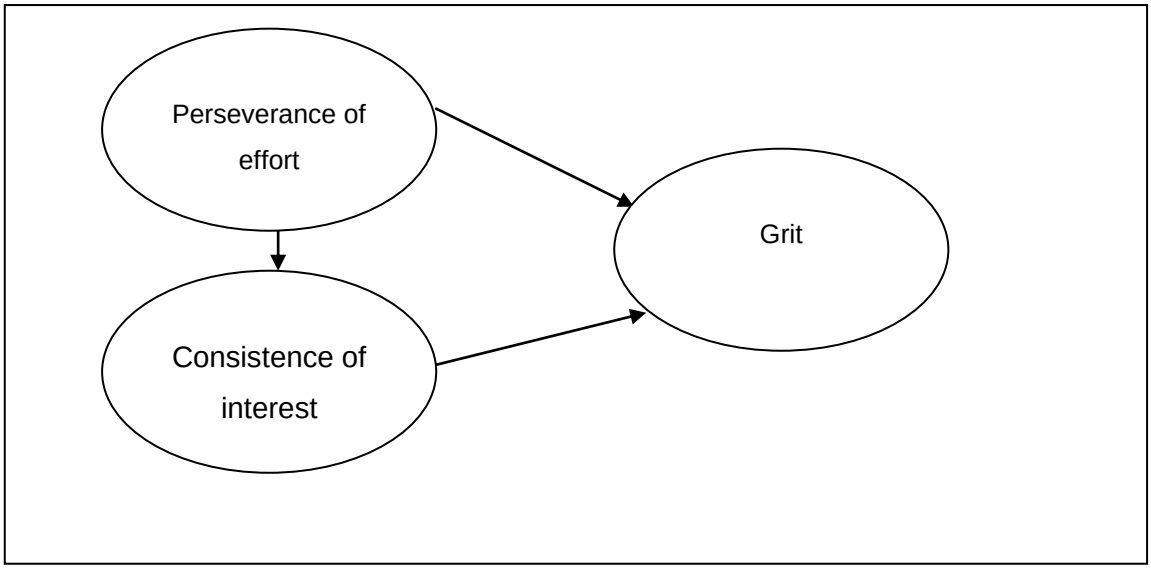


Figure 4: An illustration of the personality trait "grit" derived from theory
(Duckworth, Peterson, Matthews, & Kelly, 2007)

Perseverance of effort is an individual's ability to sustain effort even when faced with adversity (Duckworth, Peterson, Matthews, & Kelly, 2007). Therefore, perseverance of effort reflects an individual's commitment towards one specific goal (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013). It is believed that perseverance predicts that the person will put higher effort into the task at hand due to a tendency to take goals seriously (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013). Consistency of interests, on the other hand, is the person's ability to maintain interest over a long period of time (Duckworth, Peterson, Matthews, & Kelly, 2007).

Grit is different from the need for achievement and self-efficacy (Reed, Pritschet, & Cutton, 2012). People with a high need for achievement "strive for manageable goals that allow for immediate feedback, but those high in grit deliberately set long-term objectives" (Reed, Pritschet, & Cutton, 2012, p. 613) and "do not swerve from them even in the absence of feedback" (Reed, Pritschet, & Cutton, 2012, p. 613). Grit differs from self-efficacy in that self-efficacy refers to the extent to which a person believes in his or her capabilities to manage and successfully perform a given task (Markman & Robert, 2003; Venter, Urban, & Rwigema, 2010) and grit looks at a person's long-term interest

and ability to persist in order to complete a given task (Reed, Pritschet, & Cutton, 2012).

The underlying assumption of this research was that perseverance influences a person's course of action (Eisenberger & Leonard, 1980) and is one of the motivating factors that are necessary for entrepreneurship, as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). This suggests a possible positive relationship between the two constructs "entrepreneurial intent" and "perseverance". A study by Mangundjaya (2009, October) found no significant relationship between perseverance (measured using Adversity Quotient) and entrepreneurial intent among university students in Indonesia. However, there was a significant relationship found between perseverance and entrepreneurial intent among employees. Adversity Quotient is defined as an individual's ability to persevere and persist when faced with an unfavourable event (Phoolka & Kaur, 2012).

Taking into account the low levels of entrepreneurial activity in South Africa (Simrie, Herrington, Kew, & Turton, 2012; Turton & Herrington, 2013), the low level of entrepreneurial activity among South Africa's youth (Turton & Herrington, 2013), and the low entrepreneurial intentions reported among graduates (Olufunso, 2010), this suggests that people in South Africa may be lacking the motivating factor or inner drive which influences a person's course of action (perseverance) to engage in entrepreneurial activities. Based on the literature, the following hypotheses were derived:

> ***Hypothesis 2: Perseverance among South African final-year students is generally low.***
>
> ***Hypothesis 3: There is a positive correlation between entrepreneurial intent and perseverance.***

Considering that entrepreneurship involves many repeated challenges (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002), it is important for future entrepreneurs to be well equipped to tackle these challenges. Entrepreneurship education is considered to be the answer (Kirby, 2004).

2.5. Entrepreneurship education

In recent years, there has been a rapid growth in entrepreneurship education in many countries, including South Africa (Venter, Urban, & Rwigema, 2010). Different entrepreneurship programmes with varying objectives have been developed and implemented. Some entrepreneurship programmes aim at creating awareness and participation, some aim to develop competences in entrepreneurship, and others focus on small business management (Kirby, 2004). Shane (2009) suggests that countries should focus on the quality and not the quantity of entrepreneurs. Quality entrepreneurs create high-quality businesses capable of growing and creating many jobs (Shane, 2009; Venter, Urban, & Rwigema, 2010), because well-educated entrepreneurs are more likely to pursue opportunity-based ventures (Venter, Urban, & Rwigema, 2010). It is therefore important to look at what makes a quality entrepreneur.

The model of person-entrepreneurship fit (Markman & Robert, 2003) suggests that some people are more successful as entrepreneurs than others because their personal characteristics better match the characteristics required to be an entrepreneur. The characteristics required to be an entrepreneur include self-efficacy, ability to recognise opportunities, perseverance, human capital, social capital, and social skills (Markman & Robert, 2003; Venter, Urban, & Rwigema, 2010; Urban, 2011).

Self-efficacy is defined as the extent to which a person believes in his or her capabilities to manage and successfully perform a given task (Markman & Robert, 2003; Venter, Urban, & Rwigema, 2010). Opportunity recognition is a person's ability to identify great opportunities embedded in the environment (Markman & Robert, 2003). Perseverance can be defined as a person's ability to continually put effort into a task even when faced with challenges (Markman & Robert, 2003; Duckworth, Peterson, Matthews, & Kelly, 2007). Human capital is the combination of an individual's intellectual, social and emotional capital (Urban, 2011). Human capital therefore includes abilities that are influenced to some extent by genetic factors, like intelligence and character (Markman & Robert, 2003), as well as skills developed through education, job training, and work experience (Venter, Urban, & Rwigema, 2010; Markman & Robert, 2003).

Finally, social capital is the opportunities or goodwill available to the entrepreneur enabled by social structure (Markman & Robert, 2003; Urban B. , 2011). Therefore, In order to develop better entrepreneurs, business schools need to develop the skills, attributes and behaviours of successful entrepreneurs in their students (Kirby, 2004).

2.6. Definitions of the constructs

The paper focuses on the two constructs “entrepreneurial intent” and “grit”. The paper adopts the following definitions:

- Entrepreneurial intent is the level of one’s personal commitment to setting up a new business venture in the near future (Krueger, 1993; Thompson, 2009).
- Grit is an individual’s ability to persist and maintain interest with passion in the pursuit of long-term goals even when faced with adversity (Maddi, Matthews, Kelly, Villarreal, & White, 2012).

2.7. Conclusion of Literature Review

There is a high level of unemployment in South Africa, especially among the youth, and very low entrepreneurial activity among the adult and youth population in comparison to other countries (Gird & Bagraim, 2008; Simrie, Herrington, Kew, & Turton, 2012; Turton & Herrington, 2013). Considering the economy’s inability to absorb the growing labour force (Olufunso, 2010), this is a cause for concern and indicates the need for entrepreneurship in South Africa.

Entrepreneurial intentions are regarded as one of the best predictors of actual entrepreneurial behaviour (Choo & Wong, 2009; Venter, Urban, & Rwigema, 2010). South Africa’s pool of intentional entrepreneurs is very low and South Africa has also been reported to have the lowest rate of entrepreneurial intentions among its youth compared to other sub-Saharan countries (Turton & Herrington, 2013). This shows that entrepreneurial activity in South Africa is

very unlikely to improve significantly in the near future without an intervention. Entrepreneurship education is considered a possible solution to this problem.

Entrepreneurship education is seen as a tool that can help increase both the number and quality of entrepreneurs in the country (Venter, Urban, & Rwigema, 2010). To increase the quality of entrepreneurs, there is a need to train and develop aspiring entrepreneurs to possess the skills, attributes and behaviours that characterise a successful entrepreneur (Kirby, 2004). This training could help develop high-quality entrepreneurs capable of establishing businesses with the potential for high growth and job creation.

The following hypotheses were derived from the literature review:

> Hypothesis 1: Entrepreneurial intentions among South African final-year students are generally low.
>
> Hypothesis 2: Perseverance among South African final-year students is generally low.
>
> Hypothesis 3: There is a positive correlation between entrepreneurial intent and perseverance.

CHAPTER 3: RESEARCH METHODOLOGY

The following section outlines the methodology that was followed to address the main problem identified in the study, which was to determine if there is a relationship between entrepreneurial intent and an individual's ability to persevere in the face of adversity.

3.1 Research methodology

The research is a correlational study which describes both the levels of the two constructs, entrepreneurial intent and grit, and the relationship between them. The methodology which has been adopted to address the proposed hypotheses is quantitative research. The quantitative approach was used because previous research on entrepreneurial intent has been quantitative (Olufunso, 2010; Thompson, 2009) and studies on grit have also been quantitative (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2011; Reed, Pritschet, & Cutton, 2012).

The proposed research makes use of descriptive statistics for the measures of the two constructs to address sub-problem 1 (analyse the level of entrepreneurial intent among final-year university students in South Africa) and sub-problem 2 (analyse the level of perseverance among final-year university students in South Africa); correlational statistics were used to address sub-problem 3 (determine if there is a relationship between entrepreneurial intent and perseverance).

3.2 Research design

The methodological approach that was adopted for the proposed research was a cross-sectional survey using questionnaires. A cross-sectional survey is a research method that collects data on a defined population at one point in time, where the population differs in the variable of interest (Mann, 2003; Cooper & Schindler, 2011; Bryman, 2012). Cross-sectional studies are the best way to determine prevalence (Mann, 2003) and can contain several dependent and

independent variables (Bryman, 2012). The most important advantages of this type of study are that it is quick and relatively cheap, because the data is collected at one point in time and requires no follow-ups (Mann, 2003). However, a disadvantage of this type of study is that it does not make a distinction between cause and effect (Mann, 2003).

Past research used self-administered questionnaires in measuring entrepreneurial intent (Thompson, 2009; Olufunso, 2010) and grit (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2011; Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013). Therefore, this research used a self-administered questionnaire. Questionnaires have the advantage that they are cost-effective and can be used when targeting a large sample size, but have the disadvantage of producing low response rates (Mann, 2003).

3.3 Population and sample

3.3.1 Population

The population that was targeted for the study was final-year undergraduate students from universities in South Africa. The population of this study is found in higher education (HE) in South Africa, which consists of 23 public universities, 11 traditional universities, six comprehensive universities and six universities of technology with a total of approximately 936 837 students (Higher Education South Africa, 2012). According to HESA (2012), approximately 8% of the students enrolled at these universities are international students.

Final-year undergraduate students were selected because they are believed to be at the stage of deciding, or may already have decided, on the career path they would like to take (Ahmed, et al., 2010).

3.3.2 Sample and sampling method

The original procedure was to request all the universities, through their different faculties, to forward a link to the online questionnaire to all their final-year undergraduate students. However, this proved to be a long process and due to

time limitations the researcher was unable to follow this procedure. The researcher was only able to conduct the research at one university in the Gauteng province, and therefore used a convenient sample.

A total of 400 questionnaires were distributed, of which 240 were returned (response rate = 60%). The researcher chose to exclude all data that had missing values, and therefore a total of 223 questionnaires were deemed acceptable and valid (n=223).

3.4.1 *Entrepreneurial intent scale*

The research adopted a self-rating questionnaire called the Individual Entrepreneurial Intent Scale (IEIS) developed by Thompson (2009) as the research instrument to measure entrepreneurial intent. The instrument requests the respondents to rate themselves by stating how well a number of statements describe them. The instrument uses a six-point Likert scale, with 1 meaning “very untrue” and 6 “very true” (for the actual instruments see Appendix A).

Table 1 shows the questions the instrument uses. Questions 2, 3, 5, and 8 are distracter items and are therefore not used in the calculation of the total entrepreneurial intent score, while questions 4, 7 and 9 are reverse items. The entrepreneurial intent score is calculated as the average score of questions 1, 4, 6, 7, 9 and 10 (Thompson, 2009). The reliability data of this instrument is presented under the “Validity and Reliability of the instruments” section.

Table 1: Individual Entrepreneurial Intent Scale Questions

IEIS Questions
1. Intent to set up a company in the future
2. Plan your future carefully
3. Read business newspapers
4. Never search for business start-up opportunities (R)
5. Read financial planning books

6. Are saving money to start a business
7. Do not read books on how to set up a firm (R)
8. Plan your finances carefully
9. Have no plans to launch your own business (R)
10. Spend time learning about starting a firm

Source: (Thompson, 2009).

3.4.2 *Grit*

The research instrument that was used in the study to measure perseverance is a standardised tool called the Short Grit Scale (Grit-S), which was developed and validated by Duckworth and Quinn (2009). The scale is used to measure an individual's ability to persist and maintain interest with passion in the pursuit of long-term goal even when faced with adversity (Duckworth, Peterson, Matthews, & Kelly, 2007; Maddi, Matthews, Kelly, Villarreal, & White, 2012).

The Grit-S uses a five-point Likert scale, with 1 meaning "not at all like me" and 5 meaning "very much like me" (for the actual instrument see Appendix A). Some of the questions measure the individual's ability to persist in a long-term goal (persistence of effort) while some measure the individual's ability to maintain interest (consistence of interest) over a long period of time, as shown in table 2.

Table 2: Questions measuring perseverance of effort and consistence of interest

Perseverance of effort	**Consistence of interest**
New ideas and projects sometimes distract me from previous ones	Setbacks don't discourage me
I have been obsessed with a certain idea or project for a short time but later lost interest	I am a hard worker

I often set a goal but later choose to pursue a different one	I finish whatever I begin
I have difficulty maintaining my focus on projects that take more than a few months to complete	I am diligent

Source: (Duckworth & Quinn, 2009)

The Grit-S score is calculated as the average score of all eight items (Reed, Pritschet, & Cutton, 2012). The validity and reliability of the instrument are presented in the next section.

3.4.3 *Validity and reliability of the instruments*

The IEIS was chosen as the preferred measure of entrepreneurial intent because the instrument was considered to be a reliable, internationally applicable scale (Thompson, 2009), while the Grit-S was chosen as the preferred measure of grit because it is reported to be reliable, and more so than the original 12-item grit scale (Duckworth & Quinn, 2009).

There are two components of validity, namely convergence and discriminant validity (Williams, 2003; Santos, 2012). It is believed that validity is the most important feature to look for in a standardised instrument (Williams, 2003). The first component of validity is convergence. Convergence validity states that an instrument is valid if it measures what it is intended to measure (Grandy, 2009). Thompson (2009) reported that after a number of studies across different countries the IEIS demonstrated good convergence validity. The grit scale has also been reported to effectively measure perseverance and consistency of interest (Duckworth, Peterson, Matthews, & Kelly, 2007; Duckworth & Quinn, 2009).

Discriminant validity states that two different scales with different names should measure different things (Santos, 2012). In other words, an instrument is valid if

it does not any measure traits, knowledge, or a skill other than those it was designed to measure (Grandy, 2009). According to Duckworth et al. (2007) and Duckworth and Quinn (2009), the Grit-S has been used a number of studies and the results showed that the instrument is a valid measure of perseverance and consistence of interest (Duckworth & Quinn, 2009), while the IEIS is also reported to be a reliable instrument to measure entrepreneurial intent (Thompson, 2009).

Another necessary psychometric property is reliability. Reliability is the level of consistency with which something is measured, and is divided into internal and external reliability (Grandy, 2009; Williams, 2003). Internal reliability is the consistency of answers to all questions within a scale (Grandy, 2009). According to Duckworth and Quinn (2009), the Grit-S has a good internal reliability based on Cronbach's coefficient. The instrument has been shown to be reliable, with internal consistency alpha (α) ranging between .73 and .83 (Duckworth & Quinn, 2009; Reed, Pritschet, & Cutton, 2012), while the IEIS is reported to have a good internal reliability based on Cronbach's alpha of .89 (Thompson, 2009).

3.4 Procedure for data collection

The researcher distributed the questionnaires in hard copy in lectures and tutorial sessions which the researcher had permission to attend. Paper-based self-administered questionnaires were used because both lecturers and tutors preferred them to an online link, distribution and collection within a classroom setting were easy. The researcher requested the lecturers and tutors to ask the students to participate in the study, but they were informed that participation was voluntary. The researcher attached a letter to the actual instrument introducing himself, explaining the purpose of the survey, and assuring the participants of confidentiality (see Appendix A).

The researcher targeted students attending lectures and tutorials that were intended for final-year students. The questionnaires were distributed at the start

of the lecture or tutorial and were collected at the end. The data was collected in November 2014.

Table 3 shows the questions that were asked in order to collect demographic data on the respondents relating to their gender, age group, field of study, entrepreneurial activity, and family entrepreneurial activity.

Table 3: Demographics questions

Question	Respondent's answer options
What is your gender?	1) Male 2) Female
Which age group do you fall in?	1) 16 and below 2) 17 to 19 3) 20 to 22 4) 23 to 25 5) 26 and above
What is your field of study?	6) Entrepreneurship 7) Economics and management sciences (except entrepreneurship) 8) Education 9) Engineering, Built Environment and IT 10) Health Sciences 11) Humanities 12) Law 13) Natural and Agricultural sciences 14) Theology 15) Others
Have you ever started and run a business before?	1) Yes 2) No
Do any of your family members own a business?	1) Yes 2) No

Source: (Author, 2014)

For the actual instrument see appendix A.

3.5 Data analysis and interpretation

The questionnaires collected in hard copy were captured in Excel. Questionnaires that were not complete were considered unacceptable and were discarded. The data collected using the entrepreneurial intent scale had reverse items, which were reversed in Excel. Once the data was ready for analysis, it was imported into IBM SPSS Statistics software version 21. The proposed research was subject to the following analysis:

1. Examining the validity (factor structure) using exploratory factor analysis of the IEIS items, analysis of the reliability (Cronbach's alpha) of the IEIS and analysis of the overall means scores on the IEIS by examining the distributions and summary statistics of the mean scores.

2. Examining the validity (factor structure) using exploratory factor analysis of the grit items, analysis of the relationship between the sub-scales of grit, analysis of the reliability (Cronbach's alpha) of the Grit scale and subscales, and analysis of the overall means scores on the Grit scale by examining the distributions and summary statistics of the mean and sub-scores of grit.

3. Determining if there is a significant relationship between entrepreneurial intent and Grit by performing a bivariate correlation analysis.

3.5.1 *Analysis and Interpretation of the data*

1. Examining the validity (factor structure) using exploratory factor analysis of the IEIS items, analysis of the reliability (Cronbach's alpha) of the IEIS and analysis of the overall means scores on the IEIS by examining the distributions and summary statistics of the mean scores.

The IEIS uses a six-point Likert scale with 1 meaning “very untrue” and 6 “very true”. An individual’s entrepreneurial intent score is the average score of all items excluding the distracter items (Thompson, 2009). The highest mean score possible is therefore 6 and the lowest mean score obtainable is 1 (Thomas-Sharksnas, 2002). The researcher has chosen to interpret the overall mean scores of the scale, as shown in table 4:

Table 4: Interpretation of the entrepreneurial intent scores

Score	Interpretation
Below 5	Lower level of entrepreneurial intent
Equal to or greater than 5	High level of entrepreneurial intent

Source: (Author, 2014)

The rating of 5 in the scale represents “true” and 6 represents “very true” (Thompson, 2009). As a result the overall mean score of 5 and above was considered to represent a higher level of entrepreneurial intent.

2. Examining the validity (factor structure) using exploratory factor analysis of the Grit items, analysis of the relationship between the sub-scales of grit, analysis of the reliability (Cronbach’s alpha) of the Grit scale and sub-scales, and analysis of the overall means scores on the Grit scale by examining the distributions and summary statistics of the mean and sub-scores of Grit.

The Grit-S uses a five-point Likert scale with 1 meaning “not at all like me” and 5 meaning “very much like me”. It contains eight questions, of which four are for perseverance and the other for consistency (Duckworth & Quinn, 2009). The Grit-S score is calculated as the average score of all the eight items by adding up all the scores and dividing them by eight (Duckworth & Quinn, 2009). The maximum score a person can obtain is 5, which means he or she is extremely gritty, and the lowest possible score is 1, which means he or she is not gritty at all (Duckworth, Peterson, Matthews, & Kelly, 2007; Duckworth & Quinn, 2009).

The researcher has chosen to interpret the overall mean scores of the scale, as shown in table 5:

Table 5: Interpretation of the grit scores

Score	Interpretation
Below 4	Lower level of grit
Equal to or greater than 4	High level of grit

Source: (Author, 2014)

The rating of 4 represents “mostly like me” and the rating of 5 represents “very much like me (Duckworth & Quinn, 2009). As a result, the mean scores of 4 and above were considered to represent a higher level of grit.

3. Determining if there is a significant relationship between entrepreneurial intent and grit by performing a bivariate correlation analysis.

A bivariate correlation analysis was carried out to determine if there is an empirical relationship between the two constructs, entrepreneurial intent and grit.

3.6 Limitations of the study

Four possible limitations were identified in this study. The first limitation is that since the study was conducted at only one university; care must be taken in generalising the results to all final-year South African university students. Secondly, a potential weakness of the proposed study is the fact that the study relies on a self-rating questionnaire to measure grit. The grit scale is fairly transparent and therefore more susceptible to social desirability bias (Duckworth, Peterson, Matthews, & Kelly, 2007). Thirdly, the grit scale requires the respondents to reflect on their past and a case can be made that grit makes the assumption that past behaviour predicts future behaviour (Duckworth, Peterson, Matthews, & Kelly, 2007). Lastly, the instruments do not have a standard criterion for determining which scores are considered to be low, or high levels of grit and entrepreneurial intentions. As a result, the interpretations

of the scores are based on criteria chosen by the researcher (see tables 4 and 5) which may yield different findings.

3.7 Validity and reliability of the research

3.7.1 External validity

External validity refers to the degree to which the proposed study, based on its selected sample frame, can be generalised to represent the whole population (Malhotra & Birks, 2007). Since the study was carried out at only one university among final-year students who have been exposed to the university's location for at least three years, this may mean that students in other locations have different attitudes to entrepreneurial intent. This is because entrepreneurial intent is said to be affected by demographic variables (Farrington, Venter, & Louw, 2012). However, because the students come from different parts of the country, this effect may be minimal.

3.7.2 Internal validity

Internal validity refers to whether the conclusions that can be drawn about an experimental relationship are actually true (Malhotra & Birks, 2007; Cooper & Schindler, 2011). The proposed research does not make use of an experimental treatment and therefore cannot have a good internal validity.

3.7.3 Reliability

The proposed research is replicable in a consistent manner, as IEIS is considered to be a reliable internationally applicable scale (Thompson, 2009). The Grit-S has been used on different groups of people and has proven to be reliable in all groups (Duckworth & Quinn, 2009).

CHAPTER 4: PRESENTATION OF RESULTS

The following section presents and describes the results found in the study. The reliability and validity of the study are first discussed, followed by a presentation of the results pertaining to demographics, Hypothesis1, Hypothesis 2, Hypothesis 3, and a conclusion to the chapter.

4.1 Reliability and validity

4.1.1 *Grit-S*

Cronbach's alpha was used to measure the internal consistence reliability. Based on Cronbach's alpha, internal consistence was α=.57 for perseverance of effort, α=.73 for consistence of interest and α =.71 for the full grit scale. The internal consistence sub-scale did not meet the minimum 0.6 level of alpha which is considered to be a sufficient reliability level (Hair, Anderson, Tatham, & Black, 1998).

A factor analysis was conducted and the correlation matrix (see Appendix B) that was obtained for the perseverance of effort revealed that the item "setbacks don't discourage me" showed a weak positive correlation with the other three items. Based on the criterion that a value of and below .30 is weak and unacceptable for the purpose of item-correlation analysis (Nunnally & Bernstein, 1994), this item was considered unacceptable and was therefore removed. As a result, the new Cronbach's alpha for the perseverance of effort was α=.73.

The correlation matrix for the consistence of interest (see Appendix B) showed that all the items were positively correlated and acceptable. The new Cronbach's alpha was α =.75 for the full scale. Table 6 shows that the two sub-scores of grit, entrepreneurial intent and perseverance, have a strong positive significant relationship based on Pearson's correlation, Pearson's r (223) =0.90, p<.05.

Table 6: Correlation between perseverance of effort and consistence of interest

		Perseverance of effort	Consistence of interest
Perseverance of effort	Pearson Correlation	1	.902**
	Sig. (2-tailed)		.000
	N	223	223
Consistence of interest	Pearson Correlation	.902**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

Source: IBM SPSS Statistics software version 21

4.1.2 *Individual Entrepreneurial Intent Scale (IEIS)*

The 10-item IEIS showed an internal reliability of α=.76 and α =.74 if distracter items were excluded. A factor analysis was conducted on the scale excluding the distracter items. The correlation matrix showed a good item correlation (see Appendix B), based on the criterion that a value of and less than .30 is weak and unacceptable for the purpose of item-correlation analysis (Nunnally & Bernstein, 1994).

4.2 Demographic profile of respondents

5.2.1 *Gender*

Figure 5 illustrates that of the 223 respondents, 91 (41%) were male and 132 (59%) were female.

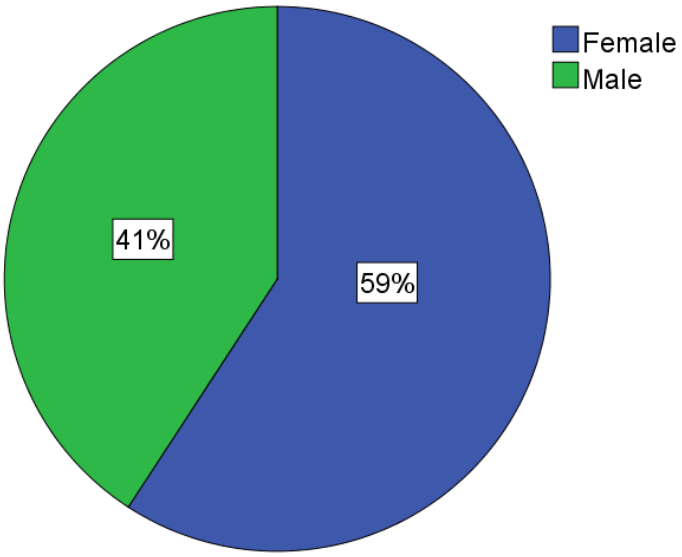


Figure 5: Gender of respondents

5.2.2 *Age groups*

As illustrated in figure 6, 176 students (a majority of 79%) were in the age group of 21 to 23 years old.

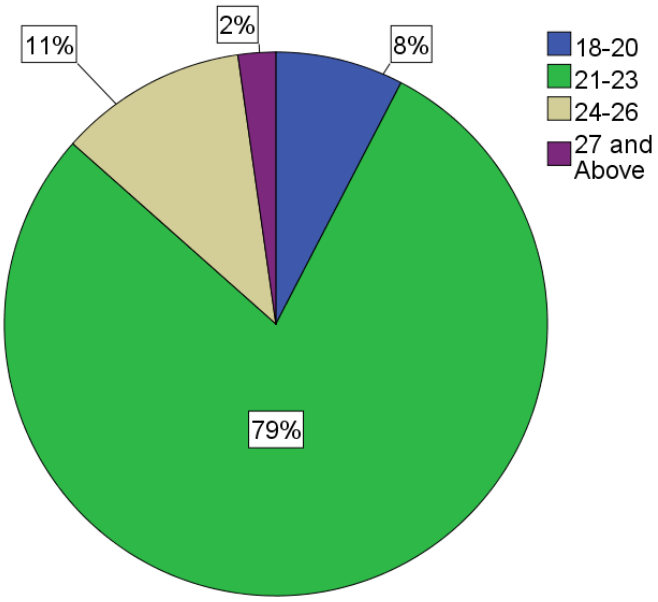


Figure 6: Age groups of respondents

5.2.3 *Fields of study*

In terms of fields of study, as illustrated by figure 7, 89 (40%) of the students were in the Natural and Agricultural Sciences, with the Humanities faculty having the lowest representation.

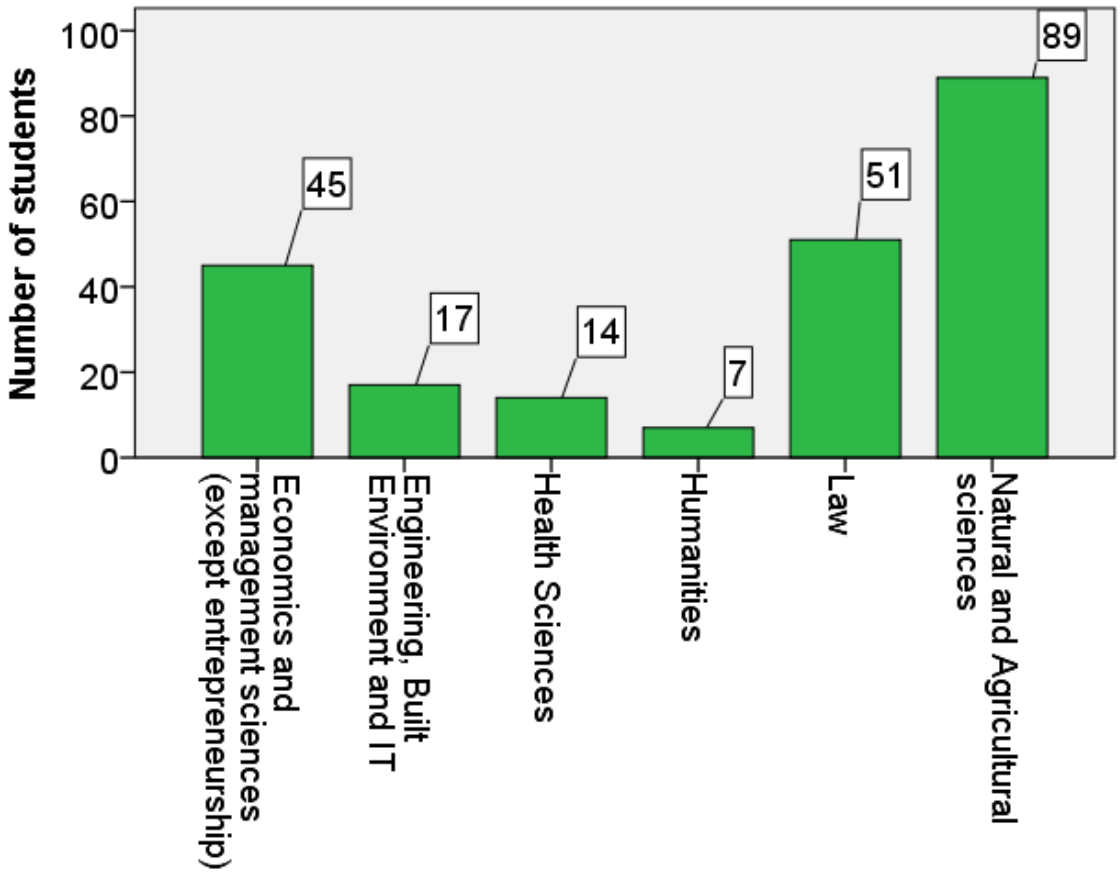


Figure 7: Fields of study

The study targeted students from all fields of study, but we were not able to include students in the Theology department and students majoring in Entrepreneurship.

5.2.4 *Entrepreneurial activity*

Table 5 shows that 168 (a majority of 75%) of the students had never started and run a business at the time the study was conducted.

5.2.5 *Family entrepreneurial activity*

Table 5 further shows that 152 (a majority 68%) students had a family member who owns a business.

Table 7: Profile of respondents

	Frequency	Percentage
Entrepreneurial activity		
Have started and run a business before	55	25
Have never started and run a business before	168	75
Family entrepreneurial activity		
One or more of my family member(s) owns a business	71	32
None of my family members owns a business	152	68

Source: IBM SPSS Statistics software version 21

4.3 Results pertaining to Hypothesis 1: Entrepreneurial intentions among South Africa final-year students are generally low.

Descriptive statistics of the overall entrepreneurial intent score and scores on each item on the scale that the students obtained are supplied in table 8. The

level of entrepreneurial intent among the students averaged 3.51 (*M*=3.51, *SD*=1.07) on a six-point Likert scale.

Table 8: Overall score and individual item scores of the respondents on entrepreneurial intent

	n	mean	Std.Dev.	Skewness	Kurtosis
Entrepreneurial intent	223	3.51	1.07	−.11	−.08
I intend to set up a company in the future	223	3.48	1.64	−.88	−.45
I plan my future carefully	223	4.75	1.10	−.81	.49
I read business newspapers	223	3.24	1.50	.08	−.94
I never search for business start-up opportunities	223	3.44	1.66	.06	−1.16
I read financial planning books	223	2.74	1.52	.48	−.84
I am saving money to start a business	223	2.39	1.45	.93	−.07

I do not read books on how to set up a firm	223	3.55	1.77	−.04	−1.40
I plan my finances carefully	223	4.38	1.42	−.75	−.22
I have no plans to launch my own business	223	4.41	1.68	−.80	-.63
I spend time learning about starting a firm	223	2.77	1.54	.53	−.82

Source: IBM SPSS Statistics software version 21

Based on the criteria set out in table 4, the students have a low level of entrepreneurial intent. Therefore, Hypothesis 1 was accepted.

The normal Q-Q plot (see Appendix D) shows that the entrepreneurial intent scores are normally distributed as the data is close to the diagonal line.

4.4 Results pertaining to Hypothesis 2: Perseverance among South African final-year students is generally low.

Perseverance among South African final-year students is generally low. Table 9 shows the overall grit score and sub-scores the students obtained.

Table 9: Overall grit scores and sub-scores of the respondents

	n	**mean**	**Std.Dev.**	**Skewness**	**Kurtosis**

Grit	223	3.61	0.69	−.11	−.18
Perseverance of effort	223	4.02	0.79	−.96	1.13
Setbacks don't discourage me	223	3.34	1.18	−.16	−.91
I am a hard worker	223	4.12	.95	−1.10	1.00
I finish whatever I begin	223	3.84	1.04	−.75	.11
I am diligent	223	4.10	.94	−.99	.78
Consistence of interest	223	3.85	0.68	−.82	.93
New ideas and projects sometimes distract me from previous ones	223	3.29	1.11	−.10	−.59
I have been obsessed with a certain idea or project for a short	223	3.22	1.21	−.22	−.92

time but later lost interest					
I often set a goal but later choose to pursue a different one	223	3.45	1.10	−.33	−.78
I have difficulty maintaining my focus on projects that take more than a few months to complete	223	3.25	1.23	−.30	−.84

Source: IBM SPSS Statistics software version 21

The level of grit among the students averaged 3.61 (*M*=3.61, *SD*=0.69) on a five-point Likert scale. The respondents scored higher on consistence of interest (*M*=3.85, *SD*=0.68) than on perseverance of effort (*M*=3.30, *SD*=0.86). The results indicate that the students have a low level of grit as per the criteria set out in table 5. Therefore, Hypothesis 2 was accepted.

The normal Q-Q plot (see Appendix D) shows that the grit scores are normally distributed as the data is close to the diagonal line.

4.5 Results pertaining to Hypothesis 3: There is a positive correlation between entrepreneurship and perseverance.

A bivariate correlation analysis was carried out to test if there was an empirical relationship between the two constructs of entrepreneurial intent and perseverance. Table 10 shows the correlation matrix that was obtained between grit (measure of perseverance) and entrepreneurial intent.

Table 10: Correlation matrix for grit and entrepreneurial intent

		Grit score	Entrepreneurial Intent score
Grit score	Pearson Correlation	1	.078
	Sig. (2-tailed)		.248
	N	223	223
Entrepreneurial Intent score	Pearson Correlation	.078	1
	Sig. (2-tailed)	.248	
	N	223	223

Source: IBM SPSS Statistics software version 21

The students' level of grit did not correlate significantly with their level of entrepreneurial intent: Pearson's r (223) =0.08, p >. 05. The scatter plot (see Appendix C) summarises the lack of a relationship between the two constructs of entrepreneurial intent and grit. Therefore, Hypothesis 3 was rejected.

4.6 Summary of the results

The respondents scored 3.51 (*M*=3.51, *SD*=1.07) on a six-point Likert entrepreneurial intent scale. This score was interpreted as being a low level of entrepreneurial intent and therefore there was support for Hypothesis 1, which posited that entrepreneurial intentions among South African final-year students are generally low.

In terms of grit, the level of grit among the students was found to be 3.61 (*M*=3.61, *SD*=0.69) on a five-point Likert scale. This score was interpreted as being a low level of grit, meaning there was support for Hypothesis 2, which posited that perseverance among South African final-year students is generally low. The respondents scored higher on perseverance of effort (*M*=4.02, *SD*=0.79) than on consistence of interest (*M*=3.85, *SD*=0.68).

There was no significant linear relationship found between the two constructs of entrepreneurial intent and grit, Pearson's r (223)=0.08, p>.05, meaning there is

no support for Hypothesis 3 that posited that there is a significant relationship between entrepreneurial intent and perseverance.

CHAPTER 5: DISCUSSION OF THE RESULTS

The following section discusses and explains the results found in the study. The section is divided into five parts. The first part is a discussion of the demographic profile of the respondents. The second part discusses the findings pertaining to the construct of entrepreneurial intent, followed by a discussion of the results pertaining to perseverance. The fourth part discusses the relationship between entrepreneurship intent and perseverance. The last part concludes the section.

5.1 Demographic profile of respondents

The study aimed to target students from many different universities in the country. However, due to a limitation of time, the study population consisted of final-year undergraduate students from one university in the Gauteng region. For the purposes of anonymity, the name of university in question is withheld. The majority of the students (79%) were in the age group of 21 to 23 years old, (75%) had never started and run a business before and the majority (68%) had a family member who owns a business. The results show that some of the final-year students have been exposed to an entrepreneur who is a family member. The results also show that there is some entrepreneurial activity among final-year undergraduate students in South Africa.

5.2 Discussion of Hypothesis 1: Entrepreneurial intentions among South African final-year students are generally low.

The respondents in the study obtained an entrepreneurial intent average score of 3.51. This score was interpreted as being a low level of entrepreneurial intent and therefore that entrepreneurial intentions among South African final-year students are low.

This finding supports the finding that South Africa has a very low rate of entrepreneurial intentions among its youth compared to other sub-Saharan African countries, including Angola, Botswana, Ethiopia, Ghana, Malawi, Namibia, Nigeria, Uganda and Zambia (Turton & Herrington, 2013). The finding is also similar to that of Olufunso (2010), who studied the entrepreneurial intentions of students in South Africa. Olufunso (2010) found the entrepreneurial intentions among final-year undergraduate and postgraduate students in South Africa to be very low.

The finding suggests that the students prefer to be employed rather than starting their own business ventures. Entrepreneurial intentions are believed to signify the effort that a person will make to start a new business venture (Ajzen, 1991). Therefore the finding suggests that the students are less likely to put a lot of effort into starting their own businesses, but instead will put their effort into finding employment. This could be a factor contributing to the high unemployment levels among the youth in the country (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012), since the economy cannot absorb the growing labour market (Olufunso, 2010). This low level of entrepreneurial intent among the students could also be a factor contributing to the reported low levels of entrepreneurial activity among the country's youth (Turton & Herrington, 2013).

The majority (68%) of the students in the study had a family member who owns a business. Considering that entrepreneurs experience many repeated challenges (Markman & Robert, 2003; Venter, Urban, & Rwigema, 2010) and entrepreneurial risks (Douglas & Shepherd, 2003; Zahra, 2005), according to Shapero's model, this exposure or experience with entrepreneurs may have a negative effect on the student's entrepreneurial intent (Autio, Keeley, Klofsten, Parker, & Hay, 2001). This would result if they are exposed to entrepreneurs who struggle to manage the challenge or who have failed, and have a negative effect on the student's perceived desirability and perceived self-efficacy with regards to entrepreneurship.

The low level of entrepreneurial intent found among the final-year South African students is worrying, because well-educated entrepreneurs are more likely to

pursue opportunity-based ventures (Venter, Urban, & Rwigema, 2010) and create high-quality businesses capable of growing and creating many jobs. This implies that the challenge of high levels of unemployment is unlikely to be solved unless university students start participating in entrepreneurship in greater numbers.

With reference to Ajzen's Theory of Planned Behaviour (Ajzen, 1991; Venter, Urban, & Rwigema, 2010), the factors contributing to this low level of entrepreneurial intent may be all or some of the following:

- The final-year university students do not believe that being an entrepreneur is a worthwhile career choice.
- The students do not believe they would receive support from people within their circle, or they have a perception that people (including family) will not approve of their choice to become an entrepreneur.
- The students have the perception that being an entrepreneur is difficult and therefore believe they cannot handle the responsibility or manage a business.

Two of the three possible reasons stated above are psychological and they might account for the low level of entrepreneurial activity in South Africa despite the reportedly favourable business environment (Simrie, Herrington, Kew, & Turton, 2012). This suggests the need for a change in mindset and perhaps for publicising successful South African entrepreneurs to create role models and help students view entrepreneurship more favourably.

5.3 Discussion of Hypothesis 2: Perseverance among South African final-year students is generally low.

It is well known that entrepreneurs encounter many repeated challenges, and the capacity to respond adaptively and overcome the challenges associated with entrepreneurship is considered to be an important advantage (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002). This study found the final-year students to have a low level of perseverance (measured using grit).

The finding indicates that the students' ability to continually put effort into a given task when faced with challenges is low (Markman & Robert, 2003; Duckworth, Peterson, Matthews, & Kelly, 2007). This implies that the students are more likely to see failure, adversity, and plateaus in their progress as signs to stop and change direction (Duckworth, Peterson, Matthews, & Kelly, 2007; Maddi, Matthews, Kelly, Villarreal, & White, 2012; Reed, Pritschet, & Cutton, 2012). Since entrepreneurs encounter many repeated challenges (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002) the low level of grit demonstrated by the students could lead to business failure, as they view adversity as a signal to stop and pursue other challenges. This finding indicates a need to develop the student's levels of perseverance in order for them to succeed in future as entrepreneurs.

The model of person-entrepreneurship fit (Markman & Robert, 2003) suggests that some people are more successful as entrepreneurs than others because their personal characteristics better match the characteristics required to be an entrepreneur. The characteristics required to be an entrepreneur include self-efficacy, ability to recognise opportunities, perseverance, human capital, social capital, and social skills (Markman & Robert, 2003; Venter, Urban, & Rwigema, 2010; Urban, 2011). In reference to this theory, the low level of perseverance among final-year South African university students implies that the majority of them lack one of the characteristics required to be successful entrepreneurs.

Since perseverance influences a person's course of action (Eisenberger & Leonard, 1980) it is considered to be one of the motivating factors necessary for entrepreneurship because it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). The low level of perseverance found among the students could be a contributing factor to the low level of entrepreneurial activity among young people in South Africa. The finding suggests that the students lack the motivating factors or inner drive to follow up on the entrepreneurial intentions they have. Considering that entrepreneurial intentions among the students are already low, this finding is worrying.

The respondents scored higher on consistence of interest than on perseverance of effort. Generally though, their perseverance of effort and consistence of

interest is low. This indicates that the students struggle to commit their efforts to one specific goal (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013) and to maintain interest over a long period of time (Duckworth, Peterson, Matthews, & Kelly, 2007). Considering that entrepreneurship is challenging and requires much effort, this finding suggests that the students don't have what it takes to succeed as entrepreneurs (Markman & Robert, 2003).

5.4 Discussion of Hypothesis 3: There is a positive correlation between entrepreneurial intent and perseverance

The underlying assumption of the research was that perseverance influences a person's course of action (Eisenberger & Leonard, 1980) and that it is one of the motivating factors that is necessary for entrepreneurship because it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). The main purpose of this study was, therefore, to investigate if there is a relationship between perseverance and entrepreneurial intent. Similarly to a previous study on the relationship between perseverance (measured with Adversity quotient) and entrepreneurial intent by Mangundjaya (2009, October), this study also found no significant relationship between perseverance (measured using grit) and entrepreneurial intent.

The result suggests that whether a person has a low level of perseverance or not, they may still have high levels of entrepreneurial intent and act on their intent. According to the person-entrepreneurship fit model, people with a low level of perseverance are more likely to fail in business (Markman & Robert, 2003). Since there is no relationship between entrepreneurial intent and perseverance, it is important to help enhance the level of perseverance among students studying towards or aspiring to become entrepreneurs.

5.5 Conclusion

The majority of the students in the study were in the age group of 21 to 23 years old and have been exposed to an entrepreneur who is a family member. There was also some entrepreneurial activity among the students.

The study had three major findings. Firstly, the study found that final-year university students in South Africa have a low level of entrepreneurial intent. The finding suggests that the students prefer to be employed rather than starting their own business ventures. This could be a contributing factor to the low levels of entrepreneurial activity in the country (Gird & Bagraim, 2008; Simrie, Herrington, Kew, & Turton, 2012). Furthermore, the finding suggests that the students are less likely to put effort into starting their own business but will put effort into finding employment. This could be a contributing factor to the high unemployment levels among the youth in South Africa (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012) since the economy cannot absorb the growing labour market (Olufunso, 2010). The majority of the students in the study have been exposed to entrepreneurs who are family members; based on Shapero's model of entrepreneurial intent, the low level of intent can be attributed to the experiences of and/or with the entrepreneurs the students have been exposed to (Autio, Keeley, Klofsten, Parker, & Hay, 2001). This could be true if they have been exposed to entrepreneurs who struggled to manage the challenges associated with entrepreneurship or who have failed, which exposure has a negative effect on the student's perceived desirability and perceived self-efficacy on entrepreneurship.

Secondly, the study found the final-year students to have a low level of perseverance (measured using grit). Since entrepreneurs encounter many repeated challenges (Markman & Robert, 2003; Markman, Baron, & Balkin, 2002) the low level of grit implies that the students would struggle to overcome the challenges associated with entrepreneurship and this could lead to business failure. The low level of perseverance found among the students could be a contributing factor to the low level of entrepreneurial activity among the youth in South Africa. The finding suggests that the students lack the motivating factor or inner drive to follow up on their entrepreneurial intentions.

As in a previous study on the relationship between perseverance (measured with the Adversity quotient) and entrepreneurial intent by Mangundjaya (2009, October), this study also found no significant relationship between perseverance (measured using grit) and entrepreneurial intent. Since there is no relationship between entrepreneurial intent and perseverance, it is important to enhance the level of perseverance among students studying towards or aspiring to become entrepreneurs.

CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The following section is divided into three parts. The first presents a conclusion of the study in reference to theory. The second gives implications and recommendations based on the findings. The final part presents recommendations for further research.

6.1 Conclusions of the study

This study investigated the levels and relationship between entrepreneurial intent and perseverance. Entrepreneurial intent was measured using the Entrepreneurial Intent Scale (IEIS) developed by Thompson (2009). Perseverance was measured using the Short Grit Scale (Grit-S) developed by Duckworth and Quinn (2009).

The majority of the students (79%) were in the age group of 21 to 23 years old, 75% had never started and run a business before and the majority (68%) had a family member who owns a business. The results show that some of the final-year students have been exposed to an entrepreneur who is a family member. The results also show that there is some entrepreneurial activity among final-year undergraduate students in South Africa.

The study found the entrepreneurial intentions of the students to be low. However, the generalisation of the study to all final-year undergraduate students must be undertaken with care, because the study was conducted at one university only. This warning is because entrepreneurial intentions are said to be affected by demographic variables (Farrington, Venter, & Louw, 2012). The finding fell in line with the finding of Olufunso (2010), who studied entrepreneurial intentions among final year undergraduate and postgraduate students in South Africa, and contradicted the finding of Sieger, Fueglistaller and Zellweger (2011) that university students in South Africa have high levels of entrepreneurial intent. The findings also fell in line with the GEM reports, which found South Africa's pool of intentional entrepreneurs to be 14% of the

population, which in comparison to other efficient-driven economies is below average (efficiency-driven economies recorded an average of 27%). South Africa recorded the lowest rate of entrepreneurial intentions among its youth (15%), which was significantly below that of the participating sub-Saharan African countries (Angola, Botswana, Ethiopia, Ghana, Malawi, Namibia, Nigeria, Uganda and Zambia), which averaged 56% (Turton & Herrington, 2013).

The low level of entrepreneurial intent found among the students suggests that the students prefer to be employed rather than starting their own business ventures. The theory of planned behaviour argues that entrepreneurial intention signifies the effort that the person will make to start a new business venture (Ajzen, 1991). This implies that, based on our finding, final-year students in South Africa are less likely to put much effort into starting their own businesses, but will instead put their effort into finding employment once they complete their degrees. This could be a contributing factor to the low levels of entrepreneurial activity (Turton & Herrington, 2013) and the high unemployment levels among the country's youth (Kingdona & Knight, 2007; Simrie, Herrington, Kew, & Turton, 2012), since the economy cannot absorb the growing labour market in South Africa (Olufunso, 2010).

In terms of perseverance, this study found the final-year students to have a low level of perseverance. Based on the person-entrepreneurship fit model (Markman & Robert, 2003) this finding implies that the students would struggle to overcome the challenges associated with entrepreneurship. The low level of perseverance found among the students could also be a contributing factor to the low level of entrepreneurial activity among the youth in South Africa. Considering that perseverance is one of the motivating factors that is necessary for entrepreneurship, as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009), the low entrepreneurial activity among the youth (Turton & Herrington, 2013) suggests that the students lack this motivating factor or inner drive to follow up on their entrepreneurial intentions. This is supported by the findings in this study.

As did a previous study by Mangundjaya (2009, October) on the relationship between perseverance (measured with Adversity quotient) and entrepreneurial intent, this study found no significant relationship between perseverance (measured using grit) and entrepreneurial intent. The result suggests that whether a person has a low level of perseverance or not, he or she may still have high levels of entrepreneurial intent and act on his or her intentions. Based on the person-entrepreneurship fit model, a low level of perseverance signifies a lack of a personal trait considered to be necessary for an entrepreneur to succeed (Markman & Robert, 2003).

6.2 Implications and Recommendations

The low entrepreneurial intent found among final-year university students suggests that they prefer to be employed as opposed to starting their own business ventures, and that they are less likely to put much effort into starting their own business but will instead put their effort into finding employment. With the high levels of unemployment and the economy's inability to absorb all the available labour (Olufunso, 2010), the implication is that youth unemployment is likely to continue increasing as more students enter the labour market.

We recommend that educators introduce courses designed to create awareness of entrepreneurship as a career choice and to develop some level of entrepreneurial skills among the students. The entrepreneurship courses should be made available to all students, irrespective of their field of study. This could help increase the student's levels of self-belief and perceived desirability, and hence their entrepreneurial intentions. The increased entrepreneurial intentions could result in increased entrepreneurial activity by the students after they graduate (Ajzen, 1991). Since well-educated entrepreneurs are more likely to purse opportunity-based ventures (Venter, Urban, & Rwigema, 2010) and create businesses with a high growth rate and job creation potential (Shane, 2009), this could help reduce the high level of unemployment through self-employment and job creation.

The low level of grit found among the students suggests that they would struggle to overcome the challenges associated with entrepreneurship (Markman & Robert, 2003). Entrepreneurs in South Africa experience challenges related to financing, a lack of business or entrepreneurship skills, and infrastructure and equipment-related problems (Irma, 2011). Again, with the current high levels of unemployment (Simrie, Herrington, Kew, & Turton, 2012) and the economy's inability to absorb all the labour market (Olufunso, 2010), the implication is that this situation is unlikely to change. The recommendation is that educators should develop or test programmes aimed at developing the level of perseverance among students in the South African context.

There was no relationship found between entrepreneurial intent and perseverance, indicating that students with a high level of entrepreneurial intent may have a low level of perseverance. The implication of this, according to the person-entrepreneurship fit model, is that there is a higher chance of business failure should the students with a lower level of perseverance pursue entrepreneurship as a career choice (Markman & Robert, 2003). The recommendation is to introduce programmes aimed at increasing the level of perseverance among learners within entrepreneurship courses. This would help better prepare the students taking entrepreneurship courses for the challenges associated with entrepreneurship.

6.3 Suggestions for further research

The underlying assumption of this research was that perseverance influences a person's course of action (Eisenberger & Leonard, 1980) and is one of the motivating factors that is necessary for entrepreneurship as it acts as an inner drive towards a given goal (Harris, Gibson, & Mick, 2009). Since no relationship was found between entrepreneurial intent and perseverance, we suggest that future research investigates the relationship between perseverance and the actual implication of a business venture.

Further research should also look at developing and/or testing current methods of developing people's level of perseverance and should test their effectiveness on local students.

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APPENDIX A

Actual Research Instrument

Part 1: Personal Information

1.	What is your gender?	❑ Male	❑ Female
2.	In what age group are you?	❑ 17 and Below ❑ 18-20 ❑ 21-23	❑ 24-26 ❑ 27 and Above
3.	What's your field of study?	❑ Entrepreneurship ❑ Economics and management sciences (except entrepreneurship) ❑ Education ❑ Engineering, Built Environment and IT	❑ Health Sciences ❑ Humanities ❑ Law ❑ Natural and Agricultural sciences ❑ Theology ❑ Other
4.	Have you ever started and run a business before?	❑ Yes	❑ No
5.	Do any of your family members own a business?	❑ Yes	❑ No

Part 2: Measuring Grit

Question: Below are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people - - not just the people you know well, but most people in the world. There are no right or wrong answers, so just answer honestly!	Not like me at all	Not much like me	Somewhat like me	Mostly like me	Very much like me
1. New ideas and projects sometimes distract me from previous ones	1	2	3	4	5
2. Setbacks don't discourage me	1	2	3	4	5
3. I have been obsessed with a certain idea or project for a short time but later lost interest	1	2	3	4	5

4. I am a hard worker	1	2	3	4	5
5. I often set a goal but later choose to pursue a different one	1	2	3	4	5
6. I have difficulty maintaining my focus on projects that take more than a few months to complete	1	2	3	4	5
7. I finish whatever I begin	1	2	3	4	5
8. I am diligent	1	2	3	4	5

Part 3: Measuring Entrepreneurial Intent

Question: Thinking of yourself, how true or untrue are the following statements to you?	Very untrue	Untrue	Slightly untrue	Slightly true	True	Very true
1. I intent to set up a company in the future	1	2	3	4	5	6
2. I plan my future carefully	1	2	3	4	5	6
3. I read business newspapers	1	2	3	4	5	6
4. I never search for business start-up opportunities	1	2	3	4	5	6
5. I read financial planning books	1	2	3	4	5	6
6. I am saving money to start a business	1	2	3	4	5	6
7. I do not read books on how to set up a firm	1	2	3	4	5	6
8. I plan my finances carefully	1	2	3	4	5	6
9. I have no plans to launch my own business	1	2	3	4	5	6
10. I spend time learning about starting a firm	1	2	3	4	5	6

Letter to respondents

04 November 2013

Dear final year student,

I am a graduate student at the University of Witwatersrand (Wits Business School) studying towards a Master of Management in Entrepreneurship and New Venture Creation. I am currently working on my Master's research paper titled "Entrepreneurial Intent and Perseverance among Students in South Africa". I am requesting that you complete the attached survey. The survey is short and will take less than five minutes of your time.

The underlying assumption of my research is that people with higher levels of perseverance perform better than those with lower levels of perseverance and as a result, they are more successful in their careers. It is also well known that entrepreneurs encounter many challenges and entrepreneurial risks. Given that entrepreneurial intentions are said to be higher in people who have a more positive attitude towards risk, we question whether there is also a relationship between entrepreneurial intentions and a person's level of perseverance.

Confidentiality will be ensured as students are not required to give their name, student numbers or any contact details.

Regards,

Richard Pendame

Masters Candidate –Entrepreneurship and New Venture Creation
University of Witwatersrand (Wits Business School)
Email: richard@discountstudent.net
Tel: +27826733555/+27732054512

APPENDIX B

Correlation Matrix for perseverance of effort sub-scale

Correlation Matrix

		Newideasandprojectssometimesdistractmefrompreviousones	Ihavebeenobsessedwithacertainideaorprojectforashort	Ioftensetagoalbutlaterchoosetopurseuadifferentone	ihavedifficultiesmaintainingmyfocusonprojectsthattake
Correlation	Newideasandprojectssometimesdistractmefrompreviousones	1.000	.409	.369	.398
	Ihavebeenobsessedwithacertainideaorprojectforashort	.409	1.000	.446	.400
	Ioftensetagoalbutlaterchoosetopurseuadifferentone	.369	.446	1.000	.421
	ihavedifficultiesmaintainingmyfocusonprojectsthattake	.398	.400	.421	1.000
Sig. (1-tailed)	Newideasandprojectssometimesdistractmefrompreviousones		.000	.000	.000
	Ihavebeenobsessedwithacertainideaorprojectforashort	.000		.000	.000
	Ioftensetagoalbutlaterchoosetopurseuadifferentone	.000	.000		.000
	ihavedifficultiesmaintainingmyfocusonprojectsthattake	.000	.000	.000	

Correlation Matrix for the consistence of interest sub-scale

Correlation Matrix

		Newideasandprojectssometimesdistractmefrompreviousones	Ihavebeenobsessedwithacertainideaorprojectforashort	Ioftensetagoalbutlaterchoosetopurseuadifferentone	ihavedifficultiesmaintainingmyfocusonprojectsthattake
Correlation	Newideasandprojectssometimesdistractmefrompreviousones	1.000	.409	.369	.398
	Ihavebeenobsessedwithacertainideaorprojectforashort	.409	1.000	.446	.400
	Ioftensetagoalbutlaterchosetopurseuadifferentone	.369	.446	1.000	.421
	ihavedifficultiesmaintainingmyfocusonprojectsthattake	.398	.400	.421	1.000
Sig. (1-tailed)	Newideasandprojectssometimesdistractmefrompreviousones		.000	.000	.000
	Ihavebeenobsessedwithacertainideaorprojectforashort	.000		.000	.000
	Ioftensetagoalbutlaterchosetopurseuadifferentone	.000	.000		.000
	ihavedifficultiesmaintainingmyfocusonprojectsthattake	.000	.000	.000	

Correlation between perseverance of effort and consistence of interest

		Perseverance of effort	Consistence of interest
Perseverance of effort	Pearson Correlation	1	.902**
	Sig. (2-tailed)		.000
	N	223	223
Consistence of interest	Pearson Correlation	.902**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

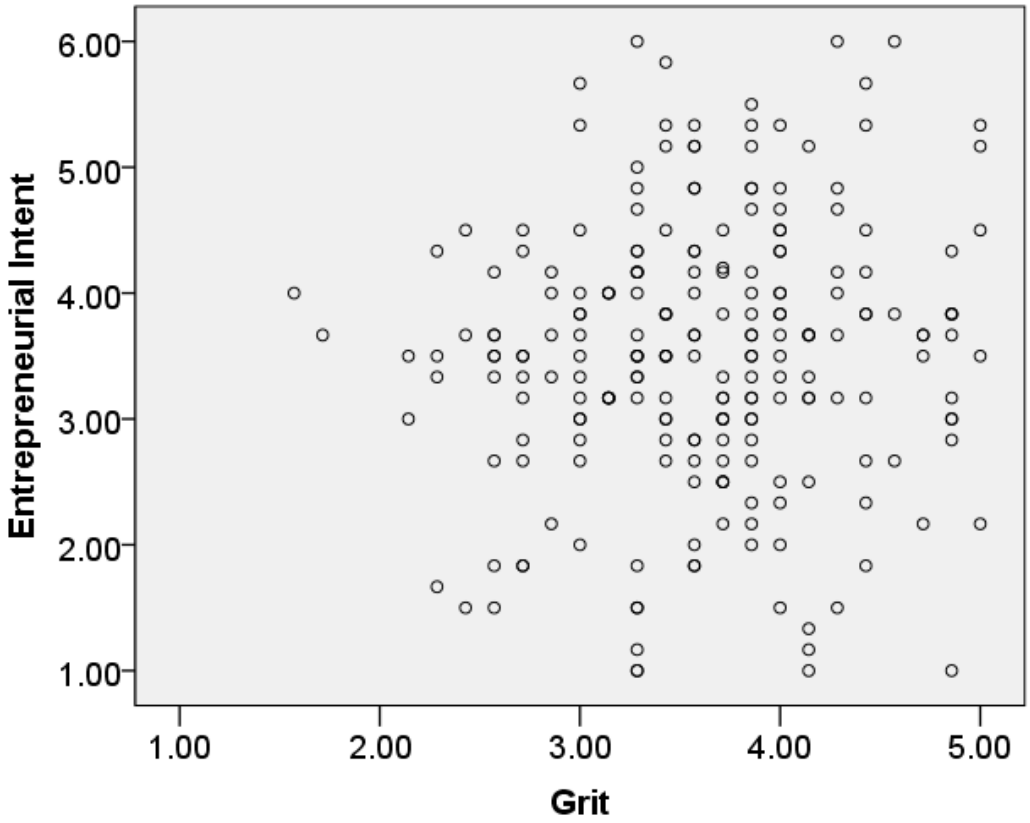
Correlation matrix for entrepreneurial intent scale (excluding distracter items)

Correlation Matrix

		lintenttosetupacompanyinthefuture	lneversearchforbusinessstartupopportunities	lamsavingmoneytostartabusiness	ldonotreadbooksonhowtosetupafirm	lhavenoplanstolaunchmyownbusiness	lspendtimelearningaboutstartingafirm
Correlation	lintenttosetupacompanyinthefuture	1.000	.135	.333	.230	.666	.395
	lneversearchforbusinessstartupopportunities	.135	1.000	.201	.398	.333	.195
	lamsavingmoneytostartabusiness	.333	.201	1.000	.187	.275	.572
	ldonotreadbooksonhowtosetupafirm	.230	.398	.187	1.000	.370	.246
	lhavenoplanstolaunchmyownbusiness	.666	.333	.275	.370	1.000	.279
	lspendtimelearningaboutstartingafirm	.395	.195	.572	.246	.279	1.000
Sig. (1-tailed)	lintenttosetupacompanyinthefuture		.022	.000	.000	.000	.000
	lneversearchforbusinessstartupopportunities	.022		.001	.000	.000	.002
	lamsavingmoneytostartabusiness	.000	.001		.003	.000	.000
	ldonotreadbooksonhowtosetupafirm	.000	.000	.003		.000	.000
	lhavenoplanstolaunchmyownbusiness	.000	.000	.000	.000		.000
	lspendtimelearningaboutstartingafirm	.000	.002	.000	.000	.000	

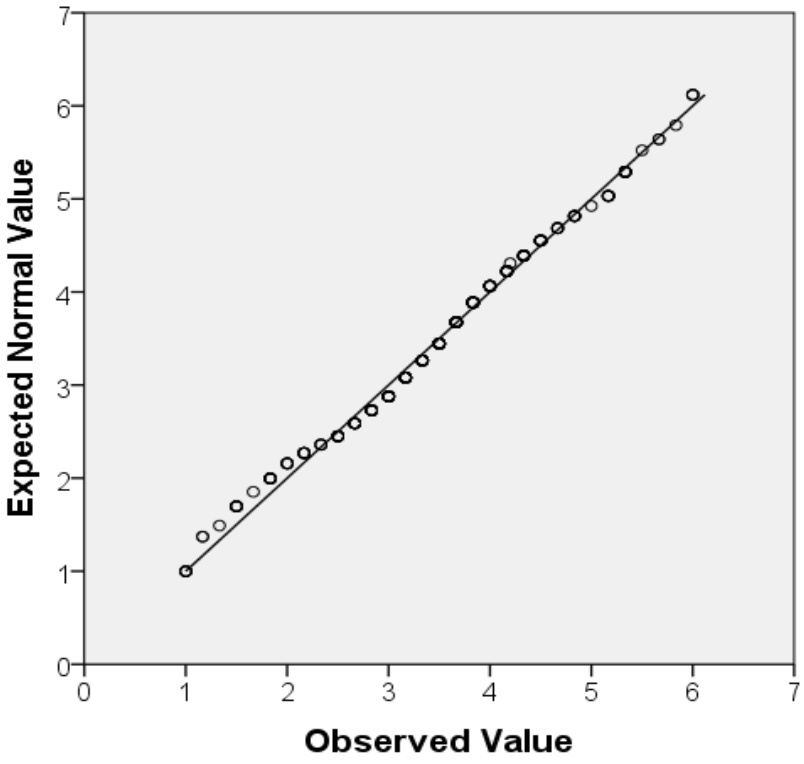
APPENDIX C

Scatter plot for the entrepreneurial intent and grit scores

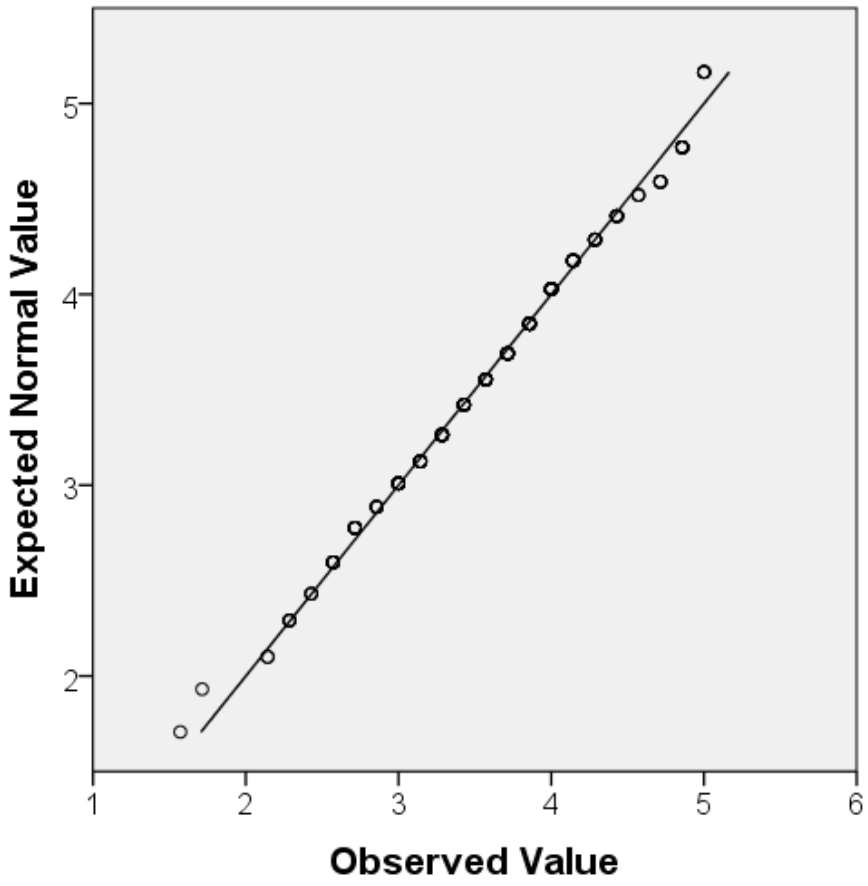


APPENDIX D

Normal Q-Q plot for distribution of Entrepreneurial intent scores



Normal Q-Q plot for distribution of grit scores



APPENDIX E

Consistency matrix

Determine if there is a relationship between entrepreneurial intent and an individual's level of perseverance.					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Sub-problem 1: Evaluate the level of entrepreneurial intent among students in South Africa.	• (Douglas & Shepherd, 2003) • (Gird & Bagraim, 2008) • (Olufunso, 2010) • (Simrie, Herrington, Kew, & Turton, 2012)	*Hypothesis 1:* Entrepreneurial intentions among South African final-year students are generally low	Individual Entrepreneurial Intent Scale (IEIS)	Interval	Mean
Sub-problem 2: Analyse the level of perseverance among students in South Africa.	• (Markman & Robert, 2003) • (Duckworth, Peterson, Matthews, & Kelly, 2007)	*Hypothesis 2:* Perseverance among South African final-year students is generally low.	Short Grit Scale (Grit-S)	Interval	Means

Determine if there is a relationship between entrepreneurial intent and an individual's level of perseverance.					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Sub-problem 3: Determine if there a relationship between entrepreneurial intent and perseverance.	• (Eisenberger & Leonard, 1980) • (Douglas & Shepherd, 2003) • (Markman & Robert, 2003)	*Hypothesis 3:* There is a positive correlation between entrepreneurial intent and perseverance.	Individual Entrepreneurial Intent Scale (IEIS) and Short Grit Scale (Grit-S)	Ordinal	Means