



THE THEORY OF PLANNED BEHAVIOUR AND THE ENTREPRENEURIAL EVENT
MODEL AS PREDICTIVE MODELS OF ENTREPRENEURIAL INTENTION

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COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. This is my own work. Each contribution to, and quotation in this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced accordingly.

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Abstract

The Theory of Planned Behaviour and The Entrepreneurial Event Model were used as models to predict entrepreneurial intention amongst final year students. The sufficiency of this paradigm was compared with the aim of determining which model predicts entrepreneurial intention the most within a South African context. A sample of 186 students was used to determine the sufficiency of the Theory of Planned Behaviour. As part of our methodology, a sub-set ($n = 123$) of the sample was used to determine the sufficiency of the Entrepreneurial Event Model. The sample consisted of final year commerce and engineering students. The results of the regression analysis indicated that the Theory of Planned Behaviour explained 58% of the variance in entrepreneurial intention. The Entrepreneurial Event Model was found to be less sufficient than the Theory of Planned Behaviour and only explained 38% of the variance in entrepreneurial intention. Therefore, when predicting entrepreneurial intention in a South African context, the Theory of Planned Behaviour can be considered the more sufficient model of prediction. Future research should consider using the Theory of Planned Behaviour, rather than Entrepreneurial Event Model, for entrepreneurial intention prediction among students in South Africa.

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Introduction

Entrepreneurship has been identified as a possible solution to alleviate unemployment and promote economic growth within South Africa (Mmesí, 2015; Oosthuizen & Cassim, 2015). This is particularly important for South Africa as the unemployment rate, as well as slow economic development, are among the country's major concerns (Rogan & Reynolds, 2015). Categorized as an upper middle-income country, South Africa needs to improve the state of its economy if the country is to remain competitive in the global economy (Mmesí, 2015). Developing the economy is challenging, especially when roughly one quarter of the workforce remains unemployed due to the lack of employment opportunities. However, the establishment of new ventures, businesses and organisations, whether formal or informal, small or medium enterprises, can create these much needed employment opportunities. Job creation would, in turn, allow more working class South Africans to become involved in contributing to the country's economy (Mmesí, 2015; Oosthuizen & Cassim, 2015).

Hisrich, Peters and Shepard (2005) have defined entrepreneurship as the capacity of an individual to form and manage an enterprise or venture which usually involves considerable risk and reward. It was entrepreneurship that changed the state of Europe, Asia and America, allowing these nations to emerge as forerunners in the global economy (Kamua, 2013). This identifies the importance of entrepreneurs and their ability to bring about positive change for the individual and a nation. Unfortunately, South Africa lacks the required level of entrepreneurial activity to bring about positive change such as economic growth (Mmesí, 2015; Oosthuizen & Cassim, 2015). After establishing a democracy, South Africa recognised the critical role of entrepreneurship in addressing unemployment and has thus sought to encourage their citizens, especially the youth of the country in starting new businesses (Mmesí, 2015; Tabane, 2016). However, planning to develop the level of

entrepreneurial activity within a country is a difficult task as it would mean changing attitudes and behaviour. This quickly attracted the interest of academic researchers.

Some of the first research conducted relating to entrepreneurship involved examining the personality and characteristics of already established entrepreneurs (Hornaday & Aboud, 1971; McClelland, Atkinson, Clark & Lowell, 1953; McClelland, 1961). This research developed a foundation for future entrepreneurship research, as researchers identified some of the personality traits and attributes that set entrepreneurs apart from other individuals. However, this did not mean that individuals who had these personality traits and attributes were all going to become entrepreneurs. Therefore, personality traits and attributes could not be considered as efficient predictors of whether or not individuals would engage in entrepreneurial activity. This then sparked further enquiry and entrepreneurship research shifted toward investigating the antecedents which lead to entrepreneurial behaviour.

There are many predictors of behaviour and this varies depending on the type of behaviour. However, Ajzen and Fishbein (1977) theorised that intention to perform a behaviour is the most effective predictor. Ajzen and Fishbein's (1977) theory of reasoned action (TRA) gained popularity when it was found to be a sufficient predictor of intention (Ajzen & Madden, 1985). The intention to perform a behaviour was then applied within entrepreneurial research. Researchers started focusing on entrepreneurial intention (EI) and the factors that could affect EI, rather than studying the entrepreneurs themselves (Bird & Jelinek, 1988). EI refers to the inclination an individual has to form or create new ventures (Bird & Jelinek, 1988). This research flourished as it gave an indication of the factors which could potentially increase EI and in turn lead to entrepreneurial behaviour. Among the factors identified were attitudes, subjective norms, education and social support, to mention a few (Ajzen & Fishbein, 1977).

Earlier research found results that support these notions. Tkachev and Kolvereid (1999) suggested that if universities educate their students about entrepreneurship and give them opportunities to actually practice their entrepreneurial skills, these students become more inclined to starting their own business. Similarly, more recent research reports that providing platforms for students, whereby they are able to network and build relationships with established entrepreneurs, also fosters EI (Buttar, 2015). Lastly, incorporating programmes within the curriculum that changes the attitudes and perceptions of entrepreneurship with regard to the feasibility of being self-employed is another factor that was found to be beneficial for increasing EI among students (Luthje & Frank, 2003). Promoting entrepreneurship at this level is exactly what South Africa requires to plan for future economic development. Unfortunately, the majority of the research on EI has been investigated abroad and due to cultural differences amongst nations the results may not have the same implications for South Africa (Gurel, Altinay & Daniele, 2010). This indicates the need for further investigation of EI among South African students due to the benefits of this research, which can be seen in other countries. This study intends on contributing to this area of research.

A number of theories has been applied to EI research. Nonetheless, one theory remains dominant. Currently, Ajzen's (1991) theory of planned behaviour (TPB) is now the most common theoretical framework applied in entrepreneurial research today due to its sufficiency in predicting EI (Schlaegel & Koenig, 2013). The TPB is an extension of the TRA, as it manages to address a limitation of behaviour prediction of the prior model (Ajzen & Fishbein, 1977; Ajzen & Fishbein, 1980). The TPB proposed that the intentions to perform behaviours are predicted by three components; the attitude toward the behaviour, the subjective norm and the perceived behavioural control. The attitude toward behaviour refers to the favourable, or unfavourable, evaluation an individual has toward a behaviour. The

subjective norm refers to the social pressures experienced by the individual to perform a behaviour. Lastly, perceived behavioural control refers to an individual's ability to perform a behaviour, and also includes if an individual is facing challenges, or has resources to perform the behaviour. These three components determine the strength of the intention and the stronger the intention, the more likely it will be for an individual to engage in a particular behaviour (Ajzen, 1991).

Similarly to the TPB, another model which has been applied within this area of research is Shapero and Sokol's (1982) Entrepreneurial Event Model (EEM). The EEM has not been as extensively applied within EI research compared to the TPB, however where it has been applied the model has also shown sufficiency in predicting EI. This model also has three antecedents that predict EI which are namely; perceived desirability, perceived feasibility and propensity to act. Perceived desirability refers to the degree in which an individual finds the prospect of starting a business as attractive. Perceived feasibility refers to whether an individual believes that he or she is capable of starting a business (Shapero & Sokol, 1975). Lastly, propensity to act refers to an individual's disposition on acting upon their decisions (Shapero, 1975).

These competing models have opened debate to which is more sufficient in predicting EI. The majority of EI research applies the TPB as a framework for predicting EI, however Krueger, Reilly and Carsrud (2000) conducted a study that found the EEM as a more sufficient model for predicting EI. On the other hand, a meta-analysis conducted by Schlaegel and Koenig (2013) found the TPB to be the better predictive framework of EI. Unfortunately, the research conducted by Krueger et al. (2000), or the research included in the meta-analysis which compared the models, was not conducted within a South African context (Schlaegel & Koenig, 2013). Therefore, this leaves a gap in literature regarding which is the better model of EI prediction within a South African context. This is an important debate as cultural

differences within countries across the world play a fundamental role in determining which antecedents of each model are more responsible in predicting EI, or if they in fact have any effect (Autio, Keeley, Klofsten, Parker & Hay, 2001; Schlaegel & Koenig, 2013). Finding an appropriate model to apply within a South African context would contribute vastly to this area of research as the determinants of EI can be understood to a greater extent. It will also provide future South African researchers with an appropriate model to apply in EI studies.

The TPB and EEM will be used in this study to determine the EI among final year students. These two models will be compared in order to evaluate which model is more sufficient in predicting EI among the South African students. The study will then draw a conclusion regarding which model should be applied when conducting EI research within a South African context. Furthermore, the differences and similarities of each model will be discussed with the aim of building an understanding of how exactly these models predict EI and to what degree they are limited.

Literature Review

The literature review will proceed to analyse existing research relating to this study. This literature will be used to substantiate the claim that the TPB and EEM predicts EI. Firstly, the literature on EI will be reviewed to understand how this variable leads to behaviour and what type of contexts it has been applied in. Thereafter, research which has made use of either the TPB or EEM will be reviewed in order to understand the sufficiency of each model in predicting EI. Lastly, literature which has compared the two models will be reviewed and discussed.

Research papers were gathered during March 2016, using a mixture of online databases such as EBSCO host, Emerald, SAGE and JSTOR. Additionally, the snowball effect was used with more renowned research papers within the field, these papers include

studies conducted by Ajzen (1991), Autio (2001), Ajzen and Fishbein (1977) and Krueger (1993).

Entrepreneurial Intention

Ajzen and Fishbein (1977), researchers studying behaviour, beliefs and attitudes, suggested that intention is an immediate antecedent of performing a behaviour. Intention refers to the state of mind which guides an individual's attention, experiences and actions toward a specific object, goal or path (Bird & Jelinek, 1988). It was also theorised that the greater the degree of intention, the more likely it would be for a behaviour to occur (Ajzen & Fishbein, 1977). The relationship between intention and behaviour was tested by Ajzen and Madden (1985) whereby the class attendance among students was recorded and the students were asked to complete measures of intention. The results indicated that intention was indeed a significant predictor of behaviour. Similarly, Bagozzi, Baumgartner and Yi (1989) found similar results within their research which investigated the mediating effect of intention between attitude and behaviour. The establishment of the intention-behaviour relationship then led to the inclusion of intention within a wide range of behaviour research, including entrepreneurship studies.

The components of TPB demonstrated that intention had antecedents (Ajzen, 1991). Likewise, Bird and Jelinak (1988) stated that EI is developed through an individual's personal needs, wants, values and habits. Thus guided, EI studies and researchers began developing theories relating to the antecedents of EI. Among these researchers was Shapero and Sokol (1982) who formulated the EEM, one of the first theoretical frameworks specifically designed to predict EI by using three predicting variables. Other researchers found antecedents such as perceived barriers and perceived support to also have the predictive ability of determining EI (Luthje & Frank, 2003). Perceived barriers negatively

correlated with EI and referred to any factor that restricted an individual from starting a business, such as the availability of finances. Conversely, perceived support positively correlated with EI and referred to any individuals that offered a form of assistance to an individual starting a business (Luthje & Frank, 2003).

Buttar (2015) demonstrated that social capital, which refers to the personal relationships affecting an individual's behaviour, has been found indirectly to predict EI by being associated with the components of the TPB. Lastly, past entrepreneurial work experience and entrepreneurial education has also shown to indirectly influence the prediction EI by being related to some of the components of the TPB (Yang, 2013). Entrepreneurial work experience, entrepreneurial education, social capital, perceived barriers and support can all be recognised as predictors of EI. Therefore, it can be concluded that there are other antecedents other than those outlined by Ajzen (1991) as well as Shapero and Sokol (1982). Nonetheless, these variables will not be included in this study.

Across the above mentioned EI research, one aspect of the research which should be taken into account is the operationalisation and measurement of EI. Using different scales across research can create inconsistencies in the results observed and create barriers when comparisons are made between studies. For example, Krueger (1993) viewed EI as a dichotomous variable, and only used one item to measure EI. Participants chose either 'yes' or 'no' and were asked if they would ever start their own business. Other researchers believed that measuring EI as a dichotomous variable created issues in measurement due to the variable being operationalised poorly (Autio et al., 2001). A few years later EI was again measured using one item, however the question was posed differently and participants were asked the possibility of starting a business. Instead of having respondents answer 'yes' or 'no', participants chose a number between 0 -100, but this still did not capture the essence of EI (Krueger et al., 2000).

The operationalisation of EI changed when Davidsson (1995) measured EI with three items, which posed similar questions to past research such as “have you ever thought about founding your own firm?”. The key difference was that participants had three options for each item and responses categories, including, “never occurred to me” to “have seriously considered”. Autio et al. (2001) agreed with this newly found operationalisation of EI. Seeking to improve measurement of EI further, Autio et al. (2001) developed a five point Likert scale consisting of four items which focused on part time and full time entrepreneurial intent. This scale is currently the most commonly used scale to date within EI research. The operationalisation of EI has evolved over time, most researchers believing that measuring EI by using a few items and response categories captures the essence of EI to a greater extent (Schlaegel & Koenig, 2013).

Apart from the difference in the operationalisation of EI across research, two other factors that should be reviewed are the description of the variable and the context EI research has been applied in. EI has almost always considered to be a dependent variable, where researchers manipulate the antecedents of EI and measure the effect thereafter (Krueger et al., 2000; Luthje & Frank, 2003; Yang, 2013). The reason why research focuses on measuring intention rather than actual behaviour within EI research is due to the fact that performing longitudinal studying and tracking the behaviour of high volumes of participants is usually costly. Researchers conduct their studies under the assumption that intention predicts behaviour as this has been concluded in past research (Ajzen and Madden, 1985; Bagozzi et al., 1989). However, when behaviour is measured, EI then becomes recognised as the independent variable and behaviour becomes the dependent variable (Ajzen and Madden, 1985; Bagozzi et al., 1989). This study will measure investigate the influence of antecedents and therefore, EI will be a dependent variable.

The context EI research has most commonly been applied to have been studying the EI among students across the world (Autio et al., 2001; Buttar, 2015; Krueger et al, 2000; Luthje & Frank, 2003; Tkachev & Kolvereid, 1999; Turker & Selcuk, 2008). Students are considered the most suitable candidates for EI, as these individuals have likely been exposed to some form of entrepreneurial education, or have developed entrepreneurial knowledge through other courses they have completed. Moreover, students are likely to enter the work market within the following year, or next few years. Lastly, students are in the perfect environment where EI can be developed, thus it makes sense to perform the studies using a sample of students (Krueger et al., 2000).

The Theory of Planned Behaviour

The TPB was developed as an extension of the TRA as mentioned above. Ajzen and Fishbein (1970) collaborated to study behaviour and outcomes, they proposed the TRA as a theoretical framework for behaviour prediction. They sought to understand behaviour and claimed that individuals are rational, and consider the implications of their actions before performing any action (Ajzen & Fishbein, 1980). However, it was realised that the TRA was not a sufficient model to predict behaviour due to one major limitation. It was concluded that the TRA model only functions well when the behaviour is under an individual's volitional control (Ajzen, 1988). Perceived behavioural control was introduced into the model as an indicator of the degree of control an individual has over the behaviour.

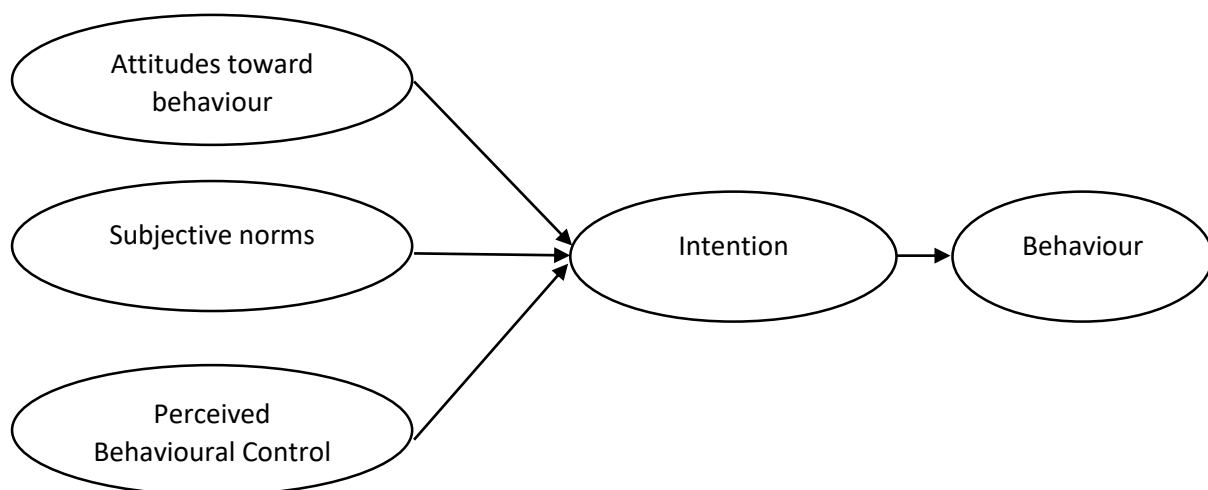
The new extended model was coined the TPB. This model sought to achieve the same goal as the TRA (Ajzen, 1988; Ajzen, 1991). The TPB was recognised as a general model which could be applied to any behaviour. The main aim of the model was to not only predict, but also understand any motivational factors which influenced behaviour that was not under the individual's volitional control. Madden, Ellen and Ajzen (1992) demonstrated in their

study that the additional component accounted for more of the variance in behavioural intention, and thus improved behavioural intent prediction. Understanding behaviour meant identifying and manipulating the antecedents of behaviour, if this could be achieved then behaviour could be changed. (Ajzen, 1988; Ajzen, 1991).

The TPB suggests that an individual's beliefs about performing a behaviour influences their behavioural intentions (Ajzen, 2005). The theory is underlined by the following assumptions; intention is an immediate antecedent of the actual behaviour. Intention is determined by attitudes toward a behaviour, subjective norms and perceived behavioural control. These determinants are formed by an individual's set of beliefs relating to each component respectively. Lastly, behavioural, normative and control beliefs are determined by an individual's background, culture, demographics and experiences (Ajzen, 1991; Ajzen, 2005). Another important aspect of the TPB is that attitudes toward behaviour, subjective norms and perceived behavioural control are related to one another. Perceived behavioural control is the only component directly related to the actual behaviour (Ajzen, 1991). Each predictor of the model will be discussed below.

Figure 1

The Theory of Planned Behaviour



Behavioural beliefs refer to the connection an individual establishes between a given behaviour and the outcome that behaviour produces. Ajzen (1991) suggests that an individual may have many beliefs regarding a behaviour, though only some of those beliefs are readily accessible. The accessible beliefs function in tandem with the subjective understanding of the outcomes, which are believed to be produced by the behaviour, and in turn develop that individual's attitude toward a specific behaviour. Therefore, depending on the strength of behavioural beliefs of an individual, the attitude toward behaviour is usually positively or negatively shaped (Ajzen, 1991). The attitude toward behaviour has a direct influence on an individual's behavioural intention, where a more positive orientated attitude results in a stronger behavioural intention, and a more negative orientated attitude results in a weaker behavioural intention.

Normative beliefs refers to the individual's perception of other closely associated individuals and groups' beliefs regarding a specific behaviour. These individuals may include friends and family, as well as role models, work colleagues, or any other relevant individual or group, dependent on the behaviour. An individual's motivation to perform a behaviour is reliant on this perception and respectively this establishes an individual's subjective norms. An individual has strong subjective norms and is highly likely to have strong behavioural intention when these referents are for the behaviour. However, an individual whose referents do not approve the given behaviour usually have weak subjective norms and are less motivated, in turn also exhibit lower levels of behavioural intention (Ajzen, 1991).

Control beliefs refer to those factors an individual believes to either facilitate, or impede, a behaviour. The perceived behavioural control is determined by the individual's beliefs regarding the degree of power that individual exerts over those factors which may facilitate, or impede, the performance of a behaviour. Stronger control beliefs and perceived power allows an individual to believe that he/she has the ability to perform a behaviour.

Weaker control beliefs and perceived power will impede an individual's performance of a behaviour (Ajzen, 1991). Apart from being the only component related to the actual behaviour, perceived behavioural control has been the only component that has been conceptualized as another variable throughout the research. It has been argued that the conceptualisation of self-efficacy and perceived behavioural control are similar. Bandura (1977) defined self-efficacy as an individual's beliefs in his/her abilities to accomplish a task. Ajzen (2005) has concluded due to its similarity, self-efficacy is an acceptable alternative to perceived behavioural control within the model of the TPB.

Ajzen (2005) explains that each of these antecedents play a role in predicting behavioural intention. Attitudes toward the behaviour, subjective norms and perceived behavioural control should be measured as they are directly associated with behavioural intention. Measuring the beliefs is not recommended, as they are antecedents of attitude towards behaviour, subjective norms and perceived behavioural control, thus they are indirectly associated with behavioural intention (Ajzen, 2005). To assess the sufficiency of the model in predicting behavioural intent, the data of the antecedents of intention are gathered from measurement, and should be put into a regression analysis. If the regression analysis provides significant results of prediction for one or more of the antecedents, this concludes that the model is sufficient to predict behavioural intent within the context of that specific study. However, if one or more antecedents reveal insignificant results, this means these antecedents are not significant predictors of intent within the context of the study (Ajzen, 2005).

The Theory of Planned Behaviour as a Predictor of Entrepreneurial Intention

Previous studies investigating the TPB as a predictor of EI have found significant results. The following studies have all been conducted within different countries. This

confirms that the TPB can be applied within different cultural contexts, and remain sufficient in predicting EI. University or higher education students were used as participants and the sample size varied within each study (Autio et al., 2001; Karimi, Biemans, Lans, Chizari & Mulder, 2013; Tkachev & Kolvereid, 1999; Varamaki, Joensuu, Tornikoski & Viljamaa, 2013). The table below contains a summary of the studies and each study will be discussed thereafter. The popular studies will be discussed firstly, followed by more recent work.

Table 1

Research articles that used the antecedents of the Theory of Planned Behaviour to predict Entrepreneurial Intention

Author and Year	Variables	Results
Tkachev and Kolvereid (1999)	<ul style="list-style-type: none"> • Employment status choice intentions • Antecedents of the TPB • Role models • Gender • Past entrepreneurial work experience 	Self-employment attitude, subjective norms, perceived behavioural control and self-employment experience were significant predictors of employment status choice intentions
Autio, Keeley, Klofsten, Parker and Hay (2001)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Antecedents of the TPB • Work experience • Employment status • Gender • Age 	Attitude toward behaviour, subjective norms, perceived behavioural control, age and work experience were significant predictors of entrepreneurial intention
Varamaki, Joensuu, Tornikoski and Viljamaa, (2013)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Antecedents of the TPB • Entrepreneurial education pedagogy 	Attitude toward behaviour, subjective norms and perceived behavioural control were significant predictors of entrepreneurial intention. Entrepreneurship education pedagogy shared a significant positive relationship with attitudes toward entrepreneurship.

Karimi, Biemans, Lans, Chizari and Mulder (2013)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Antecedents of the TPB • Role models 	Attitude toward behaviour, subjective norms and perceived behavioural control were significant predictors of entrepreneurial intention. Role models were positively related to each antecedent of the TPB.
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Tkachev and Kolvereid (1999) investigated the employment status choice intentions and tested the TPB on a sample of 512 Russian students from three different universities. Employment choices consisted of either salaried work, or being self-employed. Furthermore, demographics such as parents being entrepreneurs, gender and past entrepreneurial work experience, were also examined in order to understand the role they played in determining the intention to become self-employed (Tkachev & Kolvereid, 1999). Each variable was measured on a 7-point Likert scale, other than self-employment attitude which was calculated by adding index scores of the reasons for becoming self-employed. Future employment preference and subjective norms were measured with six items, whereas perceived behavioural control was measured with six items. Employment choice only consisted of three items where the students were asked the likelihood of either becoming self-employed, preferring to work for an organisation or if they were still undecided (Tkachev & Kolvereid, 1999). Results indicated that the self-employment attitude, subjective norms, perceived behavioural control as well as self-employment experience are significant predictors of employment status choice intentions. The predictors nearly accounted for half the variance observed within employment status choice intentions (Tkachev & Kolvereid, 1999).

Autio et al. (2001) applied the TPB to student samples from four different countries to assess the model's sufficiency across international borders. The relationship of each

antecedent and EI was tested, it was proposed each antecedent share a significant relationship with EI and perceived behavioural control having the strongest relationship out of the three antecedents. Demographic factors such as work experience, employment status and gender were also considered to determine the influence these variables had on EI (Autio et al., 2001). The sample consisted of 3,445 university students across the four countries and were chosen randomly from the general student population. The three antecedents of intention were measure with 5-point Likert scale. Only likelihood to change jobs had was measured on a 4-point scale, other demographics were dichotomous variables (Autio, 2001). Results varied across countries, all of the TPB predictors were usually significant with subjective norms commonly being the weakest predictor. Demographic findings were inconsistent, with the likelihood to change jobs being the strongest predictor of EI (Autio et al., 2001).

A more recent study conducted by Varamaki et al. (2013), who used the TPB as a framework for their study, investigated the relationship with entrepreneurial education, pedagogy and the antecedents of EI. This study collected data from university students at two points in time; during 2008, when 534 students responded and completed the self-report measure, and 2010, when only 197 students responded to the follow up. Data was collected at two points in time to measure the influence entrepreneurial education had on EI (Varamaki et al., 2013). Attitudes towards work, subjective norms, perceived behavioural control and EI, were measured with a 7-point Likert scale and consisted of nine, three, five and eight items respectively. Students were separated into two groups, which were dependent on the teaching method of entrepreneurial education they received. This was done to conclude which method of teaching entrepreneurial education was more effective in indirectly influencing EI (Varamaki et al., 2013). The main findings suggest that the TPB model was sufficient in predicting EI, and that entrepreneurship education pedagogy shared a significant positive relationship with attitudes toward entrepreneurship.

Similarly, a study conducted by Karimi et al. (2013) also used the TPB as a framework, and instead of investigating the relationship of entrepreneurial education pedagogy with the antecedents, role models were rather considered. The sample consisted of 400 science students across seven different universities, who had participated in entrepreneurship courses. Likewise, this study also used 7-point Likert scales for variables other than demographics. Attitudes toward work was measured with five items, while subjective norm, perceived behavioural control and EI were each measured with six items. Only role models were measured with items where students were asked if any parents, relatives or friends were successful entrepreneurs (Karimi et al., 2013). Again, the model of the TPB revealed significant findings and the antecedents predicted EI. Role models were positively related to each antecedent as well, and thus, it was concluded that role models indirectly predict EI (Karimi et al., 2013).

According to the literature, the TPB has been a consistent predictor of EI, therefore it will be tested if the model is sufficient to predict EI within this study. One trend recognised across these research papers is the evolution of measurement regarding the components of the model of the TPB. This has been especially significant for EI, which was measured with a single item within older research (Krueger et al., 2000; Tkachev & Kolvereid, 1999) compared to recent research, which usually uses five or more items (Karimi et al., 2013; Varamaki et al., 2013).

The Model of the Entrepreneurial Event

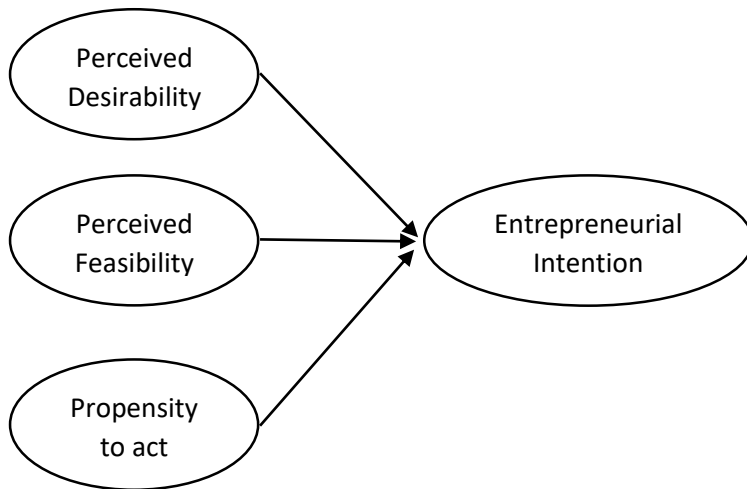
As mentioned above, the EEM was developed by Shapero and Sokol (1982) as framework used specifically for determining EI, rather than predict any intention. The theory of the Entrepreneurial Event assumes that two prerequisites should be met before starting a new business. Firstly, an individual must perceive the idea of starting a business as credible,

that is, he or she finds this idea as both attractive and achievable. Secondly, starting a business is initiated by some type of displacing event which can take the form of neutral, negative or positive experiences. Neutral events may take the form of graduating from university. Negative events may include losing one's job, or getting a divorce. Whereas, positive events may include receiving an inheritance or venture capital from a stakeholder (Krueger et al. 2000; Shapero and Sokol, 1982). The displacement experienced will bring about a change in behaviour, and if the individual views the idea of starting a business as credible, he or she will act upon this feeling. This is known as the Entrepreneurial Event, where perceived feasibility, perceived desirability and propensity to act influence the intention and in turn the behaviour of an individual to start a business (Shapero & Sokol, 1982).

Shapero (1984) explains that the underlying mechanisms of the EEM are more complicated than they appear. In particular cases only perceived feasibility and perceived desirability will be a sufficient indication of EI, whereas other cases may account for variance explained by all three predictors. Another interesting aspect of this model is the complex nature of propensity to act. This predictor not only has a direct effect in determining EI, but also has moderating effects between the other variables within the EEM. Propensity to act will be discussed in more detail below. Perceived feasibility and perceived desirability are also shaped by situational variables, social factors, individual characteristics and the cultural environment (Shapero & Sokol, 1982). Thus the sufficiency of the model will vary according to the context and environment where it is applied. Each predictor of the model will be discussed below.

Figure 2

The Model of the Entrepreneurial Event



Perceived desirability has been found to play a fundamental role in determining EI. This perception is usually shaped through the attitudes and beliefs of an individual starting a business (Krueger, 1993). These attitudes and beliefs can be shaped through various factors, for example, entrepreneurship education has been found to encourage a favourable attitude toward starting a business (Gorman, Hanlon & King, 1997). Other research shows that role models, or successful business people could also increase the attractiveness of entrepreneurship if these individuals inspire others through knowledge and sharing their positive experiences (Wilson, Marlino & Kickul, 2004). In cases where individuals have favourable attitudes toward entrepreneurship and have positive beliefs about entrepreneurship, they will perceive entrepreneurship as a desired career choice. Higher levels of perceived desirability are associated with higher level of EI (Shapero & Sokol, 1982).

Perceived feasibility has also been identified as another important determinant of EI. The key factor that shapes this perception is the evaluation of an individual with regard to whether they have the skill and capability necessary to start a business (Krueger, 1993; Shapero & Sokol, 1982). Godsey and Sebor (2010) explain that an individual's level of

perceived feasibility is positively influenced by their entrepreneurial self-efficacy. Entrepreneurial self-efficacy is defined by an individual's evaluation of his or her ability, as well as how to effectively use available resources in order to start a business (Godsey & Sebora, 2010). The idea of self-efficacy is that individuals usually avoid tasks, or behaviours, that they perceive to be out of their skill set or capability. However, when this characteristic is shaped through external factors, it may result in positive outcomes. For example, education could allow individuals learn the skills required to start a business. When an individual has knowledge about business operation and understands entrepreneurship, this may increase entrepreneurial self-efficacy, and in turn, change his or her perceptions. Individuals who possess the necessary skills often feel that starting a business is a feasible event (Godsey & Sebora, 2010). Thus individuals who perceive starting a business as feasible are more likely to demonstrate strong EI.

Propensity to act was actually identified as a key personality characteristic of entrepreneurs before the perceptions of feasibility and desirability were considered in the EEM (Shapero, 1975). Shapero (1975) associates this variable to internal locus of control and has even suggested that using an internal locus of control scale as a proxy in the absence of appropriate measures. According to Rotter (1966) the internal locus of control refers to the individual's perception of his/her ability to influence the events within their lives. Individuals who have an internal locus of control believe that they dictate their own lives opposed to individuals you have an external locus of control and attribute events within their lives to external factors (Begley & Boyd, 1987). The type of control determines whether an individual has the ability within themselves to execute a plan of action independently (Gurel et al., 2010). Therefore, an individual who does not have an appropriate level of propensity to act cannot be an entrepreneur, as he/she will not be able to initiate new venture creation

(Shapero, 1982). The conceptualisation of propensity to act has varied to a certain extent through research, and this has also resulted in measurement errors of the variable.

Propensity to act is also recognised as the most complex predictor within the model. As mentioned above Shapero and Sokol (1982) argue that propensity to act not only has a direct effect on EI, but also acts as a moderating variable between the other predictors and EI. This emphasises the importance of propensity to act within this model. For example if propensity to act is low, an individual's attitude toward entrepreneurship may be less favourable (Krueger, 1993).

Perceived desirability, perceived feasibility and propensity to act have been found to correlate with one another, and are used collectively in the EEM to predict EI (Krueger, 1993). The predictive validity of the model can be determined by a regression analysis where all variables are entered. Alternatively, researchers have also used structural equation modelling to determine whether or not the EEM shows a good fit as a model of EI prediction (Schlaegel & Koenig, 2013). As outlined by Shapero and Sokol (1982) the results obtained from the analysis may differ depending on the context and not all variables may have a significant effect on EI. The fact that not all predictors may be significant does not entail that the EEM is not a sufficient predictor of EI within the context of that study. Rather, it explains which predictors are more important in predicting EI within that context.

The Entrepreneurial Event Model as a predictor of Entrepreneurial Intention

Previous studies which have applied the entire EEM, or just one or two of the antecedents of the EEM, have found these antecedents to be significant predictors of EI. The following studies have all been conducted in different countries, this suggests that like the TPB, the EEM can also be applied within different cultural contexts and remain sufficient in predicting EI. University or higher education students were used as participants and the

sample size varied within each study (Byabashaija & Katono, 2011; Frank, Lueger & Korunka, 2007; Garg, Matshediso & Garg, 2011; Krueger, 1993; Godsey & Sebor, 2010).

The table below contains a summary of the studies and each study will be discussed thereafter. The popular studies will be discussed firstly, followed by more recent work.

Table 2

Research articles that used the antecedent(s) of the Entrepreneurial Event Model to predict Entrepreneurial Intention

Author and Year	Variables	Results
Krueger (1993)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Antecedents of the EEM 	Perceived desirability, perceived feasibility and propensity to act were significant predictors of entrepreneurial intention.
Byabashaija and Katono (2011)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Perceived desirability • Perceived feasibility • Perceived self-efficacy 	Perceived desirability and perceived feasibility were significant predictors of entrepreneurial intention.
Ang and Hong (2000)	<ul style="list-style-type: none"> • Entrepreneurial Intention (conceptualized as entrepreneurial spirit) • Risk taking propensity • Internal locus of control • Innovativeness • Persistence • Achievement Orientation • Independence • Love for money • Desire for security and status 	Risk taking propensity, internal locus of control, persistence, the love for money and desire for security were significant predictors of entrepreneurial intention.
Frank, Lueger and Korunka, (2007)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Internal locus of 	Among university students all personality traits, education, contextual factors

	<ul style="list-style-type: none"> • control • Need for achievement • Risk taking propensity • Social support • Innovativeness • Education • Role models 	and role models were significant predictors of entrepreneurial intention.
Krueger, Reilly and Carsrud (2000)	<ul style="list-style-type: none"> • Entrepreneurial Intention • Antecedents of the TPB • Antecedents of the EEM 	Attitude toward behaviour, perceived behavioural control, perceived desirability, perceived feasibility and propensity to act were significant predictors of entrepreneurial intention.

Krueger (1993) conducted a study which aimed to assess the sufficiency of the EEM. This study used a sample of 126 upper-division business university students. The study tested all three of the predicting variables of the EEM in a regression analysis. Furthermore, a t-test was conducted within the sample to measure the differences between students who the researcher believed to have entrepreneurial intent, and who did not have entrepreneurial intent. Apart from entrepreneurial intention which was measured by a single item where participants had the option of choosing ‘yes’ or ‘no’, all other variables were measured on a 7-point Likert scale. The only differences between the measures was the number of items where perceived desirability was measured with three items, perceived feasibility was measured with five items and propensity to act was measured with 20 items. The responses of these scales also differed across items (Krueger, 1993). The results indicated that all components of the EEM were significantly correlated with one another, and that perceived desirability, perceived feasibility and propensity to act significantly predicted EI. Moreover, Krueger (1993) found significant differences in the levels of perceived desirability, perceived

feasibility and propensity to act of students who had entrepreneurial intent compared to those who did not.

Byabashija and Katono (2011) studied the extent of perceived desirability, perceived feasibility and perceived self-efficacy in predicting EI among 167 college students. These researchers used an adapted version of Krueger's (1993) scales where they added items relating to perceptions of success and opportunities. Their results indicated that both perceived desirability and perceived feasibility are significant predictors of EI. Furthermore, perceived feasibility was found to be a stronger predictor of EI than perceived desirability. In a similar study, Godsey and Sebor (2010) also only considered the effects of perceived desirability and perceived feasibility on EI. Their study used a sample of students from schools, and the results indicated that both perceived desirability and perceived feasibility were significant predictors of EI as well.

Frank et al. (2007) conducted a study that investigated the role of personality traits, resources and process factors in business start-up intentions, start-up success and business success. Business start-up intentions can be conceptualised as EI. Among the personality traits used in the study was internal locus of control. The study used a sample of 875 students from secondary schools and universities in Australia. Internal locus of control was measured using a 5-point Likert scale, which taps into internal and social-external control styles. Findings suggested that internal locus of control was a significant predictor of business start-up intentions. A similar result was found in a study conducted by Ang and Hong (2000) who examined whether personality traits were significant predictors of entrepreneurial spirit. Their sample consisted of 205 undergraduate students from Hong Kong and Singapore. Their findings revealed internal locus of control as a significant predictor of entrepreneurial spirit among the students from Singapore.

Thus the antecedents of the model of EEM have been found significant predictors of EI among students. Only Krueger (1993) conducted a study using all three predicting variables. However, other studies support the notion that these variables can also independently predict EI among students. In a later study Krueger et al. (2000) again collectively tested all components of the EEM. This study will be discussed in the next section. The results from these studies suggest that like the TPB, the EEM can also be considered a sufficient framework for predicting EI.

Comparing and contrasting the Theory of Planned Behaviour and the Entrepreneurial Event Model

The TPB and EEM share a two similarities which are, namely, the association between their predicting variables and how these models control for the effects of extraneous variables. Researchers have argued that perceived behavioural control and perceived feasibility are both conceptually associated with perceived self-efficacy. Both perceived behavioural control and perceived feasibility conceptually measure a similar construct, that is whether an individual perceives if he or she is capable, and has the necessary skills to start a business (Krueger, 1993; Krueger et al. 2000; Schlaegel & Koenig, 2013). Attitude towards behaviour and perceived desirability have also been argued to be associated with each another. Attitudes towards behaviour usually shape perceived desirability, and the degree in which an individual finds the idea of starting a business as attractive, may influence his or her attitude (Krueger et al. 2000). It is for this reason researchers have often mixed the antecedents of these models, or substituted one predictor for another within the other model. This depends on the researcher, and how the predictors are conceptualised within their studies.

Many researchers are also sceptical about these models' sufficiency in predicting EI due to the role of control variables. However, Ajzen (2005) claims that the TPB takes external factors into account, such as demographics, contextual factors and personality traits or attributes. These control variables influence the antecedents of behavioural intention instead of being directly the latter. Therefore, these variables should not be included within the regression analysis, but rather independently have their relationship tested with the antecedents (Ajzen, 2005). Similarly, Shapero and Sokol (1982) argue that external variables are also taken into account by the EEM. The predicting variables are shaped by these external variables, and thus it is not required to include additional variables within the model analysis and testing. Yang (2013) demonstrated that this claim is supported when his research found a significant relationship between the antecedents and demographics such as past entrepreneurial work experience. Other researchers argue that the components of these models may not be the sole predictors of EI, and when additional variables are added to the model, more variance can be explained in EI (Luthje & Frank, 2003; Schlaegel & Koenig, 2013; Turker & Selcuk, 2009). This is still open to further enquiry.

Literature on comparing the Theory of Planned Behaviour and the Entrepreneurial Event Model

The most popular research which is referred to when comparing these models has been conducted by Krueger et al. (2000). These researchers compared the TPB and EEM to evaluate which model is a more sufficient predictor of EI. Both models were applied to a sample of 97 senior university business students (Krueger et al. 2000). The study made use of various scales which either had just one item or only a few. The response categories were either a 7-point Likert scale, or ranged from 0-100. Krueger et al. (2000) concluded that the EEM was a more sufficient predictor of EI than the TPB. However, it should be noted that one antecedent of the TPB was found not to be a significant predictor within this sample,

whereas all components of the EEM were found to be significant predictors, and thus this model tended to explain more of the variance in EI.

Schlaegel and Koenig (2013) conducted a meta-analysis which had the aim of comparing the results of 98 studies. The studies included in the analysis either applied variables from the TPB and EEM, the entire model of the TPB or EEM, or compared the models. Schlaegel and Koenig (2013) used statistical meta-analysis correlation and model structuring to determine which model was a more sufficient predictor of EI. Their results indicate that when including all the predicting variables into one model, attitude towards behaviour, subjective norms and perceived behavioural control revealed higher correlation coefficients with EI. However, perceived desirability, perceived feasibility and propensity to act showed significantly larger effect sizes.

This study intends to contribute to this area of research by investigating which model is a more sufficient predictor of EI within a South African context. The study will thus test the following hypotheses:

The Theory of Planned Behaviour:

H_{1a}: There is a positive relationship between the attitude toward behaviour, subjective norms, perceived behavioural control and entrepreneurial intention.

H_{1b}: Attitude toward behaviour predicts entrepreneurial intention.

H_{1c}: Subjective norms predicts entrepreneurial intention.

H_{1d}: Perceived behavioural control predicts entrepreneurial intention.

The Entrepreneurial Event Model:

H_{2a}: There is a positive relationship between perceived desirability, perceived feasibility, propensity to act and entrepreneurial intention.

H_{2b}: Perceived desirability predicts entrepreneurial intention.

H_{2c}: Perceived feasibility predicts entrepreneurial intention.

H_{2d}: Propensity to act predicts entrepreneurial intention.

Methods

This chapter describes the research design, participants, sampling technique and data collection procedure used in the study. Furthermore, each instrument that was used to measure the constructs of this study will be discussed.

Research Design

A descriptive cross-sectional design was used for this study. The data collected is quantitative in nature, and was collected by the use of a self-report questionnaire. This questionnaire was administered to students at the University of Cape Town as a hard copy, as well as electronically, via an online platform.

Participants and Sampling

The South African government has identified that the country's socioeconomic issues, such as unemployment, can be overcome by encouraging the youth of the country to become entrepreneurs. This is particularly important for those young South Africans who attend universities or other tertiary education institutions. As mentioned above, these individuals are in an environment where they can be more easily taught and guided in relation to starting and operating their own businesses (Mmesi, 2015). The use of final year students as participants has also been extensively applied within EI research. Researchers argue that these are the individuals which are at the point of making decisions regarding entering the work place or/and starting a business in the near future (Autio, Keeley, Klofsten, Parker & Hay, 2001; Krueger, Reilly & Carsrud, 2000; Varamaki, Joensuu, Tornikoski, & Viljammaa, 2013). Furthermore, researchers have narrowed the faculty type of these students down to commerce and engineering students. The justification behind this choice is due to the nature of commerce and engineering programmes, which usually consist of various business-related courses (Luthje, C., & Franke, N, 2003). In addition to these students, data will also be

collected from the students enrolled in the University of Cape Town's post graduate entrepreneurship programme. The entrepreneurship programme is categorised as a commerce programme, so these students are still recognised as commerce students. In conclusion, only final year commerce and engineering students at the University of Cape Town were asked to participate in this study. These students were not selected randomly, and instead, were approached and asked to voluntarily participate in the study. Therefore, this study implemented purposive sampling for the following reasons; firstly, randomly selecting students could not be accomplished in the given time for data collection. Secondly, this study required specific students (commerce and engineering) to participate in the research.

This study's sample ($n = 192$) consisted of 80 engineering and 104 commerce students. Among the 104 commerce students, 33 were enrolled in the post graduate entrepreneurship programme. The sample predominantly comprised of South African students (82%) and the rest were international students studying at the University of Cape Town (18%). One interesting statistic was obtained from the question "what is your plan for next year?" in the demographic section. This was a forced choice question where students could choose more than one of the four options which were namely; further your education, look for a job, start your own business or other (and asked to specify their plan). Missing data for this question accumulated to 23%. However, only 6% of students chose the option of starting their own businesses compared to 25% of students who wanted to further their education, and 30% who were planning on looking for a job. Students who chose other options (16%) were planning on travelling, or taking time off before making a decision. Other demographic descriptive statistics including current business ownership is listed in Table 3.

Table 3

Demographic Characteristics of sample (n = 192)

Demographic Characteristics		Number of Students	% of Students
Gender	Male	125	65.1
	Female	65	33.9
Race	Black	53	27.6
	Chinese	1	.5
	Coloured	17	8.9
	Indian	24	12.5
	White	88	45.8
	Prefer not to answer	7	3.6
	Age	20 - 22	125
23 - 24		51	27
25+		13	6.8
Currently own a business	Yes	38	20.1
	No	151	79.9

Procedure

The research was firstly proposed to the Faculty of Commerce Research Ethics Committee whereby the committee granted approval. Additionally, the research was also sent for approval to the Research Committee of the University of Cape Town. Once again, the research was approved, and therefore, the university's students could be used as the sample. Thereafter, the respective lecturers - or course conveners of final year commerce and engineering courses - were approached. These individuals were asked permission if the researcher could administer the questionnaire within their classes. This had to be completed within a 15 minute window. During these 15 minutes, the researcher informed the students about the study, and encouraged them to voluntarily participate in the research. Those students who were willing to participate were then handed the questionnaire, and were instructed how the questionnaire was to be completed. However, because only three lecturers allowing access to their students during their teaching time, a total of 126 students were sampled. Many lecturers and course conveners could not lend their teaching time due to the amount of course material which was still required to be covered.

A decision was then made to use an additional sampling method with the aim of increasing the sample size. Qualtrics, an online survey platform which provides survey creation, distribution and data analysis was used. The questionnaire was then uploaded to Qualtrics and could be distributed as a web link. Those same lecturers and course conveners were approached again and asked to upload the web link on the online student support platform, or send the web link as an email to their students. An agreement was reached with the lecturers and course conveners, and the questionnaire was distributed electronically. The lecturers encouraged students to then complete the questionnaire within their free time. The addition of this sampling method increased the sample size to 192 students.

Measures

Participating students were required to choose an answer for each statement, then complete a demographic section at the end of the questionnaire. The response format differed across the scales and ranged from a 3-point to 7-point Likert scale. For example; students would have to select not “likely at all” (1) to “very likely” (5) when evaluating their attitude towards behaviour. Whereas, when answering statements regarding their subjective norm, each student would choose between “not desirable” (1) to “desirable” (3). Each scale as well as the demographic section will be discussed below (See Appendix 1 for summary of scales and Appendix 2 for the Questionnaire used).

Entrepreneurial Intention. Autio, Keeley, Klosten, Parker and Hay’s (2001) 5-point Likert scale, which consists of four items, was used to measure the EI among the students. Responses ranges from “not likely at all” (1) to “already started a business” (5). These items aim to measure the likelihood of an individual starting a firm within one or five years, as well as on a part time or full time basis. Each item is answered in correspondence with the following statement “how likely is it that you will start a new firm of your own or with

friends?”. An example item is “start a business on a full time basis within one year from now”. The EI of an individual is then measured by calculating the mean of these four items. Autio et al. (2001) reported a Cronbach’s α of .82 for this measure when used to measure the EI among students from Finland, USA, UK and Sweden. Furthermore, Gird and Bagraim (2005) observed a Cronbach’s α of .71 in their study which measured the EI among students from South African universities.

The antecedents of the TPB was measured with Autio et al. (2001) scales. All items for the subjective norm and perceived behavioural control scales were used while only one item for attitude toward behaviour was used.

Attitude toward behaviour. This variable was measured with one item, which aimed to measure the individual’s attitude towards starting his own business. This item is measured on a 5-point Likert scale with responses ranging from “not likely at all” (1) to “very likely” (5). The item states, “How likely is it that you will move into an entrepreneurial career?” Originally, this scale consisted of four items where participants were asked the likelihood of when they moved into various careers, would it include an entrepreneurial one. However, Autio et al. (2001) as well as Gird and Bagraim (2005) observed poor factorial validity when using all these items within their study. Attitude towards behaviour was then measured using the one item mentioned above. Sackett and Larson (1990) argue that using a single item measure is acceptable when the construct being measured is one-dimensional, and appears unambiguous to the respondent. Furthermore, it was also argued that using a single item does not undermine the analysis if evidence of reliability and validity can be provided (Autio et al., 2001). All four items were still included in the questionnaire, despite only using the one item to measure this construct.

Subjective Norm. Across the scales used within Autio et al. (2001) research, this was the only one that was measured on a 3-point Likert scale. The subjective norm scale consisted of three statements, which measured an individual's perception of how their family and friends felt about him/her starting their own business. Autio et al. (2001) as well as Gird and Bagraim (2005) reported high Cronbach's α 's of .70 and .88 respectively.

Perceived behavioural Control. This construct was measured using four items on a 5-point Likert scale with responses ranging from "strongly disagree" (1) to "strongly agree" (5). According to Autio et al. (2001) this scale measures an individual's confidence in performing a specific behaviour. In this case, it refers to whether an individual is confident in starting a business. An example item is "I am confident that I would succeed if I started my own business". A Cronbach's α of .75 was observed for this scale (Autio et al., 2001).

Gird and Bagraim (2005) conducted a factor analysis for the EI, attitude towards behaviour, subjective norm and perceived behavioural control measures. All constructs significantly loaded on one factor with the exception of perceived behavioural control. However, Varamaki, Joensuu, Tornikoski and Viljamaa (2014) report evidence of factorial validity for Autio et al's. (2001) perceived behavioural control measure in a study conducted on university students in Finland. These evidences of validity support the use of Autio et al. (2001) scales within the context of this study.

Perceived Desirability. Krueger's (1993) 7-point Likert scale was used to measure the degree of desirability, and an individual's experiences in relation to starting his or her own business. This scale was adapted so that items specifically relate to the idea of starting a business. The scale consists of three items and the responses differ for each item. For example, item one states "I would love starting my own business", responses range from "I would hate doing it" (1) to "I would love doing it" (7). Whereas item two "how tense would

you be starting your own business” responses rather ranged from “very tense” (1) to “not tense at all” (7). Krueger (1993) used this scale in a study conducted on university business students and observed a Cronbach’s α of .77. Furthermore, a factor analysis revealed that all items significantly loaded onto one factor, which was assumed to be perceived desirability.

Perceived Feasibility. This was measured using another one of Krueger’s (1993) 7-point Likert scales. This scale consisted of five items, which collectively measured the degree to which an individual believes he can start his own business. Similarly, to the perceived desirability scale, responses for this scale also differed from item to item (See Appendix 1). Krueger’s (1993) study also reported a Cronbach’s α of .52 for this measure and a factor analysis revealed that all items significantly loaded onto one factor which was assumed to be perceived feasibility.

Propensity to act. Lee and Tsang’s (2001) 5-point Likert scale, which measures the internal locus of control was used. As mentioned above, Shapero (1975) stated that an individuals’ propensity to act can be conceptualised as one’s internal locus of control, thus it was considered acceptable to use this measure. The scale consists of three items, which measure the perceived ability of individuals’ to control events within their lives. Responses range from “disagree” (1) to “agree” (5) for this measure. Lee and Tsang (2001) observed a Cronbach’s α of .85 in a study conducted on Chinese entrepreneurs. A factor analysis conducted by Gird and Bagraim (2005) revealed that all items of this scale significantly loaded onto one factor. Thus it is concluded that the reliability and factorial structure of the scale is acceptable.

Demographic characteristics

Participating students were asked questions regarding gender, age, race, home language, faculty, current degree registration, their plan for the future, and whether or not they currently owned a business.

Statistical Analyses

The statistical analyses were performed using IBM SPSS Statistics 22. The factorial validity for each scale was assessed using principal axis factoring. Thereafter, the Cronbach's α was used to measure the internal consistency for each scale, and in turn evaluate the reliability of the scale. Once the validity and reliability were determined for each scale, descriptive statistics were then reported before the hypotheses were tested. Hypotheses testing used two correlation and multiple regression analyses, one for each model being tested.

Results

The aim of this research was to determine the sufficiency of two models which predict EI. These models will be tested once the structure and internal consistency of the scales are evaluated. Therefore, this chapter firstly provides a description of the structure analysis and reliability analysis for each scale. Thereafter, statistical testing will be conducted.

There is one important point of interest that must be mentioned before proceeding with this section. The data for the Entrepreneurial Event Model was only collected using the first sampling method, thus only 126 (sub-set of the sample) of the 192 students will be analysed when considering the Entrepreneurial Event Model. Whereas, the analyses for the TPB model will include the entire sample of 192 students. This was a result of technical problems encountered when uploading the questionnaire onto Qualtrics.

Structure and Reliability of Measurement Scales

Explanatory factor analysis (EFA) were conducted for this study as this type of multivariate analysis explores the underlying dimensions of both measured and latent variables (Norris & Lecavalier, 2010). The exploration of data is advantageous for two reasons; it may lead to the refinement of theories and/or it may result in the development of new theories. These ideas are usually achieved by observing the unexpected correlations within each variable's measurement model, or between the variables themselves (Williams, Onsman & Brown, 2010). When using EFA, decisions concerning extraction and rotation method must also be considered. Moreover, before conducting the analyses, three assumptions should be met regarding scale type and the existence of outliers within the data set and sample size.

Various methods of extraction exist nevertheless, and Principal Axis Factoring (PAF) was considered the most suitable method of analysis for this study. PAF is an extraction

method that aims to extract the least amount of factors by comparing squared multiple correlations between all items included in the analysis. This method is among the more commonly used methods of extraction, and is considered the best method of extraction for determining the underlying factors related to a set of items (Burton & Mazerolle, 2011). Once the method of extraction was determined, which rotation method to employ was then considered. This study used Varimax rotation, as it would assume that the factors were uncorrelated (Williams, Onsman and Brown, 2010). Rotation can only be used if the factor analysis extracts more than one factor. By using rotation, the axes would shift, whereby the factor loadings for each item would change. The new set of factor loadings made it easier to determine which items were more offensive, and thus could be removed (Williams, Onsman and Brown, 2010). Factor loadings were interpreted according to Merenda (1997) who suggested that factor loadings $>.30$ can be considered as acceptable for social science research. If one factor could not be extracted from any one of these scales, even after iterations, the scales factorial structure would be considered questionable, and the measured variable would not be used in statistical analyses.

Three assumptions were checked before conducting the EFA. Firstly, it was established that all scales used to measure the dependent and independent variables were interval scales. Secondly, outliers were identified using box plots whereby a total of nine outliers were found. Six were deleted from the data set ($n = 186$) (See Appendix 3, Figure 3.1 – 3.4). It was decided not to remove cases 2, 55 and 72. When these participants' responses were screened, it appeared that they only scored low on perceived desirability, responding normally across other scales. All this meant was that these participants had little or no desire to start their own business. This was further supported as these participants tended to also score low on the attitude toward behaviour measure.

Lastly, the assumption of having an adequate sample for factor analysis will be discussed. Sample size is recognised as an important requirement for factor analysis. In spite of this, it remains a topic many researchers tend to disagree upon. Earlier in the 19th century researchers would use a rule of thumb to determine the adequacy of sample size; 100 participants was considered poor, 200 participants was considered fair, 300 participants was considered good, 500 participants was considered very good, and 1,000 or more participants was considered as excellent (Comrey, 1973). MacCallum, Widaman, Zhang, and Hong (1999) argue that these rules can be misleading. Determining the appropriate sample size is more complicated than following such rules, thus other methods were implemented for this study. Two commonly used and accepted methods which take these complexities into account are the sample to variable ratio method or the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy/Bartlett's Test of Sphericity. For this study, the KMO Measure of Sampling Adequacy/Bartlett's Test of Sphericity will be used to test if the sample size is suitable for factor analysis. If the KMO index is more than .05 and Bartlett's Test of Sphericity is significant ($p < .05$) then the sample size is suitable for factor analysis (Williams, Onsman & Brown).

Once the structure of each scale was established, a reliability analysis was then run on each scale. Reliability was determined by using the Cronbach's α which is a measure of internal consistency. Thus it measures how well items of a scale group together, or are correlated with each other (Field, 2009). This study will interpret the Cronbach's α according to Nunnally (1978), who argued when the α is below .50 the scale is considered unreliable, when the α is greater than .50, but less than .60, the reliability is questionable - and if the α is greater than .60, the scale can be considered as reliable. Therefore, in the case where the α for a scale is below .50, the variable measured by that scale will not be used in hypothesis testing.

Entrepreneurial Intention. PAFs were firstly conducted on the Entrepreneurial Intention scale. The analysis revealed sufficient KMO indexes of .57. Bartlett’s test of sphericity results were regarded as acceptable as well ($F_6 = 276.90$; $p < .001$), thus indicating that it was appropriate to conduct a factor analysis. The four items also loaded onto one factor. The factor accounted for 60.53% of the explained variance and had an eigenvalue of 2.42 (see Table 4 for factor loadings). This factors was assumed to be EI. The reliability analysis revealed a sufficient Cronbach’s α of .78, and according to Nunnally (1978) this implies the scale has good reliability. The mean of the four items could thus be calculated.

Table 4

Factor loadings for the Entrepreneurial Intention Scale Items

Items	Factor Loadings
1. Start a business on a full-time basis within one year from now.	.53
2. Start a business on a full-time basis within five years.	.77
3. Start a business on a part-time basis within one year from now.	.80
4. Start a business on a part-time basis within five years.	.66

Note: Factors were extracted using Principal Axis Factoring. $n = 186$

Attitude toward Behaviour. No validity, or reliability analyses, were performed on attitude toward behaviour as this variable was measured using a single item. However, evidence should still be provided to support the use of a single item measure. Autio et al. (2001) argue that reliability is a prerequisite for validity, therefore, if validity can be demonstrated, the item can be considered reliable. Validity was demonstrated when Autio et al. (2001) observed a significant relationship between attitude toward behaviour and perceived behavioural control in their study. This suggested evidence of criterion and construct validity. Furthermore, no correlation was observed between Attitude toward

Behaviour and age. Whereas on the other hand, a significant correlation between Perceived Behavioural Control and age was observed, thus suggesting evidence of discriminant validity. According to Autio et al. (2001) these findings suggest that the reliability should then also be sufficient for this single item measure.

Subjective Norms. A PAF was conducted on the Subjective Norms scale. The factor analysis was considered appropriate as a KMO index of .63 was observed, and Bartlett’s test of sphericity revealed acceptable results ($F_6 = 73.63$; $p < .001$). PAF extracted one factor that accounted for 39.40% of the explained variance and had an eigenvalue of 1.18 (see Table 5 for factor loadings). All three items loaded onto the one factor which was assumed to be subjective norms. The reliability analysis revealed a Cronbach’s $\alpha = .64$ which is regarded as acceptable reliability (Nunnally, 1978). The mean of the four items could thus be calculated.

Table 5

Factor loadings for the Subjective Norms Scale Items

Items	Factor Loadings
1. If I became an entrepreneur my family would consider it to be...	.52
2. If I became an entrepreneur my friends would consider it to be...	.54
3. If I became an entrepreneur other people close to me would consider it to be...	.78

Note: Factors were extracted using Principal Axis Factoring. $n = 186$

Perceived Behavioural Control. The next PAF was conducted on the Perceived Behavioural Control scale. A KMO index of .71 along with Bartlett’s test of sphericity results ($F_6 = 139.20$; $p < .001$) indicate that it is appropriate to conduct a factor analysis. The analysis revealed one factor which all four items loaded onto (see Table 6 for factor loadings). The factor accounted for 39.33% of the explained variance, and had an eigenvalue

of 1.57. It was assumed this factor was Perceived Behavioural Control. The reliability analysis revealed a Cronbach's $\alpha = .70$, which is considered to be good reliability (Nunnally, 1978). A mean was then calculated per student which represented their overall score for this variable.

Table 6

Factor loadings for the Perceived Behavioural Control Items

Items	Factor Loadings
1. I am confident that I would succeed if I started my own business.	.78
2. It would be easy for me to start my own business.	.57
3. To start my own business would probably be the best way for me to take advantage of my education.	.50
4. I have the skills and capabilities required to succeed as an entrepreneur.	.62

Note: Factors were extracted using Principal Axis Factoring. $n = 186$

Perceived Desirability. Using a PAF, factorial validity was established for the Perceived Desirability scale. An acceptable KMO index (.56), as well as significant results for Bartlett's test of sphericity ($F_3 = 73.93$; $p < .001$) meant conducting a factor analysis was considered appropriate. The analysis revealed one factor which accounted for 60.33% of the explained variance, and had an eigenvalue of 1.81. All three items loaded onto this factor, which was assumed to be Perceived Desirability (see Table 7 for factor loadings). Thereafter, a reliability analysis found a Cronbach's $\alpha = .66$ and the scale was then considered to be reliable (Nunnally, 1978). A mean for each student was then calculated in order to represent their Perceived Desirability.

Table 7

Factor loadings for the Perceived Desirability Items

Items	Factor Loadings
1. I would love doing starting my own business	.90
2. How tense would you be starting your own business	.33
3. How enthusiastic would you be starting your own business	.71

Note: Factors were extracted using Principal Axis Factoring. $n = 123$

Perceived Feasibility. A PAF was conducted on the Perceived Feasibility scale. A KMO index of .71 and Bartlett's test of sphericity results ($F_{10} = 127.39$; $p < .001$) indicate that it is appropriate to conduct a factor analysis. The factor analysis only revealed one factor. This factor accounted for 48.11% of the explained variance and had an eigenvalue of 2.41. All four of the remaining items loaded onto the factor, which was assumed to be Perceived Feasibility (see Table 8 for factor loadings). The reliability analysis was then conducted and it found a Cronbach's $\alpha = .72$, which was considered acceptable (Nunnally, 1978).

Table 8

Factor loadings for the Perceived Feasibility Items

Items	Factor Loadings
1. How hard do you think it would be starting your own business?	.48
2. How certain of success are you?	.80
4. How overworked would you be if you started your own business?	.46
5. Do you know enough to start your own business	.60
6. How sure are you of yourself?	.61

Note: Factors were extracted using Principal Axis Factoring. $n = 123$

Propensity to Act. A PAF was conducted on the Propensity to Act scale. The analysis revealed that both the KMO index (.54) and the results from Bartlett's test of sphericity ($F_3 = 19.57$; $p < .001$) was considered appropriate for a factor analysis to be conducted. One factor was found which accounted for 48.16% of the explained variance, and had an eigenvalue of 1.44. This factor was assumed to be Propensity to Act. However, item one and three showed weak factor loadings (see Appendix 4, Table 4.1). When a reliability analysis was conducted, the scale revealed a Cronbach's $\alpha = .44$. This implies that the scale demonstrates poor reliability and the variable measured should not be used in hypothesis testing (Field, 2009; Nunnally, 1978). Moreover, the scales inter-item correlations were below .30 which serves as further evidence that the scale should be considered as unreliable (see Appendix 4, Table 4.2 for inter-item correlations) (Pallant, 2004). Therefore, Propensity to Act was not used in any further analyses.

Descriptive Statistics

The following section contains descriptive statistics for each scale that will be used for hypothesis testing. Using SPSS, the minimum (Min), maximum (Max), mean and standard deviation (SD) was calculated for each variable (see Table 9).

Table 9

Descriptive Statistics (Variables of the TPB and EEM)

	<i>n</i>	Min	Max	Mean	SD
Entrepreneurial Intention	186	1.00	4.50	2.43	.81
Subjective Norm	186	1.67	3.00	2.65	.40
Attitude toward behaviour	186	1.00	5.00	3.32	1.20
Perceived behavioural control	186	1.50	5.00	3.30	.73
Perceived Desirability	123	1.00	7.00	4.66	1.34
Perceived Feasibility	123	2.00	6.40	3.92	1.01

Note: Subjective Norm measured on 3-point Likert scale. Attitude toward behaviour, perceived behavioural control measured on 5-point Likert scale. Perceived desirability and feasibility measured on 7-point Likert scale.

The means for each scale tends to be above the midpoint on each scale, this indicates that students tended to score quite highly on each scale. Table 9 shows that the entrepreneurial intention scale was the only measure where students tended to score below the scales midpoint. This statistic is aligned with the demographic characteristic where only 6% of students indicated they were planning on starting their own business the following year. However, when the students were categorised according to their faculty affiliation, a

difference between means appeared. Students who were enrolled in the entrepreneurship programme had a mean score of 3.13, whereas commerce and engineering students had mean scores of 2.34. This indicates that students who are enrolled in the entrepreneurship programme may be inclined toward starting their own business.

Correlation Analysis

A Pearson correlation was used to analyse the association between the variables. Two sets of correlation analyses were conducted, one for each model. The only variable that was not included in the analysis was propensity to act due to the scale demonstrating poor reliability. The analyses tested the following hypotheses:

H_{1a}: There is a positive relationship between the attitude toward behaviour, subjective norms, perceived behavioural control and entrepreneurial intention.

H_{2a}: There is a positive relationship between perceived desirability, perceived feasibility and entrepreneurial intention.

As seen in Table 10 the Pearson correlation analysis revealed positive significant relationships between attitude toward behaviour, subjective norms, perceived behavioural control and EI. All relationships had a $p < .001$ other than the relationship between EI and subjective norms which had a $p < .05$. The relationship between EI and subjective norms also had the weakest correlation ($r = .17$) among this set of variables. Nonetheless, H_{1a} is supported.

Table 10

Correlation Matrix for the components of the Theory of Planned Behaviour

	1	2	3	4
Entrepreneurial Intention (1)	.78			
Attitude toward Behaviour (2)	.73***			
Subjective Norms (3)	.17*	.28***	.64	
Perceived Behavioral Control (4)	.65***	.65***	.31***	.70

Note: Scale interval consistencies (Cronbachs Alpha) on the diagonal. The internal consistency for Attitude for behaviour has not been provided as a single item was used to measure this variable.

*** represent a correlation that has significance level of $p < .001$.

** represent a correlation that has significance level of $p < .01$.

* represent a correlation that has significance level of $p < .05$.

Table 11 shows the Pearson correlation analysis, which was conducted on perceived desirability, perceived feasibility and EI. The Pearson correlation analysis revealed significant positive relationships between each of these variables. Similar to the relationships between the variables in the TPB, all relationships between the variables of the EEM had significance levels of $p < .001$. Thus H_{2a} is also supported.

Table 11

Correlation Matrix for the components of the Entrepreneurial Event Model

	1	2	3
Entrepreneurial Intention (1)	.78		
Perceived Desirability (2)	.51***	.66	
Perceived Feasibility (3)	.55***	.65***	.72

Note: Scale interval consistencies (Cronbachs Alpha) on the diagonal.

*** represent a correlation that has significance level of $p < .001$.

** represent a correlation that has significance level of $p < .01$.

* represent a correlation that has significance level of $p < .05$.

These relationships provide evidence that multicollinearity exists between the antecedents of each model. Multicollinearity refers to the correlation between predicting variables, and where they are able to linearly predict a dependent variable with more accuracy (George & Mallery, 2010). The existence of low to moderate multicollinearity is a criterion which defines a successful regression model. However, when predicting variables are highly correlated with each other, it tends to increase the variance of the coefficient estimates. This may violate the structure of a multiple regression model (Field, 2009).

Regression Analysis

This section will discuss the two linear multiple regression analyses that were conducted. The first analysis addresses H_{1b} , H_{1c} and H_{1d} , which includes attitude toward behaviour, subjective norms and perceived behavioural control as the predictors of EI. This will test the sufficiency of the TPB as a model for EI prediction. The second analysis will test H_{2b} and H_{2c} , which includes perceived desirability and perceived feasibility as predictors of

EI. These two predictors will test the sufficiency of the EEM as a model for predicting EI. H_{2d} was the only hypothesis not tested. Both regression analyses will use EI as the dependent variable.

Once the regression analyses were run, the data was screened for outliers, and to determine whether assumptions were met. According to Field (2009) five assumptions should be met for each regression model. If these assumptions are not met, they may violate the parameters of the regression model. These assumptions include; no or low multicollinearity, independent errors, sample size, normality, homoscedasticity and linearity. Firstly, the results will be interpreted and discussed. Thereafter, outliers and assumptions will be discussed. The analyses will test the following hypotheses:

H_{1b}: Attitude toward behaviour predicts entrepreneurial intention.

H_{1c}: Subjective norms predicts entrepreneurial intention.

H_{1d}: Perceived behavioural control predicts entrepreneurial intention.

H_{2b}: Perceived desirability predicts entrepreneurial intention.

H_{2c}: Perceived feasibility predicts entrepreneurial intention.

The Theory of Planned Behaviour (*n* = 186)

Significant results ($F_{185} = 86.49$, $p < .001$) was found by the multiple regression analysis where $R^2 = .59$ and the adjusted $R^2 = .58$ (see Table 12). However, only attitude toward behaviour ($M = 3.32$, $SD = 1.19$, $n = 186$) and perceived behavioural control ($M = 3.30$, $SD = .73$, $n = 186$) were the revealed to be significant predictors of EI ($M = 2.43$, $SD = .81$, $n = 186$) in this model. The analysis also indicated that attitude toward behaviour ($\beta = .55$) was a stronger predictor than perceived behavioural control ($\beta = .31$). Subjective norms ($M = 2.65$, $SD = .40$, $n = 186$) did not significantly predict EI. As mentioned above the

correlation between subjective norms and EI ($r = .17$) was also the weakest compared to the other relationships within the TPB model. The correlation statistic offered a certain degree of reason as to why subjective norms were not found to be a significant predictor of EI. Thus final year UCT commerce and engineering students' EI is significantly predicted only by attitude toward behaviour and perceived behavioural control. The model of the TPB only achieves certain degree of sufficiency in predicting EI and therefore, only H_{1b} and H_{1d} is supported.

Table 12

Regression Model Summary for the Theory of Planned Behaviour Model

Variable	β	SE	$t(182)$	p
Attitude toward behaviour	.55	.04	8.62	.000
Subjective Norm	-.08	.10	-1.68	.094
Perceived Behavioural Control	.31	.07	4.92	.000

Note: $n = 186$, $R = .76$, $R^2 = .58$, $F(3,182) = 86.48$. Post hoc power analysis revealed a power of 1 and effect size (f^2) of 1.38 at a significance level of .05

The Entrepreneurial Event Model ($n = 123$)

Significant results ($F_{122} = 37.96$, $p < .001$) were found for this multiple regression as well, where $R^2 = .39$ and the adjusted $R^2 = .38$ (see Table 13). Perceived desirability ($M = 4.66$, $SD = 1.34$, $n = 123$) and perceived feasibility ($M = 3.92$, $SD = 1.01$, $n = 123$) both significantly predicted EI ($M = 2.46$, $SD = .81$, $n = 123$). Moreover, perceived desirability ($\beta = .36$) was found to be stronger predictor of EI than perceived feasibility ($\beta = .32$). These results suggest that the EI of final year UCT commerce and engineering students can be significantly predicted by perceived desirability and perceived feasibility. Therefore both H_{2b} and H_{2c} are supported.

Table 13

Regression Model Summary for the Entrepreneurial Event Model

Variable	β	SE	$t(121)$	p
Perceived Desirability	.36	.06	3.85	.001
Perceived Feasibility	.32	.07	3.43	.000

Note: $n = 124$, $R = .67$, $R^2 = .45$, $F(2,121) = 49.77$. Post hoc power analysis revealed a power of 1 and effect size (f^2) of 0.81 at a significance level of .05

Outliers and influential cases

Standardized residuals and Cook's distance were the statistics used to screen for outliers and influential cases. Outliers and influential cases usually have extreme scores, which tend to lead to bias estimates within a regression model. It is important that these cases are removed before conducting the analysis. Standardized residuals refer to when residuals are converted to standard deviation units (Field, 2009). By using standardized residuals, any score can be converted into a value that can be compared to universal guidelines. These guidelines are used as a framework, which indicates what is considered an acceptable value, and thus not categorised as an outlier. Normally distributed samples should have 95% of the scores fall between -1.96 and +1.96, 99% of scores fall between -2.58 and +2.58, and 99.90% of scores fall between -3.29 and +3.29. Cases where the standardized residual is greater than 3, may be of concern and this case should be removed from the data set (Field, 2009). The standardised residuals of the dataset all fell in the range of -2.58 and +2.58. Therefore, no outliers were identified. Cook's distance added further supporting evidence that no outliers and influential cases existed within the data sets. According to Cook and Weisberg (1982), Cook's distance statistic is used to identify outliers and influential cases by measuring each observations effect on linearity and residual values. A Cook's distance statistic greater than 1 is an indication that a case has a substantial influence on the parameters of a regression

model. This study had no Cook's distance values greater than 1, therefore concluding that no outliers or influential cases existed within the data sets.

Multiple Regression Analysis Assumptions

The data from variables included in the regression analyses was firstly screened in order to test the assumptions mentioned above. Multicollinearity was tested according to Field (2009) who suggested using the Variance Inflation Factor (VIF) and Tolerance Values (TV). A VIF greater than 10 and a TV below .1 indicates that this assumption is not met (Field, 2009). The variables of Group 1, attitude toward behaviour (VIF = 1.77, TV = .56), subjective norms (VIF = 1.12, TV = .89) and perceived behavioural control (VIF = 1.80, TV = .55) all had revealed acceptable results for the testing of this assumption. The variables of Group 2, perceived desirability (VIF = 1.73, TV = .58) and perceived feasibility (VIF = 1.73, TV = .58) also met Field's (2009) criteria. Therefore, the assumption of no multicollinearity was met for both groups.

Independent errors were evaluated using the Durbin-Watson statistic. Field (2009) recommended using the Durbin-Watson statistic as an indicator for independent errors. If the Durbin-Watson statistic is between the values of 1 and 3 then the assumption of independent errors is met (Durbin & Watson, 1951). EI revealed a Durbin-Watson statistic of 1.96 for the regression model of the TPB and 1.73 for the regression model of the EEM. Thus supporting that the assumption of independent errors for both groups is met. The assumption of calculating an appropriate sample size will be estimated using Tabachnick and Fidell (2001) formula. According to Tabachnick and Fidell (2001) the assumption of sample size can be met if the sample is greater than 8 multiplied by the number of independent variables ($n > 8m$). The analysis for the TPB used three independent variables, therefore $186 > 74$. The

analysis for EEM used two independent variables where $123 > 66$. This indicates that the sample size is greater and that this assumption is also met for both groups.

Normality was tested using histograms and P-P plots. Field (2009) suggests that the assumption of normality is met when a histogram forms a bell curve, and when data points form a linear pattern on a P-P plot. This assumption was met for both regression models as the graphs adhered to this criteria (see Appendix 5, Figure 5.1 and 5.2 and Appendix 6, Figure 6.1 and 6.2). Lastly, homoscedasticity and linearity was tested using a scatterplot which displayed the points of standardised predicted values against standardised residuals. When the points on this scatterplot are randomly dispersed and do not form any sort of pattern then this assumption is met (Field, 2009). Appendix 5, Figure 5.3 displays the scatterplot for the regression model of the TPB and Appendix 6, Figure 6.3 displays the scatterplot for the regression model of the EEM. The scores are randomly dispersed on both scatterplots, thus supporting that this assumption is met for both regression models.

Power Analysis

A post hoc power analysis was conducted using G*Power for each regression analysis. The statistical power refers to the probability that the null hypothesis will be rejected when it is false (Faul, Erdfelder, Lang & Buchner, 2007). Cohen (1965) recommended that a power statistic greater than .80 at a significance level of .05 can be considered as an acceptable probability for correctly rejecting the null hypothesis. According to Cohen (1988) when analysing the findings of a regression analysis (R^2), effect sizes (f^2) of .02, .15 and .35 can be recognised as small, medium and large respectively. The findings of the power analysis conducted in this study is described below where a significance level of .05 was used. The regression analysis for the TPB, which tested if attitude toward behaviour, subjective norms and perceived behavioural control predicted EI had an effect size (f^2) of

1.38 and a power of 1. This indicates that the results of the regression analysis for the TPB has a medium effect size (f^2). The regression analysis for the EEM, which tested perceived desirability and perceived feasibility, predicted EI had an effect size (f^2) of 0.61 and a power of 1. Thus the results of the regression analysis for the EEM also had a medium effect size (f^2). Both statistical tests yielded acceptable power, so it can be assumed that the null hypotheses for both models were correctly rejected.

Comparing the Predicting Models of Entrepreneurial Intention

When comparing the results from the two regression analyses of this study, the TPB model (Adjusted $R^2 = .58$, $f^2 = 1.38$) predicts EI to a greater extent than the EEM (Adjusted $R^2 = .38$, $f^2 = 0.61$). This comparison can only be recognised as a descriptive statistic, rather than a significant difference as no statistical test was performed to analyse the difference between the two regression coefficients. Furthermore, only two predictors were found to be significant within the TPB model, and only two predictors were included within the EEM due to one scale revealing low reliability. This should also be taken into consideration in future research and will be discussed in more detail in the following section.

Discussion

The aim of this study was to test the sufficiency of the TPB and EEM in predicting EI among final year university students. The test results of the two models would then be compared in order to draw a conclusion regarding which model is more sufficient in predicting EI. This chapter will provide an overview of the findings and discuss these test results. Thereafter the limitations and practical implications of the study will be provided.

Summary of Main Findings

The results of this study show that only H_{1b}, H_{1d}, H_{2b} and H_{2c} is supported. Both the TPB and EEM significantly predict EI among final year students. Each model was found to have two significant predictors, instead of the expected three predictors. When comparing the two models, the results of this study indicate that the TPB (Adjusted $R^2 = .58$, $p < .001$) is more sufficient in predicting EI than the EEM (Adjusted $R^2 = .38$, $p < .001$). This finding contradicts Krueger et al. (2000) found the EEM (Adjusted $R^2 = .41$, $p < .001$) to be the stronger predicting model of EI over the TPB (Adjusted $R^2 = .35$, $p < .001$). Subjective norms was also found not to be a significant predictor of EI, however all three independent variables of the EEM were revealed to be significant predictors (Krueger et al., 2000).

The Theory of Planned Behaviour

Attitude toward behaviour, subjective norms and perceived behavioural control were all found to significantly correlate with each other, thus H_{1a} was supported. This result is consistent with Ajzen (1985) who suggested that the components of the TPB are related to one another. Only attitude toward behaviour and perceived behavioural control significantly explained some of the variance in EI (Adjusted $R^2 = .58$, $p < .001$). However, the importance of attitude toward behaviour, subjective norms and perceived behavioural control can differ between behaviours and situations (Ajzen, 1991). Therefore, regardless of subjective norms

not being a significant predictor, the TPB can still be considered a viable model of EI prediction in this study.

Attitude toward behaviour

Across the three predictors of the TPB, attitude toward behaviour explained the most variance in EI ($\beta = .55, p < .001$). Among this sample of final year students at the University of Cape Town, attitude toward behaviour can be recognised as more important than perceived behavioural control in determining their level of EI. These students were more concerned about having a favourable appraisal of engaging in entrepreneurial behaviour, rather than having the ability to start a business. When their appraisal of starting a business is favourable they are likely to show higher levels of EI. This result differs from both Autio et al. (2001) and Krueger et al. (2000), who report perceived behavioural control as being the strongest predictor of EI. Perceived behavioural control accounted for more of the variance in EI over and above attitude toward behaviour in their research. The reasons why their results may differ could be due to their sample, the context of the study and socio-cultural factors. For example, the sample Autio et al. (2000) used in their study mainly consisted of technology students, whereas this study considered engineering and commerce students. Technology students may perceive the ability to start a business as important, whereas commerce and engineering students find a favourable appraisal of a business as more important.

On the other hand, Gird and Bagraim (2005) found similar results to this study, where attitude toward behaviour ($\beta = .55, p < .001$) explained more variance than perceived behavioural control ($\beta = .21, p < .05$). This offers an explanation as to why the results differed from earlier studies. Their study was also conducted in South Africa and used a similar sample which consisted of commerce students. So it makes sense that their results

would be similar to the results found in this study. The findings could be due to the similar cultural and contextual factors experienced by these students in South Africa.

Subjective Norms

This was the only predictor of the TPB that was not found to have a significant effect and had the weakest correlation with EI ($r = .17$), thus revealing that the students did not perceive social pressure from friends and family to start a business as important. These normative beliefs, therefore, did not have an influence on determining their level of EI. This result has also been reported by Krueger et al. (2000) and Autio et al. (2001) who found subjective norms to not be a significant predictor of EI. Whereas, Gird and Bagraim (2005) report that subjective norms ($\beta = .13$, $p < .05$) is in fact a significant predictor of EI. However, in the study conducted by Gird and Bagraim (2005), subjective norms was reported to be the weakest predictor of EI. Consequently, it is not unusual for this component of the TPB model to demonstrate minor, or no influence, in determining the level of EI among university students.

Krueger et al. (2000) explain that subjective norms may be influenced by the personality and nature of an entrepreneur. Entrepreneurs are known to be more individualist and have a tendency toward inner-directness. Therefore, an entrepreneur can perform behaviours without the concern of others, such as friends and family. Furthermore, Buttar (2015) reported that it is not unusual for the influence of subjective norms to differ across samples from different countries. For example, a sample of Pakistani students revealed that subjective norm had a greater influence on EI compared to a sample of Turkish students. This result may be due to the cultural differences within these countries where socio-cultural structures within Pakistan are collectivist, whereas Turkish students tend to be more individualist.

The sample of South African students may be high in individualism, with the result that these students are either minimally influenced, or not at all influenced by the opinions of friends and family. Similar arguments could probably be made about the studies conducted by Krueger et al. (2000) and Autio et al. (2001), where the socio-cultural climate tends toward being individualist within America and Europe. Where samples of students tend toward being individualist, subjective norms may have a minor influence or no influence in forming EI.

Perceived Behavioural Control

This predictor was also found to have a significant influence on EI within the sample of this study. Perceived behavioural control ($\beta = .31, p < .001$) entails that students felt their ability to start a business is an important factor in determining their EI. When students believed that they had the ability to start a business, and could achieve this with greater ease, their EI then also tended to be higher. Gird and Bagraim (2005) also report perceived behavioural control to explain the most variance in EI after attitude toward behaviour. However, this finding is contradictory to research conducted by Autio et al. (2001) and Krueger et al. (2000). The studies conducted by Autio et al. (2001) and Krueger et al. (2000) found perceived behavioural control to be the strongest predictor of EI rather than attitude toward behaviour. Again, their results could be attributed to the difference in their sample, the context of the study and the role of socio-cultural factors. European and American students may perceive their ability to start a business differently to that of South African students. These perceptions may be formed through socio-cultural factors, or even as a result of differences in the level and type of education offered within these different countries. For example, South African students may not be exposed to the same level of business knowledge compared to that of European and American university students. Hence, South

African students may understand the skills involved in starting a business differently to that of European and American university students.

The Entrepreneurial Event Model

The EEM consists of three predicting variables, but as mentioned above, only two were considered when conducting the statistical analyses. The propensity to act scale revealed poor psychometric properties, and so the variable propensity to act was not used in any further analyses. Perceived desirability and perceived feasibility were found to be significantly correlated with each other. Thus H_{2a} was supported. Similarly to the TPB, all components of the EEM collectively predict EI (Shapero, 1975, Shapero, 1982). This supports the findings of the correlation analysis as predictors should be correlated with each other in order to collectively explain variance in a dependent variable. Collectively, perceived desirability and perceived feasibility did significantly explain some of the variance of EI in this study (Adjusted R² = .38, $p < .001$).

Perceived Desirability

This component of the EEM was found to be the strongest predictor of EI within this model ($\beta = .36$, $p < .001$). As a result, the attractiveness of the idea of starting a business is considered the most important determinant of EI within the context of this study. When students find the idea of starting a business appealing, they are likely to have higher levels of EI. Krueger (1993) found a similar result when he applied the EEM model to a sample of business students. Krueger (1993) concluded that external factors have the strongest influence on perceived desirability, thus identifying this variable as being the more important determinant of EI. External factors could be recognised as culture and other socio-economic variables. Perceived desirability is also conceptually associated with attitude toward behaviour from the TPB. Therefore, it makes theoretical sense that perceived desirability

would explain more of the variance in EI in this study as attitude toward behaviour was also the strongest predictor of EI in the TPB (Krueger et al., 2000).

But in a later study, Krueger et al. (2000) found that perceived desirability explained less variance in EI than perceived feasibility. The second study conducted by Krueger et al. (2000) used a different sample of business students, and was conducted seven years after the first study. The desirability of starting a business may have changed during this time, and students may have been less influenced by external factors. Alternatively, the new sample of students may have just perceived their ability to start a business as being more important. This differs from the perceptions of South African students, who seem to be more influenced by external factors - such as culture and other socio-economic variables. Therefore, perceived desirability would tend to play a larger role in determining EI over their confidence in starting a business. For example, South African students may be more influenced by economic factors, as these students live in a developing country. European and American students live in developed countries, which have stronger economies. Consequently, they may be less concerned about their businesses not being successful due to economic reasons.

Perceived Feasibility

This component of the EEM was also found to be a significant predictor of EI ($\beta = .32, p < .001$). Students who felt personally capable of starting a business would then show high levels of EI. Similarly to the conceptualisation of perceived desirability, perceived feasibility is conceptually associated with perceived behavioural control. Perceived behavioural control was found to explain less variance than attitude toward behaviour. This can be related to the finding within this model where perceived feasibility explains less variance than perceived desirability. This finding is however consistent with the results of

Krueger's (1993) study, where he also found perceived desirability to explain more variance in EI than perceived feasibility.

As mentioned above, this finding is not consistent with research conducted by Krueger et al. (2000). South African students weigh their ability to start a business as less important than their desire to start a business. This may be a result of the sample of South African students being comprised of both engineering and commerce students, whereas the sample used in the study conducted by Krueger et al. (2000) only consisted of business students. It could be possible that engineering students are not as confident in their ability to start a business compared to commerce and business students. For that reason, the overall perceived feasibility of the sample was lowered. Another reason extending to the discussion above is where a difference exists regarding the influence of culture and other socio-economic variables between South African and American students. This cultural and socio-economical difference may be an explanation as to why the sample of South African students find perceived feasibility to be the weaker predictor of their EI.

Propensity to act

Excluded from the statistical testing due to the scale revealing poor internal consistency, this study was not able to demonstrate the influence of propensity to act on EI. Propensity to act was conceptualised as the internal locus of control in this study. Shapero (1982) suggested that the internal locus of control scale could be used as a possible proxy measure in the absence of better measures. However, Lee and Tsang's (2001) scale revealed low internal consistency when considering the sample used in this study. This finding did not correspond with previous research that found the scale to be a reliable measure within a similar sample of South African students (Gird & Bagraim, 2005). The possibility exists that participants of this study could have misinterpreted the items, which could have led to

inconsistent responses among participants. Furthermore, the items should have been tailored to specifically measure achievement-orientated behaviour in relation to starting a business, rather than a general conception an individual has in controlling events within his life. Conceptualising propensity to act as the internal locus of control may have caused issues in measurement.

Theoretical Implications

The first theoretical implication is that this research contributes to the area of research testing models that predict EI. It provides further evidence that the TPB can be applied within EI research. More importantly, it provides support that the TPB can be applied within a South African context. This is an important finding as a limited amount of literature exists where the TPB has been applied in South Africa (Gird & Bagraim, 2005). Relatively similar findings to Gird and Bagraim (2005) provide further support to which are the most important determinants of EI among South African students. Unfortunately, no South African literature is available that has made use of the EEM to predict EI. So this research is the first to provide findings of this model within a South African context. Understanding an alternative model of EI prediction may allow EI to be better understood, and possibly, to be more accurately predicted within further research (Krueger, 1993).

The results also offer an explanation as to why the TPB has been applied in EI research more so than the EEM. This research has found the TPB to be the more sufficient predictor of EI, but this is not consistent with earlier research. Krueger et al. (2000) conducted the only research that has compared these two models, and their findings contradict the results of this study. This research contributes to the understanding on the choice of model which should be used to predict EI. The difference of results between this study and Krueger et al. (2000) may be due to socio-cultural characteristics of the sample,

and the exclusion of propensity to act. Nonetheless, it still builds onto the knowledge base of EI prediction and what model could be considered more important in explaining variance. It also provides evidence that the TPB is the more appropriate model to apply within a South African context than the EEM.

Practical Implications

Intention has been found to be one of the best predictors of behaviour (Ajzen, 1991). Thus understanding the determinants of EI will provide schools, universities and governments with the opportunity to increase entrepreneurial activity within a country. For example, this study has found attitude toward behaviour and perceived desirability to be the strongest predictors of EI. This raises the point of discussion on what universities can do to change the perceptions and attitudes of these students. Luthje and Frank (2003) suggest that entrepreneurial attitudes may be influenced by educators and powerful role models. Universities and schools could inform educators to assume their roles as advocates and bring about this change. Allowing successful business people as guest speakers, where they share their success stories, may also increase the attractiveness of starting a business among students. Furthermore, other authors suggest that universities should create an atmosphere that encourages students to become entrepreneurs (De Jorge-Moreno, Castillo & Triguero, 2011). Understanding that determinants - such as perceived feasibility and perceived behavioural control have a significant influence on EI provide further opportunity for increasing entrepreneurial activity. If universities can advance entrepreneurial thinking by incorporating relevant learning material into courses, this could change the perceptions of students. These students may feel more encouraged and confident about starting a business (Klapper & Tegtmeier, 2010).

Limitations

This research has limitations regarding sampling, variable measurement and understanding the influence of EEM. These limitations will be discussed below.

Sampling Limitations

There were three sampling issues in this study. Firstly, using purposive sampling meant that variability and bias could not be controlled within the sample. The sample of students was not chosen randomly, and therefore, the results of the study cannot be generalised beyond the sample (Acharya, Prakash & Nigam, 2013). Secondly, using cross sectional research design meant that the data collected would only be a representation of the time period it was collected in. De Jorge-Moreno et al. (2011) suggest using a longitudinal study, as this would provide more richness to the results, and would capture EI in more depth. Thus the results of this study are only relevant at the time the data was collected. The EI among these students may change over time, and for a more accurate assessment of the EI, these students should be reevaluated. Lastly, the use of a sub-group or sub-set of the sample within this study is another limitation. The variance explained in EI can be compared across the sample and the sub-set, and it would be preferable to consider the entire sample when comparing the two models of EI prediction. Using the entire sample for hypothesis testing should allow the results to be more consistent between the two models. Taking into account the 186 students for the analysis of the EEM may reveal different findings compared to only considering a sub-set of the sample.

Measurement Limitations

Attitude towards behaviour was measured using one item in this study. The use of one item is widely accepted across different research fields. Despite this, using one item does

result in limitations. Researchers argue that using a single item may not offer as much detail and depth as multiple item measures do (Oshangbemi, 1999). Sloan, Aaronson, Cappelleri and Varricchio (2002) suggest that single item measures can be used according to the context of the research. For example, it is considered appropriate to use a single item for global measures. These researchers do go on to suggest that using a single item may not capture the richness of a construct, and that single item measures must be carefully considered before being used. As a consequence, attitude toward behaviour may have been captured in limited depth and detail within the context of this study.

The other measurement issue, which has been a limitation to this study, has been the use of Lee and Tsang's (2001) internal locus of control scale. Propensity to act is conceptualised as the desire to gain control through action (Shapero, 1982). It may be more appropriate to use a scale aimed at measuring desirability of control, rather than the internal locus of control. Krueger (1993) recommends using Burger's (1985) desirability of control scale. This scale has revealed sound psychometric properties in previous studies. The main reason why the Lee and Tsang's (2001) internal locus of control scale was used in this study is because the scale revealed sound psychometric properties when used in an earlier South African study (Gird & Bagraim, 2005).

Entrepreneurial Event Model.

The full sufficiency of this model could not be tested, as the scale used to measure propensity to act revealed a poor internal consistency. Unlike the TPB, where subjective norms were found not to be a significant predictor of EI, all components of this model were still tested. The possibility exists that by using an alternative scale to measure propensity to act, all components of the EEM can then be included in the analysis. If this is done, the effectiveness of the model can be tested to a greater extent.

Suggestions for future research

When measuring the components of these models it is recommended that other scales be used for propensity to act, attitude toward behaviour and subjective norms. As discussed it may be more appropriate to measure propensity to act using a scale that aims to measure desirability of control. Using a proxy scale, such as a scale which measures the internal locus of control, should be avoided. Preference should be given to a scale that captures the conceptualisation of the construct to a greater degree (Krueger, 1993). Attitude toward behaviour could still be measured using a single item, but including another multiple item scale could offer finding richer results (Sloan et al., 2002). The multiple measure could also be compared to the single item measure with the aim of evaluating the measurement properties of using a single item to measure attitude toward behaviour. Using two scales to measure attitude toward behaviour may add value to future research. Lastly, it is recommended to measure subjective norms in greater depth. Autio et al. (2001) used a scale consisting of three items that only probed an individual's perception of family, friends and other people that the individual regarded as close. However, Krueger et al. (2000) suggest that including items relating to an individual's broader network and social capital may offer further insight into measuring subjective norms. A scale, which considers an individual's broader network and social capital, in addition to friends and family, could be a more accurate measurement conceptualisation of this construct.

Descriptive statistics also suggest that there may be an influence of education and past experience on EI. Ajzen (1991) explains that the TPB accounts for other variables that may influence intention, such as personality traits and past experiences. However, many researchers argue against this, and insist that other extraneous variables do play a role in determining EI (Luthje & Frank, 2003). Hence, education and past experiences could be included in future studies, as both models may not explicitly account for these variables.

Studies have already shown that both education and past experience do, in fact, significantly predict EI (Luthje & Frank, 2003). Understanding the role of these variables among South African students may offer further explanation relating to the determinants of EI. It could also be compared to the variance explained by the models of EI prediction, and thus weigh the importance of education and past experience (Krueger et al., 2000).

The last recommendation is to compare the two multiple regression analyses results using statistical procedures. This study compared the sufficiency of the two models of EI prediction by comparing the variance they explained in EI. Consequently, this difference between the models can only be considered as a numerical rather than a significant difference. Employing a statistical procedure to compare the results would reveal whether or not the difference is indeed significant. This may add value to the model comparison, and further the understanding of the differences which exist between these two models.

Conclusion

The purpose of this study was to examine two models and their ability to predict EI among final year students in South Africa. Furthermore, by using the results of the regression analyses, it could be determined which model is a more sufficient predictor of EI within a South African context. The findings of this study indicate that both models are indeed sufficient predictors of EI. Compared to other research, the results of this study differs to a certain degree. However, the difference found is considered relevant due to the influence of cultural and social factors. Both Ajzen (1991) as well as Shapero and Sokol (1982) infer that these findings are to be expected, and so this does not mean that the models are not sufficient predictors of EI. From this research it can be concluded that cultural and social factors within a country play a large role in determining which variables are more important in predicting EI, and in turn, entrepreneurial behaviour. Lastly, this study found the TPB to be the more

sufficient predictor of EI. Again, this does not mean that the EEM is not sufficient in predicting EI, only that it explains less variance than the TPB. Future research on EI within South Africa should, nonetheless, consider applying the TPB rather than the EEM.

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Appendix 1: Summary of Original Scales

Entrepreneurial Intention

Autio, Keeley, Klosten, Parker and Hay's (2001). All statements are rated on a 5-point Likert scale ranging from 1 (not at all likely) to 5 (already started a business).

1. Start a business on a **full-time** basis within one year from now.
2. Start a business on a **full-time** basis within five years.
3. Start a business on a **part-time** basis within one year from now.
4. Start a business on a **part-time** basis within five years.

Attitude toward behaviour

Autio, Keeley, Klosten, Parker and Hay's (2001). All statements are rated on a 5-point Likert scale ranging from 1 (not at all likely) to 5 (very likely).

1. Corporate career (working for a large, established, private sector employer).
2. Civil servant career (working for a government agency or other public agency).
3. Entrepreneurial career (starting up and or managing a business of my own or with family or friends, self-employed).
4. Academic career (working at a university or a research institution).

Subjective Norm

Autio, Keeley, Klosten, Parker and Hay's (2001). All statements are rated on a 3-point Likert scale ranging from 1 (not desirable) to 3 (desirable).

1. If I became an entrepreneur my family would consider it to be...
2. If I became an entrepreneur my friends would consider it to be...
3. If I became an entrepreneur other people close to me would consider it to be...

Perceived Behavioural Control

Autio, Keeley, Klosten, Parker and Hay's (2001). All statements are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

1. I am confident that I would succeed if I started my own business.
2. It would be easy for me to start my own business.
3. To start my own business would probably be the best way for me to take advantage of my education.
4. I have the skills and capabilities required to succeed as an entrepreneur.

Perceived Feasibility

Krueger (1993). All statements are rated on a 7-point Likert scale. Each item has a different response.

1. How hard do you think it would be (very hard—very easy).
2. How certain of success are you (very certain of success—very certain of failing).
3. How overworked would you be (very overworked—not overworked at all).
4. Do you know enough to start a business (know everything—know nothing).
5. How sure of yourself (very sure of myself—very unsure of myself).

Perceived Desirability

Krueger (1993). All statements are rated on a 7-point Likert scale. Each item has a different response.

1. I would love doing it (I would love doing it—I would hate doing it).
2. How tense would you be (very tense—not tense at all).
3. How enthusiastic would you be (very enthused—very unenthusiastic).

Propensity to Act

Lee and Tsang (2001). All statements are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

1. When I get what I want, it is usually because I have worked for it.
2. My life is mostly determined by my own actions.
3. I can pretty much control what will happen in my life.

Appendix 2: The Questionnaire



Are you a final year student? I need your input!

I'm completing my Masters degree and want to find out the entrepreneurial intention among final year students at the University of Cape Town.

It is only with your help that my research can make a positive contribution. I hope to build on the understanding of what drives young individuals to become entrepreneurs within our country.

The study has ethics approval and your participation is completely voluntary and anonymous. You may withdraw at anytime.

The survey will take approximately 12 minutes to complete.

Thanks for your help

Fawwaaz Davids

Are you a final year student?

- Yes
- No

If you are not a final year student, thank you for your time and please return this questionnaire.

Let's begin! Help me understand your entrepreneurial intention by answering the following questions.

Read the two statements below and rate your intention to start your own business by choosing a number between 0 (low) to 100 (high). Write this number in the space provided.

1. Estimate the probability that you will start a new business in the next 5 years?

2. How desirable do you think it would be for you to start your own business within the next 5 years?

For each statement below tick (✓) the box which best represents how you feel.

<i>How likely is it that you will start a new firm of your own or with friends? Please assess the option of starting different types of businesses (part time and full time) using this scale.</i>		Not at all likely	Not very likely	Likely	Very likely	Already started a firm
3.	Start a business on a full-time basis within one year from now					
4.	Start a business on a full-time basis within five years from now					
5.	Start a business on a part-time basis within one year from now					
6.	Start a business on a part-time basis within five years					

For each statement below tick (✓) the box which best represents how you feel.

<i>How likely is it that you will move into these business sectors? Please assess the option of different businesses sectors using this scale.</i>		Not at all likely	Not very likely	Neutral	Likely	Very likely
7.	Corporate career (working for a large, established, private sector employer)					
8.	Civil servant career (working for a government agency or other public agency)					
9.	Entrepreneurial career (starting up and or managing a business of my own or with family or friends, self-employed)					
10.	Academic career (working at a university or a research institution)					

For each statement below tick (✓) the box which best represents how you feel.

<i>If I became an entrepreneur...</i>		Not desirable	Neutral	Desirable
11.	my family would consider it to be...			
12.	my friends would consider it to be...			

13.	other people close to me would consider it to be...			
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For each statement below tick (✓) the box which best represents how you feel.

<i>Consider the following options:</i>		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
14.	I am confident that I would succeed if I started my own business					
15.	It would be easy for me to start my own business					
16.	To start my own business would probably be the best way for me to take advantage of my education					
17.	I have the skills and capabilities required to succeed as an entrepreneur					
18.	When I get what I want, it is usually because I have worked for it					
19.	My life is mostly determined by my own actions					
20.	I can pretty much control what will happen in my life					
21.	I search out new technologies, processes, techniques and/or product ideas					
22.	I generate creative ideas					
23.	I promote and champion ideas to others					
24.	I investigate and secure funds needed to implement ideas					
25.	I develop adequate plans and schedules for the implementation of new ideas					
26.	I am innovative					

27.	I have access to capital to start a business					
For each statement below tick (✓) the box which best represents how you feel.						
<i>Consider the following options:</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
28.	I have good social networks that could be utilised if I decide to start a business					
29.	I have access to supporting information to help me start a business					
<i>How much confidence do you have in your ability to...?</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
30.	Come up with a new idea for a product or service					
31.	Identify the need for a new product or service					
32.	Design a product or service that will satisfy customer needs and wants					
33.	Estimate customer demand for a new product or service					
34.	Determine a competitive price for a new product or service					
35.	Estimate the amount of start-up funds and working capital necessary to start my business					
36.	Design an effective marketing/advertising campaign for a new product or service					
37.	Get others to identify with and believe in my vision and plans for a new business					
38.	Network — i.e. make contact with and exchange information with others					

For each statement below tick (✓) the box which best represents how you feel.

<i>How much confidence do you have in your ability to...?</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
39.	Clearly and concisely explain verbally/in writing my business idea in everyday terms					
40.	Supervise employees					
41.	Recruit and hire employees					
42.	Delegate tasks and responsibilities to employees in my business					
43.	Deal effectively with day-to-day problems and crises					
44.	Inspire, encourage, and motivate my employee					
45.	Train employees					
46.	Organize and maintain the financial records of my business					
47.	Manage the financial assets of my business					
48.	Read and interpret financial statements					

For each statement below tick (✓) the box which best represents how you feel.

<i>Consider the following options</i>		Strongly Disagree	Disagree	Fairly disagree	Fairly agree	Agree	Strongly agree
49.	I like to increase my status and prestige						
50.	I have high ambition						
51.	I like to achieve something and get recognition for it						

For each statement below tick (✓) the box which best represents how you feel.

<i>Consider the following options:</i>		Not true at all	Fairly true	Mostly true	Exactly true
52.	I become easily discouraged by failures				
53.	I have access to resources to help me start a business				
54.	When my performance does not satisfy, I start to question my abilities				
55.	I often feel unable to deal with problems				
56.	Failures can shake my self-confidence for a long time				
57.	When I am confronted with unusual demands, I feel helpless				
58.	When I do not immediately succeed in a project, I quickly lose hope for a good outcome				

For each statement below tick (✓) the box which best represents how you feel.

<i>Consider the following options:</i>		Not true at all	Fairly true	Mostly true	Exactly true
59.	When I can't solve a task, I blame my lack of abilities				
60.	When I fail at something, I tend to give up				
61.	When my work is criticized, I feel depressed				
62.	I often feel overpowered by obstacles or troubles				
63.	I lose faith in myself when I make mistakes				
64.	If I do not instantly succeed in a matter, I am at a loss				

For each question below tick (✓) the box which best represents how you feel by choosing between the numbers 1 (weak) and 7 (strong).

65. How hard do you think it would be to start your own business?

Very hard	1	2	3	4	5	6	7	Very easy
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66. How certain of success are you?

Very certain of failing	1	2	3	4	5	6	7	Very certain of success
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For each question below tick (✓) the box which best represents how you feel by choosing between the numbers 1 (weak) and 7 (strong).

67. How overworked would you be if you started your own business?

Very overworked	1	2	3	4	5	6	7	Not overworked at all
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68. Do you know enough to start a business?

Know nothing	1	2	3	4	5	6	7	Know everything
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69. How sure are you of yourself?

Very unsure of myself	1	2	3	4	5	6	7	Very sure of myself
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70. I would love starting my own business?

I would hate doing it	1	2	3	4	5	6	7	I would love doing it
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71. How tense would you be to start your own business?

Very tense	1	2	3	4	5	6	7	Not tense at all
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For each question below tick (✓) the box which best represents how you feel by choosing between the numbers 1 (weak) and 7 (strong).

72. How enthusiastic would you be to start your own business?

Very unenthusiastic	1	2	3	4	5	6	7	Very enthused
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For each statement below tick (✓) the box which best represents how you feel by choosing between the numbers 1 (strongly agree) and 9 (strongly disagree).

73. Safety first

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
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74. I do not take risks with my health

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
----------------	---	---	---	---	---	---	---	---	---	-------------------

75. I prefer to avoid risks

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
----------------	---	---	---	---	---	---	---	---	---	-------------------

76. I take risks regularly

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
----------------	---	---	---	---	---	---	---	---	---	-------------------

For each of the statement below tick (✓) the box which best represents how you feel by choosing between the numbers 1 (strongly agree) and 9 (strongly disagree).

77. I really dislike not knowing what is going to happen

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
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78. I usually view risks as a challenge

Strongly agree	1	2	3	4	5	6	7	8	9	Strongly disagree
----------------	---	---	---	---	---	---	---	---	---	-------------------

79. I view myself as a...

Risk avoider	1	2	3	4	5	6	7	8	9	Risk taker
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For each statement below choose one word out of the two that best describes how you feel about starting a business and then tick (✓) the box.

80.	<input type="checkbox"/> Worthless	OR	<input type="checkbox"/> Worthwhile
81.	<input type="checkbox"/> Disappointing	OR	<input type="checkbox"/> Rewarding
82.	<input type="checkbox"/> Negative	OR	<input type="checkbox"/> Positive

For each statement below tick (✓) the box if you currently are engaging in that behaviour or have engaged in that behaviour in the past.

83.	Attending a “start your own business planning” seminar or conference	<input type="checkbox"/>
84.	Writing a business plan or participating in seminars that focus on writing a business plan	<input type="checkbox"/>
85.	Putting together a start-up team	<input type="checkbox"/>
86.	Looking for a building or equipment for the business	<input type="checkbox"/>
87.	Saving money to invest in the business	<input type="checkbox"/>
88.	Developing a product or service	<input type="checkbox"/>

Tell me about yourself:

89. Your gender?

- Male
- Female
- Other

90. Your race?

- Black
- Chinese
- Coloured
- Indian
- White
- Prefer not to answer

91. Your home language?

- Afrikaans
- English
- Xhosa
- Other, please specify

92. Your nationality?

93. Your age (in years)?

94. Your faculty?

- Commerce
- Engineering
- Humanities
- Science
- Law
- Other, please specify _____

95. What degree are you registered for?

96. What is your plan for next year?

- Further your education
- Look for a job
- Start your own business
- Other, please specify _____

97. Do you currently own your own business?

- Yes
- No

If yes, what type of business do you own?

Appendix 3: Box plots

Figure 3.1: Box plot of Entrepreneurial Intention

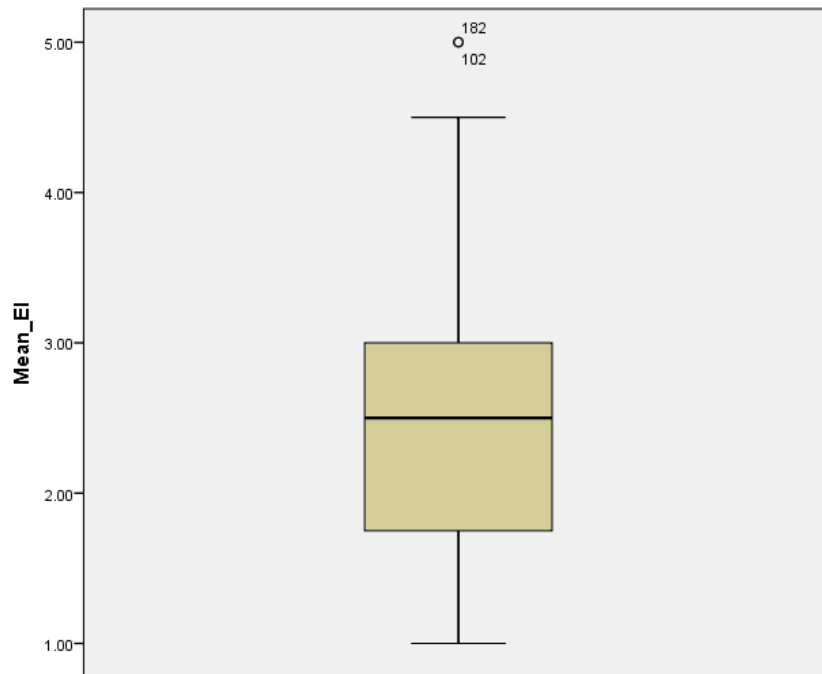


Figure 3.2: Box plot of Subjective Norms

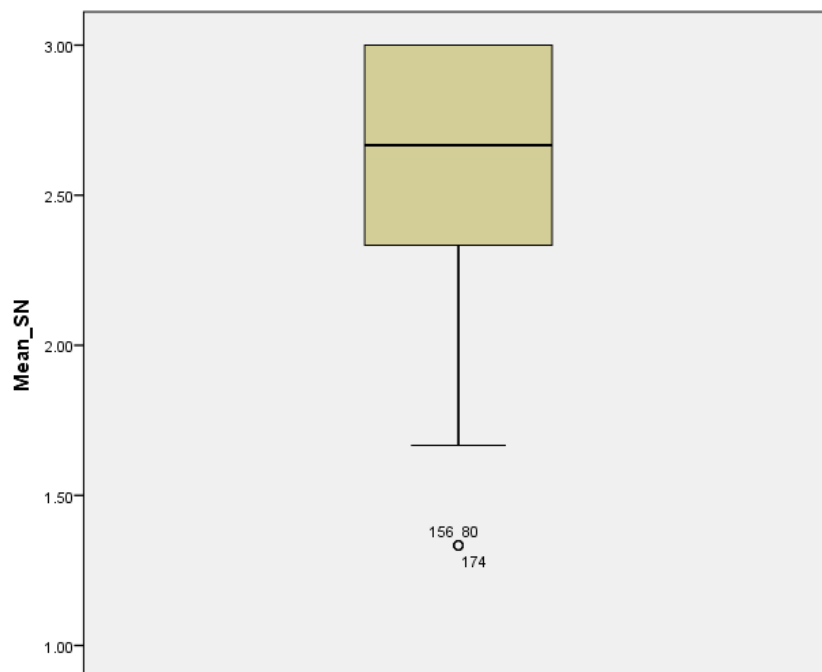


Figure 3.3: Box plot of Perceived Feasibility

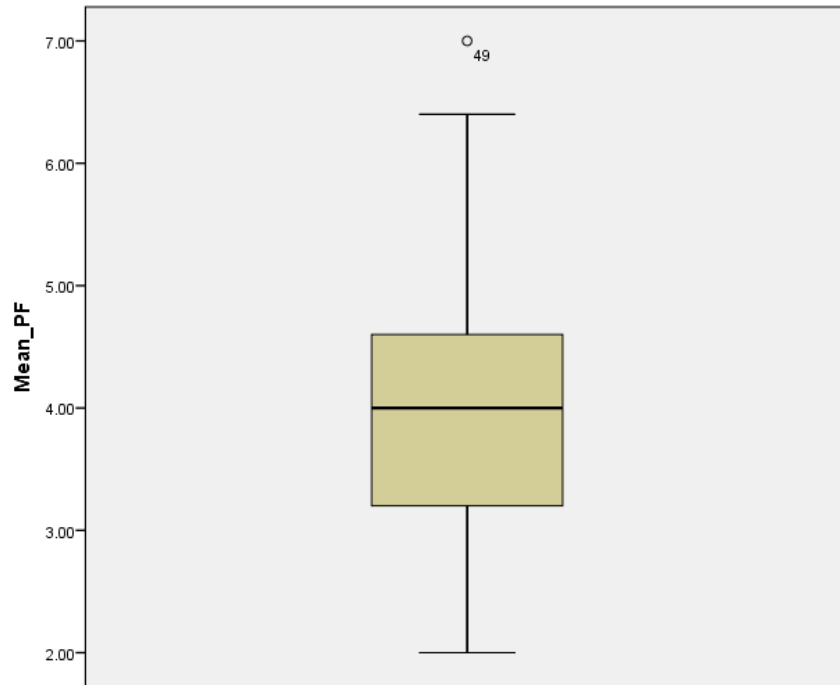
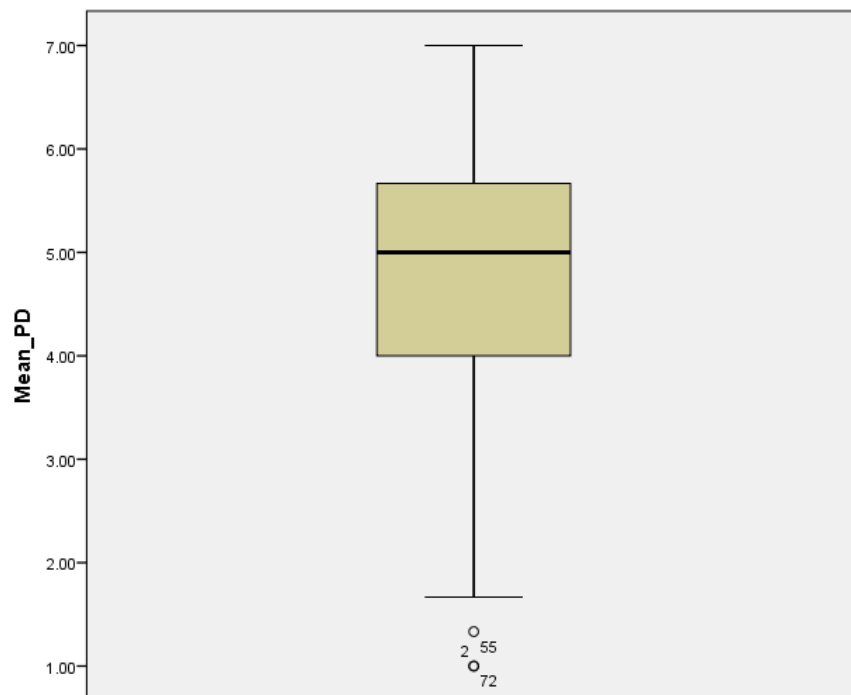


Figure 3.4: Box plot of Perceived Desirability



Appendix 4: Factor Loadings and Inter-Item Correlation Tables for Propensity to Act Items

Table 4.1

Factor loadings for the Propensity to Act Items

Items	Factor Loadings
1. When I get what I want, it is usually because I have worked for it.	.38
2. My life is mostly determined by my own actions.	.81
3. I can pretty much control what will happen in my life.	.26

Table 4.2

Corrected Inter-Items correlations between Propensity to Act items

	PTA 1	PTA 2	PTA 3
PTA 1	1.00	.31	.07
PTA 2	.31	1.00	.22
PTA 3	.07	.22	1.00

Appendix 5: Assumptions of the Theory of Planned Behaviour regression model

Figure 5.1: Histogram providing evidence of normality

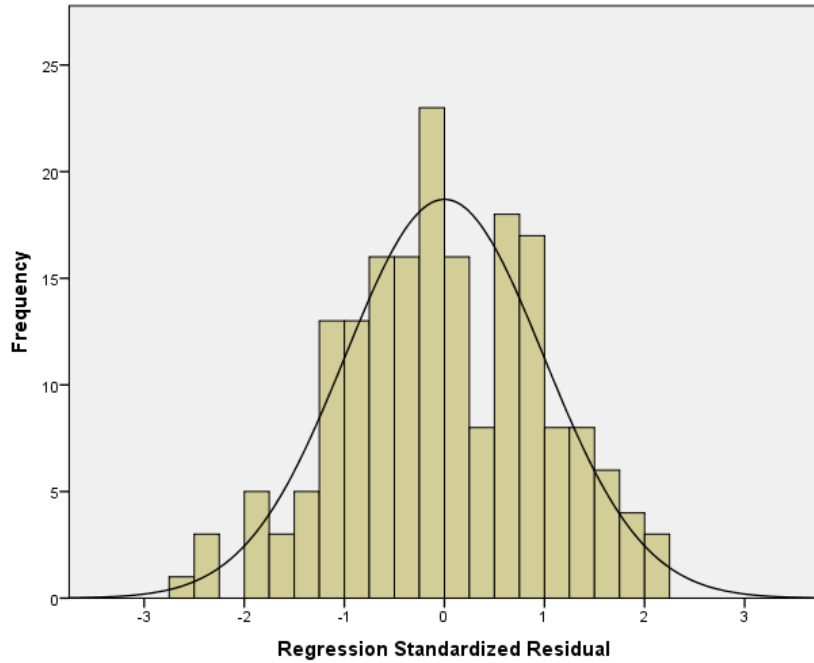


Figure 5.2: P-P plot providing evidence of normality

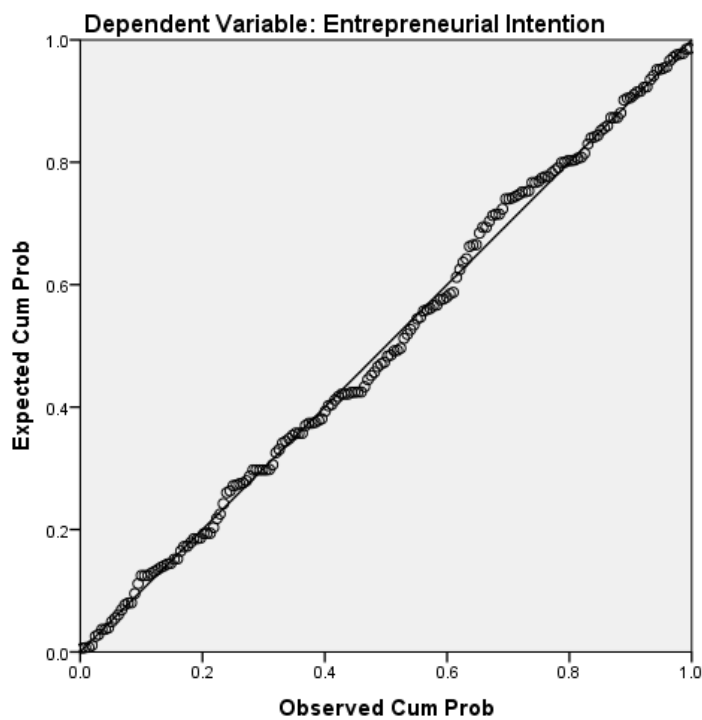
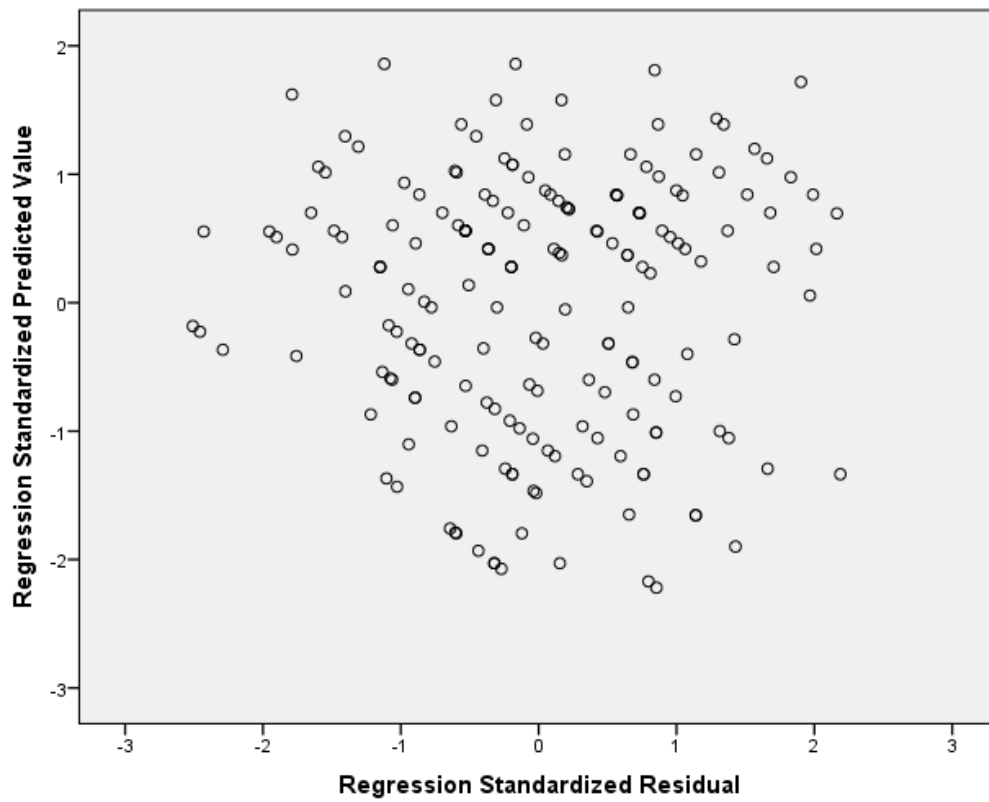


Figure 5.3: Scatterplot of Standardized Predicted Values vs Standardized Residuals of Entrepreneurial Intention providing evidence of homoscedasticity



Appendix 6: Assumptions of the Entrepreneurial Event Model regression analysis

Figure 6.1: Histogram providing evidence of normality

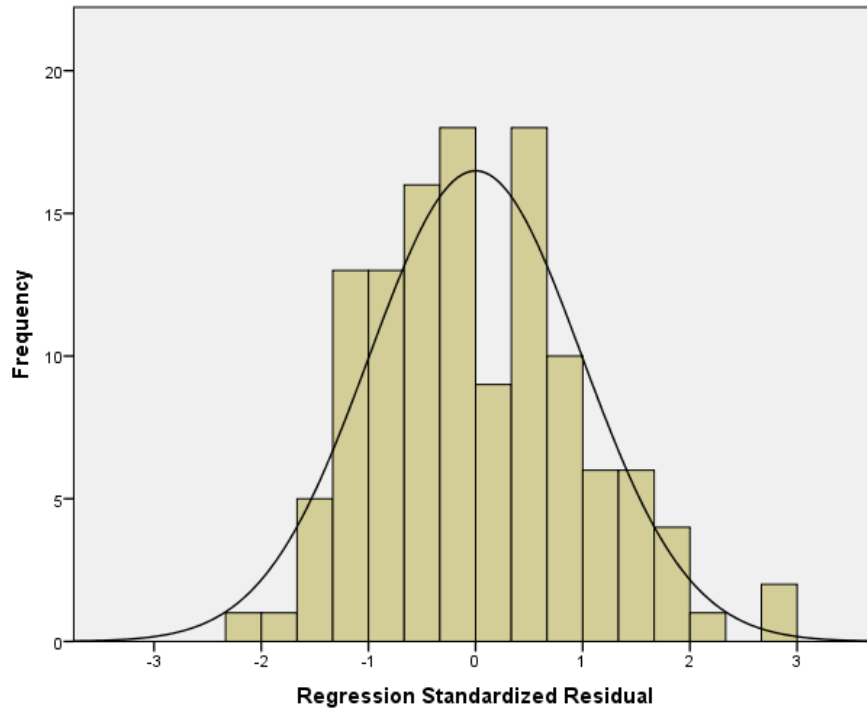


Figure 6.2: P-P plot providing evidence of normality

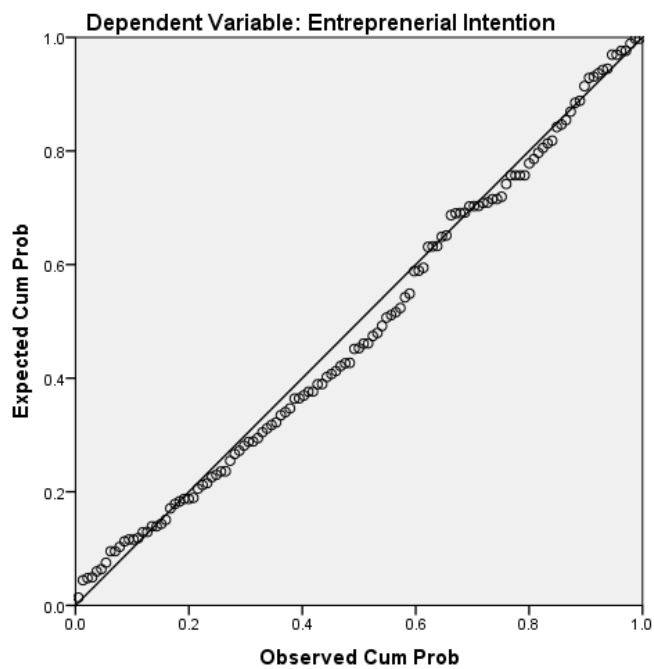


Figure 6.3: Scatterplot of Standardized Predicted Values vs Standardized Residuals of Entrepreneurial Intention providing evidence of homoscedasticity

