

University of Cape Town



School of Management Studies

DO PERSONALITY TRAITS PREDICT ENTREPRENEURIAL INTENTION AND PERFORMANCE?

CAROL MOULD

(MLDCAR001)

A dissertation submitted in partial fulfilment of the requirements for the award of the
Degree of Master of Commerce in Organisational Psychology

Faculty of Commerce

University of Cape Town

2013

COMPULSORY DECLARATION:

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

Signature: _____

Date: _____

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

ACKNOWLEDGEMENTS

I would like to acknowledge the support and guidance of my supervisors, Dr. Ines Meyer and Prof. Jeff Bagraim, who both provided much-needed motivation and encouragement to keep going through the peaks and troughs of the year. I would also like to thank them for the collegial style in which they approached the co-supervision of my dissertation, and for taking a genuine interest in the project.

I would also like to extend my thanks to Tracey Chambers and Tracey Gilmore from The Clothing Bank who graciously allowed me to conduct the study amongst the participants of their organisation. They were very supportive in facilitating access to the participants as well providing the secondary data used in the study. I look forward to sharing the findings of this study with them and I hope that the results will add real value to the programme in the future.

Finally, I would like to express my sincere thanks to my family for their unconditional support and patience throughout a very busy year.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	2
ABSTRACT	5
CHAPTER 1: INTRODUCTION	6
CHAPTER 2: LITERATURE REVIEW	9
Entrepreneurship	9
Entrepreneurial intention	10
Entrepreneurial performance	11
Personality traits and performance in the workplace	11
Personality traits and entrepreneurship	12
Summary	15
Hypotheses	17
CHAPTER 3: METHOD	18
Research context	18
Research design	19
Participants	19
Measures	20
Procedure	24
Data capturing and analysis	25
CHAPTER 4: RESULTS	27
Initial Analysis	27
Reliability	27
Dimensionality	30
Descriptive statistics	35

Correlation analysis	36
Multiple Regression Analysis	38
Summary of Results	43
CHAPTER 5: DISCUSSION	45
Personality traits and entrepreneurial intention	45
Personality variables	46
Age and years of education	50
Summary of predictive validity of personality variables for entrepreneurial intention	52
Predictive validity of personality traits for entrepreneurial performance	52
Personality traits and entrepreneurial performance	53
Personality variables	53
Tenure	56
Summary	57
Limitations and suggestions for future research	57
CHAPTER 6: CONCLUSION	59
Implications for practice	59
REFERENCES	60
APPENDIX A – QUESTIONNAIRE	67
APPENDIX B – DATA ANALYSIS TABLES	71

ABSTRACT

This study examined the effectiveness of using personality traits to predict entrepreneurial intention and performance. The participants in the study ($N = 113$) were all members of an Enterprise Development programme based in Cape Town in the Western Cape. The personality variables under investigation included proactive personality, self-efficacy, perseverance and control aspiration. Standard multiple regression analysis revealed that an overall model incorporating all four of the above personality variables explained approximately 25% of the variance in entrepreneurial intention. After controlling for age and education, the model explained approximately 30% of the variance. However, of the four independent variables, only proactive personality explained unique variance in entrepreneurial intention. Although self-efficacy did not explain unique variance, it was found to correlate significantly with entrepreneurial intention in a bivariate correlation ($r = .25, p < .05$). Standard multiple regression analysis was conducted using the same four independent variables, and entrepreneurial performance as the dependent variable. The analysis was repeated with two different measures of performance, namely initial and recent performance. The overall model was not significant for either of these analyses. However, self-efficacy predicted unique variance in initial performance, but not in recent performance. A hierarchical multiple regression analysis for recent performance, controlling for tenure, unexpectedly revealed that the length of time that the participant had been involved in the ED programme was found to predict unique variance in recent performance. A weak yet significant positive correlation between tenure and recent performance indicated that the longer the participants had been members of the programme, the higher their entrepreneurial performance.

CHAPTER 1: INTRODUCTION

According to Statistics SA (2013), the official rate of unemployment within South Africa is very high and has been so for many years. Unemployment was officially estimated at 24.9% in the fourth quarter of 2012, although unofficial estimates are thought to be considerably higher than this (Fourie, 2011; Meth, 2013). The rate of unemployment is particularly high for individuals who have not completed matric, who account for 60% of the unemployed, and the unemployment rate is also higher for women (27.1%) than for men (20.5%). In this environment, a strong small, medium, and micro enterprise (SMME) sector, driven by entrepreneurs can play a significant role in contributing to economic growth and employment (Audretsch, 2002; Low & MacMillan, 1988; Unger, Keith, Hilling, Gielnik, & Frese, 2009).

In response to the high levels of unemployment in South Africa, the Department of Trade and Industry aims to support the growth of SMMEs by, inter alia, encouraging entrepreneurship and self-employment, providing business incubator support, and promoting and supporting Enterprise Development (ED) programmes (SA Yearbook, 2012). These actions are intended to broaden the participation of previously disadvantaged individuals in the economy. In South Africa, large businesses are required to offer financial and non-financial support to entrepreneurs as part of the government's Broad-Based Black Economic Empowerment (BBBEE) policy (Department of Trade and Industry, 2013). The BBBEE policy requires companies to earn BBBEE points in different categories, one of which is Enterprise Development (ED). ED is aimed at supporting the growth and development of black-owned enterprises and other enterprises that make a substantial contribution to transformation. The ED category of BBBEE is intended to benefit both the beneficiary in terms of business growth as well as the sponsor company which gets a higher BBBEE rating and is therefore more likely to attract business (Jack, 2007). The sponsoring company may also receive a direct return on their investment in the beneficiary company depending on the nature of the agreement between the two companies. The sponsoring organisation may provide direct financial support as well as non-financial support such as business development services (Department of Trade and Industry, 2013). Several ED organisations have been created in South Africa to connect sponsoring organisations with suitable ED beneficiaries (e.g. African Dream Trust, the Awethu Project, The Clothing Bank, and the

Micro Enterprise Development Organisation). These ED organisations provide holistic development and support programmes to candidates, using the funding provided by the sponsor companies. The programmes encompass recruitment and selection of suitable candidates, training, coaching, mentoring, counselling and financing for the beneficiaries to establish and grow their businesses. These efforts are aimed at increasing the likelihood that the beneficiaries' businesses will be sustainable. An important consideration for such support programmes is to ensure that the financial and other support is channelled towards individuals who have a high likelihood of success and sustainability, and who are most suited to establishing and sustaining entrepreneurial ventures.

There are approximately two million SMMEs in South Africa currently which collectively contribute close to 40% of the country's GDP (SA Yearbook, 2011). However, a concern within the small business environment is the rate of closure of businesses. Statistics for the sustainability of small businesses reveal that the majority of small businesses (75%) started in South Africa fail within their first four years - one of the highest failure rates of small businesses in the world (Olawale & Garwe, 2010). Adcorp's Employment Index report of February 2012 states that 440,000 small businesses closed within the previous 5 years. In addition, there has been a decline of 76% in the number of people starting their own new businesses over the past decade. Adcorp suggests that the reasons for the decline in creation of new business, as well as the failure of small businesses can be attributed to the recession in 2009, as well as the onerous labour laws and regulations with which small businesses need to comply. The World Economic Forum's Global Competitiveness Report for 2013-2014 concurs with these reasons by listing restrictive labour regulations and inefficient government bureaucracy as two of the top three most problematic factors for doing business (Schwab, 2013).

ED programme coordinators need to make decisions as to which applicants to enrol on the programme as they generally have more applicants than capacity. They therefore need to be able to assess the applicants and predict their entrepreneurial business performance in order to select those most likely to succeed in establishing and running their own businesses.

Rauche and Frese (2007) found that entrepreneurial business performance was positively linked with certain personality traits, such as having a proactive personality, high levels of

perseverance and self-efficacy, as well as having aspirations for making decisions regarding work. These findings suggest that certain individuals are more predisposed to entrepreneurial success than others.

The focus of this study is thus to evaluate the effectiveness of using personality traits in order to predict the entrepreneurial behaviour of candidates selected into a particular ED development programme in South Africa. More specifically the study aims to answer the following research questions:

1. Do personality traits predict entrepreneurial intention?
2. Do personality traits predict entrepreneurial performance?

The following chapter contains an outline of literature relevant to this study and proposes the hypotheses tested in the study. Chapter 3 describes the method employed to conduct the study, and Chapter 4 reports on the results of all the analyses carried out to test the proposed hypotheses. Chapter 5 includes a discussion of the findings of the study and compares and contrasts these to the findings from the previous studies described in Chapter 2. Chapter 5 also describes the limitations of the study and makes recommendations for further research. Finally, conclusions drawn from the study are summarised in Chapter 6.

CHAPTER 2: LITERATURE REVIEW

This chapter contains a review of academic literature on entrepreneurship, as well as the personality traits of interest to this study. The chapter begins with definitions of all constructs under investigation including entrepreneurial intention and entrepreneurial performance as the dependent variables, and specific personality traits as the independent variables. This is followed by descriptions of previous research into the relationships between personality traits and entrepreneurship. The information reviewed in the literature forms a theoretical basis for the proposed models and hypotheses tested in this study, which are presented at the end of this chapter.

Entrepreneurship

The multiplicity of definitions for entrepreneurship in existing literature has hindered the progress of research into entrepreneurship (Gartner, 1985; Low & MacMillan, 1998). Collins, Hanges, and Locke (2004) noted that it was difficult to compare findings across different studies that operationalised entrepreneurship differently. Several articles in academic journals have discussed the issue of multiple definitions for entrepreneurship. For example, Davidsson (2004) listed seven different definitions for entrepreneurship, and Shane and Venkataraman (2000, p.217) noted that “*entrepreneurship* has become a broad label under which a hodgepodge of research is housed.” Shane and Venkataraman suggested that empirical evidence reported from studies into what differentiates entrepreneurs from non-entrepreneurs, was questionable due to the lack of consistent definitions of entrepreneurs and entrepreneurship.

In the 2002 edition of the Global Entrepreneurship Monitor (GEM) report, Reynolds, Bygrave, Autio, Cox, and Hay (p. 5) defined entrepreneurs as individuals who are “either actively involved in starting a business or are the owner/manager of a business that is less than 42 months old.” This has become a widely acknowledged definition of entrepreneurship and this definition has been used in each subsequent GEM report over the past decade. Each annual GEM report contains the results of an annual measurement of the Total Entrepreneurial Activity Index (TEA index) across many countries, including South Africa (Díaz-Casero, Díaz-Auni6n, Sanchez-Escobedo, Coduras, & Hernandez-Mogoll6n 2012; Kautonen, Van Gelderen, & Tornikoski, 2013). Since this definition is now well-established,

and contents of the GEM reports have been cited extensively in entrepreneurship research, the above definition will be used in this study.

To break down the definition of entrepreneurship further researchers frequently distinguish between entrepreneurs who are motivated by opportunities versus those who become entrepreneurs out of perceived necessity due to a lack of other opportunities for work (Maritz, 2004; Rogerson, 2001; Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2012). Rogerson (p. 117) referred to necessity-driven entrepreneurship as “enforced entrepreneurship”. The 2012 GEM report highlighted that necessity-driven entrepreneurship tended to be highest in developing countries such as those in Sub-Saharan Africa (Bosma, Wennekers, & Amorós, 2012). However, Williams (2008) found that both necessity and opportunity drivers could be involved simultaneously in an entrepreneur’s decision to start a new venture, and also that necessity-driven entrepreneurs often become more opportunity-driven over time. He concluded therefore, that the categorisation of entrepreneurs as necessity- or opportunity-driven should be regarded as temporal rather than static as the drivers are likely to change over time.

Entrepreneurial intention

Intent has been defined as a state of mind that focuses one’s attention towards the achievement of a specific goal (Bird, 1988). Ajzen (2011), in developing his Theory of Planned Behaviour (TPB), linked intention to probability of behaviour by proposing that the stronger the intention, the higher the probability of the intended behaviour occurring. Entrepreneurial intention then can be defined as the intention to start a new business. The value of researching entrepreneurial intention is that, firstly, entrepreneurial intention has been found to be a significant predictor of new business creation (Chrisman, 1997; Liñán & Chen 2009; Reynolds & Miller, 1992). Secondly, the evaluation of entrepreneurial intention can be carried out prior to the actual commencement of the business venture. This means that it can be of particular use to initiatives such as ED programmes that need to be able to predict the likelihood of applicants to their programmes actually becoming entrepreneurs during and after their participation in the ED programme. Katz and Gartner (1988) also linked entrepreneurial intention to the search for information that can help accomplish the goal of starting a new business.

Entrepreneurial performance

As described in the introduction, many new businesses fail in their first few years of existence. Whilst research into entrepreneurial intention is important, entrepreneurial intention does not necessarily translate directly into business success, and therefore it is valuable to also consider the actual performance of the entrepreneur. Entrepreneurial performance, in its simplest form, can be measured by using financial indicators. Wiklund and Shepherd (2005) contended that growth should also be factored into a measure of performance, and that growth could be measured by assessing annual increases in sales as well as in headcount. However, for businesses that are in their first or second year of operation, annual growth figures are not yet available and therefore simple financial indicators provide the best source of information for business performance.

Personality traits and performance in the workplace

Personality traits have been defined as dispositions to respond, or propensities to act, in a certain way across different situations (Caprara & Cervone, 2000; Rauch & Frese, 2007) and are considered to be relatively enduring and stable across time. Differences in mean personality scores have been detected across different jobs and work environments, suggesting that individuals with different profiles are attracted to different occupational environments (Campbell & Holland, 1972). However, there has also been controversy regarding the use of personality inventories in order to make decisions or predictions about people and their performance in the workplace (Murphy & Dziewieczynski, 2005). In the 1950s, many organisations used personality inventories, but in their influential review, Guion and Gottier (1965) concluded that it would be problematic to "advocate with a clear conscience, the use of personality measures in most situations as a basis for making employment decisions about people" (p. 160). This review led to a drastic drop in personality research by industrial and organisational psychologists for over three decades (Murphy & Dziewieczynski, 2005).

Hogan (2005) noted a resurgence of personality studies in industrial psychology in the 1990s, with research results demonstrating the usefulness of well-constructed personality measures in predicting work performance. However, critics still argued about the validity of personality measures, and noted the small effect sizes for relationships found between personality and work performance (Hogan, 2005). Ones and Dilchert (2005) pointed out that

“not all personality traits are created equal in terms of their predictive and explanatory value” (p. 395) and that the use of compound personality variables, such as managerial potential, have shown substantially higher operational validities than using the Big Five constructs (Extraversion, Emotional Stability, Agreeableness, Conscientiousness, and Openness to Experience) to predict overall job performance. Care must therefore be taken to select the most appropriate compound variable in order to predict the desired outcome.

In a meta-analysis of the relationship between personality and work performance, Barrick and Mount (2005) concluded that both common sense and empirical evidence supported the view that personality traits matter in the workplace. They did however acknowledge that the relationships were complex with both mediating and moderating variables at play.

Personality traits and entrepreneurship

In the previous section, literature surrounding the general link between personality traits and work performance was reviewed. This section will now review the relationship between personality traits and a specific context for work, namely entrepreneurship. Several meta-analyses have found evidence of significant relationships between personality traits entrepreneurship (Collins et al., 2004; Rauch & Frese, 2007; Zhao & Seibert, 2006). Collins et al. commented that research into traits of entrepreneurs had produced promising results suggesting that individual traits could be used to identify the most suitable recipients of funding and support for entrepreneurial ventures. Rauch and Frese concurred with Collins in this respect. Zhao and Siebert suggested that individuals with particular personality traits may find entrepreneurship more attractive and fulfilling than individuals with different personality traits. Rauch and Frese found evidence to support the hypothesis that personality traits were linked to entrepreneurial behaviour such as business creation and success. Specifically, they found that proactive personality, personal initiative, perseverance and generalised self-efficacy were relevant personality variables.

Rauch and Frese (2007) also highlighted the importance of studying the personality traits that are most likely to have a logical relationship with entrepreneurial performance. Rauch and Frese specifically matched the traits of having a proactive personality, personal initiative (made up of self-efficacy and control aspiration) and perseverance, to entrepreneurial tasks. Markman, Baron, and Balkin (2005) also found self-efficacy and perseverance to be positively associated with entrepreneurial performance. Each of these traits will be defined

in the following sections and their relationships with entrepreneurial intention and performance will be described.

The proactive personality. Proactivity is considered to be a relatively stable trait and to be able to differentiate between individuals (Bateman & Crant, 1993). People who score highly on proactive personality measures are those who want to have an influence on their environment (Crant, 1996). Proactivity involves having a long-term focus, being able to anticipate situations, and taking action before the situation occurs (Frese & Fay, 2001). Highly proactive individuals also identify opportunities and persevere until they accomplish the change they are seeking to achieve (Crant, 1996). Bateman and Crant (1993) considered proactive behaviour to be related to a personal disposition, or tendency, to behave in a proactive manner, and defined a proactive individual as “one who is relatively unconstrained by situational forces, and who effects environmental change” (p. 105).

The proactive personality is relevant for entrepreneurs in that entrepreneurs need to be able to anticipate and identify opportunities and influence their environment by establishing new business ventures (Rauch & Frese, 2007). It further seems logical that individuals with a highly proactive personality might be attracted to entrepreneurial opportunities (Crant, 1996). Crant found empirical evidence showing a significant relationship between proactivity and entrepreneurial intentions, as well as an effect of proactivity on entrepreneurial intention after controlling for the effects of demographic variables including education, parental role models and gender. Proactivity therefore is likely to be an asset to individuals within an entrepreneurial context, and since proactivity can be used to differentiate between individuals, it could be helpful in predicting how well individuals are suited to entrepreneurship.

Perseverance. The Concise Oxford Dictionary (2004, p. 1069) defines persevering as continuing in a “course of action in spite of difficulty or with little or no indication of success”. Markman et al. (2005) refer to perseverance as “the perceived ability to overcome adverse circumstances (p. 2). Based on these definitions, perseverance is therefore an important trait for entrepreneurs to possess so that they can get through and overcome the inevitable difficult times and setbacks (Markman et al., 2005; Roodt, 2005). Markman et al. suggested that the degree of perseverance that entrepreneurs displayed would play a role in determining whether or not they would be successful in their business venture. The

reason put forward by Markman et al. was that perseverance would have an effect on the actions and effort that individuals would take in adverse situations as well as on their resilience to deal with setbacks. Individuals who are less perseverant, tend to give up more quickly in adverse circumstances than more perseverant individuals. Individuals with a strong sense of responsibility and accountability for adverse outcomes tend to expend more energy and effort in resolving the problems than those with a lesser sense of responsibility. Since entrepreneurs have a vested interest in the successful outcome after adversity, they are expected to possess higher levels of perceived responsibility for adversity than non-entrepreneurs, and it is likely that successful entrepreneurs may possess higher levels of perceived responsibility than less successful entrepreneurs.

Personal initiative. Personal initiative is defined as a behaviour syndrome describing individuals' tendency to take an active and self-starting approach, being goal oriented, and persistent in overcoming obstacles (Frese, Kring, Soose, & Zempel, 1996). Frese and his colleagues have found personal initiative to be positively linked to both entrepreneurial intention and performance (Frese et al., 2007; Krauss, Frese, Friedrich, & Unger, 2005; Rauch & Frese, 2007). Frese et al. (1996) determined that personal initiative could be measured in terms of self-efficacy and control rejection, and these two components of personal initiative are described below.

Self-efficacy. Markman et al. (2005) found that although the concepts of perseverance and self-efficacy overlapped to some extent, they nevertheless possessed sufficiently unique features that they could be regarded as distinct concepts. Markman et al. found the two constructs to have discriminate validity as they each contributed unique variance in predicting new venture formation. Self-efficacy has been defined as a generalised expectancy of mastery (Frese et al., 1996), which is built up as a result of one's active and vicarious experiences of mastery, social persuasion, and perceptions of physiological states such as anxiety (Peterson & Arnn, 2004; Zhao, Seibert, & Hills, 2005). It is regarded as a dynamic rather than static motivational construct and can differ depending on the task at hand and the individual's belief that they will succeed in executing the task (Peterson & Arnn, 2004). Bandura (1982) described self-efficacy as the belief that one is able to control events of importance, and noted that individuals' judgement of their self-efficacy affected the degree of effort and time they would expend in the face of difficulties. Those

with high self-efficacy would expend more time and effort than those with low self-efficacy, and would also be more likely to achieve high performance. Thus, individuals with high self-efficacy could be expected to achieve greater levels of entrepreneurial success than those with low self-efficacy.

Self-efficacy has been linked positively to entrepreneurial intention in previous studies (Chen, Green & Crick, 1998; Liñán, Rodríguez-Cohard, & Rueda-Cantucho, 2005; Zhao et al., 2005). Chen et al. suggested that an individual's self-efficacy would influence his or her decision to become an entrepreneur (entrepreneurial intention), since those with high self-efficacy would feel more competent to deal with uncertainties and risks associated with entrepreneurship than would those with low self-efficacy. Chen et al. proposed that measure of self-efficacy related specifically to entrepreneurial activities would provide the best predictor of entrepreneurial intention. However, Markman et al. (2005) argued that broader measures of self-efficacy may be more suitable for instances where tasks require a varied set of skills. They found significant differences in the levels of self-efficacy between entrepreneurs and non-entrepreneurs using a broad measure of self-efficacy.

Control rejection is a trait-like measure that relates to an individual who does not want responsibility or control at work. It is considered to be negatively related to initiative (Frese et al., 1996). Frese, Garst, and Fay (2007) found more favourable results in assessing attitudes towards control by describing the possible negative results of job control rather than describing aspirations towards control in a positive manner. For example, "I would rather be told exactly what to do" describes the rejection of control rather than aspirations towards control. Frese et al. (2007), however, reversed the scoring of the control rejection scale and named the resulting score as **control aspiration** in order to analyse the results of their study with all scales scored in the same direction.

Summary

Although some research has taken place into the association between personality traits and entrepreneurship in South Africa, there is much room to expand the research in this regard. As additional studies such as this one are completed, their findings can be used as input into guiding organisations and policy makers in making decisions related to investing in entrepreneurs, and structuring the programmes set up to support them. Based on the literature reviewed in this chapter, four personality traits have been selected to form part of

this study. These traits and their relationship with entrepreneurial intention are illustrated in Figure 2.1 below. Similarly, their relationship with entrepreneurial performance is illustrated in Figure 2.2 below.

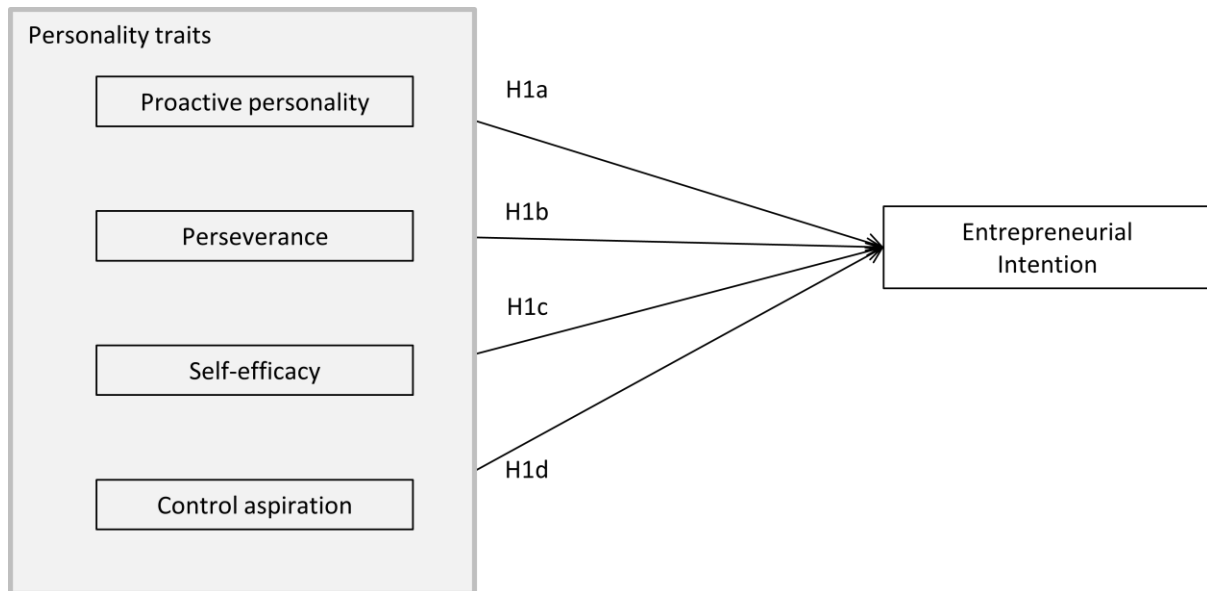


Figure 2.1. The relationship between personality traits and entrepreneurial intention

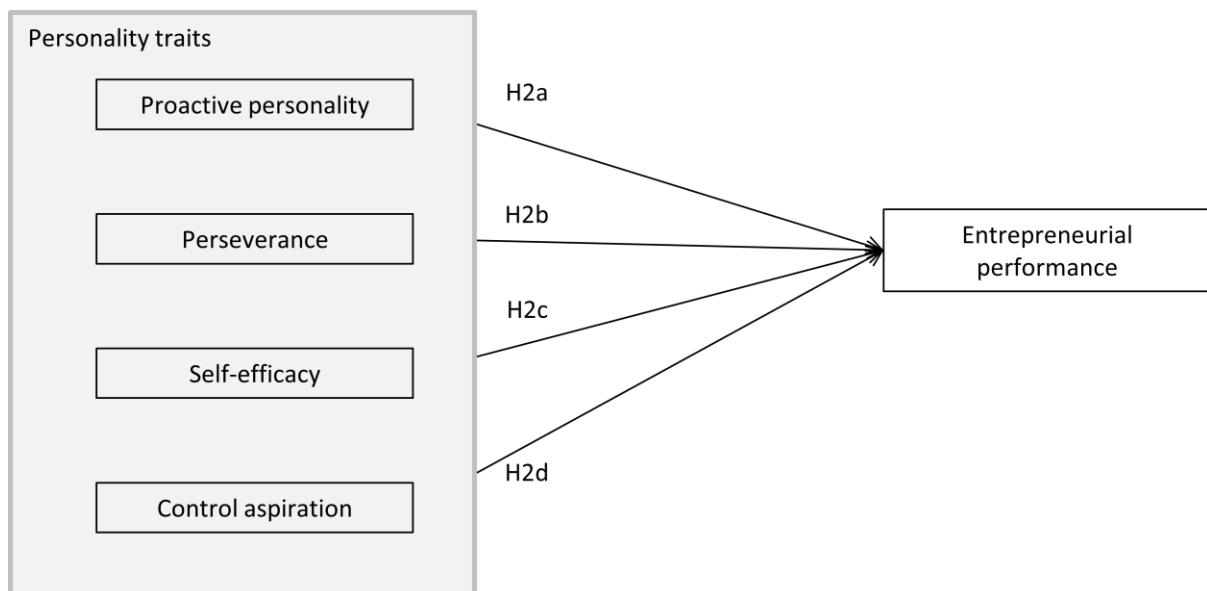


Figure 2.2. The relationship between personality traits and entrepreneurial performance

Hypotheses

In order to explore the relationships shown in Figures 2.1 and 2.2 above, the following hypotheses are therefore proposed:

Table 2.1

Hypothesis 1: Main and Secondary Hypotheses for Entrepreneurial Intention

Hypothesis

Main hypothesis

- H1 *Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial intention.*

Secondary hypotheses

- H1a *Proactive personality predicts unique variance in entrepreneurial intention.*
H1b *Perseverance predicts unique variance in entrepreneurial intention.*
H1c *Self-efficacy predicts unique variance in entrepreneurial intention.*
H1d *Control aspiration predicts unique variance in entrepreneurial intention.*
-

Table 2.2

Hypothesis 2: Main and Secondary Hypotheses for Entrepreneurial Performance

Hypothesis

Main hypothesis

- H2 *Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial performance.*

Secondary hypotheses

- H2a *Proactive personality predicts unique variance in entrepreneurial performance.*
H2b *Perseverance predicts unique variance in entrepreneurial performance.*
H2c *Self-efficacy predicts unique variance in entrepreneurial performance.*
H2d *Control aspiration predicts unique variance in entrepreneurial performance.*
-

CHAPTER 3: METHOD

This chapter contains a description of the methods used to conduct the research for this study. It begins with an overview of the context of the research, followed by the research design. The participants who took part in the study are then described followed by the procedures followed to conduct the research and to collect and capture the data.

Research context

The study was based in an ED programme operating in Cape Town in the Western Cape province of South Africa. The programme was founded in 2010 in response to growing unemployment and was certified as a 3rd Party Enterprise Development Service Provider, which meant that any organisations that supported the programme would receive points towards their BEE status. The business model involved forming strategic partnerships with retail organisations who donated their excess merchandise to the programme. The merchandise then became the stock that the members could purchase and resell to their customers at a profit. The programme included business and parenting skills training programmes as the programme's mission was to help not only the members themselves, but also their children. Members also took part in structured, group coaching programmes facilitated by qualified coaches, one of whom was the researcher in this study.

Members of the programme were required to work in the warehouse once a week, partly to give them operational experience, and partly to minimise the operational costs of the programme. Members who did not fulfil their operational work obligations, or failed to attend training or coaching sessions, were barred from purchasing stock for a predetermined period. In addition, members that did not meet their buying targets for three consecutive months were placed on a performance management programme. Therefore, although the objectives of the programme were ultimately to encourage entrepreneurship and individual responsibility of members, the format of the programme also created a context of a rule-bound and structured environment, which would one might more commonly expect to find in formal employment. It is important to bear this context in mind when interpreting the results of this study.

Research design

A descriptive, cross-sectional design was used for this study to measure relationships between the variables specified in the hypotheses above. The data was collected from a non-probabilistic sample using a convenience sampling method. The sample was drawn from active members of an enterprise development programme that the researcher had previously been involved in as a volunteer coach. The sample method was chosen due to logistical, time and cost constraints. A quantitative survey was conducted and collected primary data from the members of the ED programme. Secondary data was also collected from the ED programme coordinators to obtain participants' entrepreneurial performance and demographic data.

Participants

Current participants in a specific ED programme known to the researcher were invited to participate in a survey. The participants in the ED programme were all previously disadvantaged women who were unemployed at the time they joined the programme. Of the 180 active programme members, 113 completed the survey questionnaire, which amounted to a response rate of 63%. Six of the completed questionnaires could not be used as they had missing or invalid reference numbers and therefore could not be matched to performance figures obtained from the ED programme, and therefore a total of 107 completed questionnaires were used in the data analysis. Participants' ages ranged from 25 to 60 with an average age of 38.2 years and a standard deviation of 7.3 years. The racial groups of the participants (93.3% Black African and 6.7% Coloured) are included within the South African Department of Labour's definition of broad-based black (BBB) which includes Black African, Coloured, and Asian. Individuals classified as broad-based black form the target demographic for ED programmes under South Africa's BBBEE initiative. Thirty-three (30.8%) of the participants were married and the remainder of the participants were single (57.9%), divorced (6.5%), widowed (3.7%) or separated (0.9%). All participants except one were parents as this was a prerequisite for entering the programme. The number of children ranged from 0 to 5 ($M = 1.93$, $SD = .90$). The prerequisite of having children in order to enter the programme is in line with one of the programme objectives, which is to benefit multiple generations through imparting business and life skills, including parenting skills, to the members. The participants were all required to speak, read and write in English and this was

verified during the application process in which applicants filled out comprehensive application forms in English. Ninety-four per cent ($n = 100$) of the survey participants had achieved a formal education level of Grade 10 or higher. The highest level of education was Grade 12. Eighty-one percent of the participants indicated that they were opportunity-driven entrepreneurs, and 13.5% as necessity-driven. 5.2% of the participants omitted the items relating to type of entrepreneur.

The ED programme members' entrepreneurial ability was not assessed during the intake process, and therefore they were unlikely to constitute a sample biased towards entrepreneurship. In addition, all members were unemployed at the time of applying to the programme, and rather than starting businesses on their own as one might expect of entrepreneurs, they applied to the ED programme for assistance in launching their businesses. Participants became aware of the programme through various channels including advertisements, the Department of Labour, word of mouth from current members, family or friends, the Internet, volunteer centres and social development initiatives.

Measures

The survey instrument that was used to collect data for this study is contained in Appendix A. It consisted of 49 items all requiring responses on 5-point Likert-type scales, anchored *strongly disagree* and *strongly agree*. The survey was compiled by combining individual scales that measured each of the traits of interest to this study. The individual scales are described in the following sections.

Perseverance. Perseverance was measured using a scale by Kanungo and Menon (2004). This scale was selected for use in this study due to the sound psychometric properties found in previous studies. Kanungo and Menon found that the scale had high internal consistency ($\alpha = .75$). According to guidelines by Nunnally and Bernstein (1994), for scales used for research purposes, a Cronbach Alpha should be at least .70 to indicate acceptable reliability. Kanungo and Menon also found that the perseverance scale had a high test-retest reliability ($r = .79$). The scale contained four items (questionnaire items 1 to 4) relating to perseverance and the tendency to continue with a task when faced with difficulty, for example, "While doing a task, I sometimes lose sight of my goals". In order to ensure that the participants would be likely to understand the items, some of the wording

was simplified. For example, the item “When I am not sure I can successfully handle a task, I tend to avoid it” was reworded to “When I am not sure I can successfully handle a task, I am likely to avoid it”. The items were reverse scored so that a high score always indicated high perseverance.

Personal initiative. Frese et al. (1996) contend that personal initiative is an aspect of entrepreneurship and that it is best measured using interviews. However, in a study of personal initiative in East and West Germany, in addition to conducting interviews to assess personal initiative, they also included questionnaire-based self-report measures of generalised *self-efficacy* and *control rejection* which they deemed to be “conceptually and empirically close to personal initiative” (p. 49). Frese et al. found that the questionnaire-based self-response scales for self-efficacy and control rejection produced similar results to the interview-based scales measuring personal initiative, and therefore could be used as a proxy for measuring personal initiative. Frese et al. reverse-scored the control rejection scale and referred to the results as *control aspiration*. This study will therefore also use two scales, namely self-efficacy and control aspiration, in order to evaluate personal initiative. The measures for these scales are described in the following sections.

Self-efficacy. Self-efficacy was measured using a scale by Frese et al. (1996). The scale was selected due to its sound psychometric properties as found in previous studies, and because the scale had been used successfully in South Africa before. Frese et al. found the reliability of the scale to be acceptable in samples of East and West Germans ($\alpha = .70$), and Frese et al. (2007) found the reliability to be high (.88) in a sample of South African business owners. The scale consists of six items (questionnaire items 5 to 10) related to self-efficacy, for example “when I want to reach a goal, I usually succeed”. The language of the scale items was simplified for use in this study so that the intended participants were more likely to understand them. For example, the original item “I judge my abilities to be high” was reworded to “I think I have high abilities”.

Control aspiration. The control rejection scale of Frese et al. (1996) was used to measure control aspiration. Frese et al. found the reliability of the scale to be high ($\alpha = .87$) in a study of entrepreneurs. The scale contained 10 items (questionnaire items 28 to 37) related to the participants’ tendency to reject or aspire to taking control of work situations. Since the first eight items of this scale related to control rejection (e.g. “Work is easier if I’m

always told how to do it”), they were reverse-scored to convert them to measures of control aspiration. Items 9 and 10 were already worded in terms of control aspiration (e.g. “I want to decide more things myself”) and were therefore not reverse-scored.

Proactive personality. The proactive personality scale developed by Bateman and Crant (1993) was used to measure participants’ tendency to engage in proactive behaviour. The scale contained 17 items (questionnaire items 11 to 27). It was chosen for this study due to its psychometric properties found in previous studies. Bateman and Crant reported high Cronbach α values across three samples (.87 to .89). They also found satisfactory convergent, discriminant and criterion validity of the scale. Similarly, Becherer and Maurer (1999) found the scale to be reliable (Cronbach α = .88). However, in order to ensure that the ED programme participants were likely to easily understand the items in the scale, the wording of some of the items was simplified, for example, “I love to challenge the *status quo*” was reworded to “I love to challenge the way things are normally done”.

Entrepreneurial intention. In order to measure entrepreneurial intention, Liñán and Chen (2009) developed an instrument that they called the Entrepreneurial Intention Questionnaire (EIQ). They evaluated the scale’s psychometric properties in studies using samples from Spain and Taiwan, and found the reliability ($\alpha > 0.77$ for both samples) and validity (factor loadings > 0.65) to be acceptably high. Their scale was used in this study to measure entrepreneurial intention. The scale items are include as items 38 to 43 in the questionnaire in Appendix A.

Entrepreneurial performance. Participants’ entrepreneurial performance was measured using the ED programme’s monthly sales performance figures. The money spent by each participant on buying stock had been recorded via the programme’s point of sale system each time participants made stock purchases. All purchases were made electronically at the programme’s warehouse and recorded against the participants’ unique ED programme number and therefore these purchases could be monitored. The participants were all trained to mark up the purchase price of the stock they purchased in order to arrive at a selling price. The ED programme could therefore use this calculation to estimate the value of sales made by each participant each month. Each participant was given a minimum target for purchasing stock (R1,500 per month) to encourage regular purchases. This in turn was aimed at encouraging regular sales as this would allow participants to afford to buy new

stock. If participants failed to purchase over their minimum purchasing limit for three consecutive months, they were placed on a performance management programme to assist them with increasing their sales. Participants also had a maximum buying limit (R2,500) to ensure that all participants had a fair opportunity to buy stock, and to encourage the participants to find alternative sources of stock that they could continue to use once they had graduated from the programme. Sales performance was regarded as a useful proxy for entrepreneurial performance in this study.

The operationalisation of entrepreneurial performance was carried out in two different ways. For the first entrepreneurial performance measure (*Initial Performance*), the mean monetary value of participants' second and third months of trading was calculated. The reasons for this operationalisation of performance were, firstly, that the participants enter the programme through intakes at various points during the year and this method would give comparative performance figures at the same relative period in the programme thus controlling for tenure. Secondly, the intakes do not always coincide with a calendar month and therefore the first month of trading was excluded because participants would potentially be trading for different proportions of the first calendar month and therefore these figures would not be comparable. In addition, if participants fail to trade at the target level set by the programme for three consecutive months, they are placed on performance management which is intended to improve their performance and therefore the trading figures for the first three months of trading would not be affected by any performance management interventions. An overall Initial Performance figure was derived for each participant by calculating the mean purchase amount of their first two full months of trading.

For the second performance measure (*Recent Performance*), the mean of the monetary amount for each participant's most recent two months of trading data, namely for the months of August and September 2013, was calculated. This second operationalisation was selected as an alternative measure in order to control for any seasonal influences on the performance data. For example, some members may have joined the programme mid-way through a year, and others may have joined just before year-end and experienced different buying patterns on the part of their customers.

Demographic data. The following demographic data was collected in this study for sample description purposes: (a) age; (b) number of children younger than 18 years, (c) level of education of the participant, and (d) type of entrepreneur (necessity- or opportunity-driven). Items (a) to (c) were obtained from secondary data maintained by the ED programme co-ordinators, and matched with the questionnaire responses and performance data using their unique ED programme numbers. The type of entrepreneur was derived by calculating the mean of the scores for items 47 (“I would prefer to have a job than have my own business”) and 48 (“I would rather work for myself than have a boss”) after reverse-coding the score for item 47. Individuals scoring 4.0 or higher on the combined scores for these items were regarded as opportunity-driven, and those score less than 4.0 as necessity-driven entrepreneurs.

Procedure

Ethics approval to conduct the study was granted by the University of Cape Town’s Faculty of Commerce Ethics in Research Committee. The CEO of the ED programme also granted her consent for the research to take place.

Pilot. A pilot study was conducted prior to the main study. In the pilot study, the paper-based questionnaire that was compiled for the main study was administered to a pilot group of four ED programme participants in order to get their input on any difficulties in understanding any of the instructions or items, as well as an estimate of the time required to complete the questionnaire. All four members of the pilot group indicated that they understood the instructions and item wording without any difficulties, and therefore the questionnaire was not altered prior to the main study. Pilot participants took between 10 and 15 minutes to complete the questionnaire. The cover letter to the participants in the main study was updated to indicate the expected time required to complete the questionnaire.

Main study. In the full administration of the survey, all current participants in the ED programme were requested to complete the paper-based questionnaire during their regular monthly meeting on 26th July 2013. The researcher attended the meeting and explained the aims of the study and its potential benefits to the group and the organisation. Participants were told that they stood the chance to win prizes which would be given out in a lucky draw once everyone had completed the questionnaire. It was also explained that confidentiality

would be protected in that only the overall results would be communicated with the ED programme staff and that no specific data relating to any individual would be shared with staff, or appear in any report from the study. Participants were asked to write their unique ED programme numbers on the questionnaires. Lists were made available for the participants by the programme coordinators so that they could look up their ED numbers if they did not remember them. The researcher explained that their demographic data such as their age and also their sales performance would be matched up using this unique number, but that no identifying data such as their names or ID numbers would be included. Participants were assured that the completed questionnaires would be retained by the researcher and that they would not be shown to any programme staff who might be able to identify participants via their ED numbers. Instructions for completing the questionnaire were described in writing on the questionnaire itself (see Appendix A). The instructions were also explained to the participants verbally. Participants were invited to ask questions to clarify their understanding of the instructions or any items prior to filling out the questionnaire, and also at any time during the completion of the questionnaire. None of the participants asked any questions. Participants were also informed of their right not to participate or to withdraw from the survey at any time. Upon completion of the survey, participants were thanked for their contribution, and a lucky draw took place in which ten randomly selected participants won boxes of chocolates. The prize winners were selected by drawing completed questionnaires out of the pile at random. The programme coordinators used the ED numbers written on the questionnaires to look up the winning participants' names and handed their prizes to them.

Since the initial response rate was lower than was hoped ($n = 97$), the program coordinators asked additional members of the programme to complete the questionnaires during the month following the meeting, which brought the total number of completed responses to 113.

Data capturing and analysis

The data from the paper-based questionnaires was captured into a spreadsheet in Microsoft Office Excel. Two capturers completed the task. The first capturer read out the data from the questionnaire while the second capturer typed it into Excel. The second capturer then read out the data captured in the spreadsheet back to the first person to compare it back to

the questionnaire for accuracy. The secondary data was imported into the spreadsheet in two processes. Firstly, demographic data was imported from a spreadsheet containing demographic data by cross-referencing the unique ED number on each questionnaire with the ED number stored on the demographic spreadsheet. Only the information of interest to the study was imported and no identifying information, such as name or South African identify number, was imported from the database. Secondly, sales performance data was imported from sales spreadsheets, also through the matching of ED numbers. These spreadsheets are generated automatically as extracts from the point of sale system that records all stock purchases that the programme members make.

The data from the combined spreadsheet was then imported into IBM's SPSS (Statistical Programme for Social Sciences) version 21. All statistical analyses, including descriptive statistics, reliability and validity analyses of the scales used, and inferential statistics using multiple regression analysis, were performed using SPSS. Prior to data analysis, the data was examined for missing scale items. Composite scores for scales were only computed for respondents who had completed at least 75% of the items for that particular scale.

CHAPTER 4: RESULTS

This chapter contains the results of the analyses conducted on the collected data. Initial analyses were performed to assess the reliability and validity of the scales used. Descriptive statistics were then calculated for each scale and, thereafter, inferential statistics were derived through multiple regression analysis in order to test each of the hypotheses posed for this study.

Initial Analysis

Reliability

The reliability of each scale was assessed using the Cronbach Alpha technique together with the assessment of corrected item-total correlations. Nunnally and Bernstein (1994) posit that a Cronbach Alpha value of at least .70 indicates high reliability of a scale. Robinson and Shaver (1973) agree that a Cronbach Alpha value greater than .70 indicates high reliability, but add that a value between .35 and .70 indicates a moderate reliability. Both of these guidelines are considered when interpreting the reliability of scales in this study. In addition, as part of establishing scale reliability, corrected item-total correlations were also investigated for each scale. Pallant's (2013) guideline that corrected item-total correlations of at least .30 are acceptable was followed in this study.

Perseverance. The internal consistency of the 4-item Perseverance Scale was assessed using the Cronbach Alpha technique. The scale was found to have low reliability ($\alpha = .44$). The first two items of the scale had corrected item-total correlations of below .30, which is not significant according to Pallant's (2013) guideline, and they were therefore removed from the scale. Table 4.1 below contains the corrected item-total correlations for the 4-item scale. After removing the first two items, the revised scale consisted of only two items, which some researchers consider undesirable for summated scales (e.g. Hair, Anderson, Tatham, & Black, 1998). However, Eisinga, Te Grotenhuis, and Pelzer (2013) point out that it is common that some scale items produce poor item-total correlations and need to be removed, and that occasionally, this will result in 2-item scales. The correlation between the two remaining items was .46. The items could therefore be considered to be related. Eisinga et al. argue that the correlation is in effect the same as determining the split-half reliability which under-estimates scale reliability. Thus to get to a more adequate

reliability estimate, the correlation should be adjusted using the Spearman-Brown formula to indicate the reliability of the full scale rather than only half of the scale. The adjusted reliability was .66 (N = 99) which was considered to be of moderate reliability (Robinson & Shaver, 1973), and therefore the 2-item scale was retained for further analysis.

Table 4.1
Corrected Item-Total Correlation Coefficients for the 4-item Perseverance Scale (n = 95)

Item	Corrected Item-Total Correlation
1. (Item removed)	.15
2. (Item removed)	.14
3. I am likely to stop doing a job when major difficulties get in the way	.33
4. While doing a task, I sometimes lose sight of my goals	.45

Self-efficacy. The Cronbach Alpha of the 6-item Self-Efficacy Scale was found to be acceptably high ($\alpha = .71$). However, the first item in the scale had a corrected item-total correlation of only .02, which was substantially lower than Pallant’s (2013) guideline of .30. Item 1 was therefore removed from the scale and the reliability analysis was repeated. The Cronbach Alpha of the revised 5-item scale increased ($\alpha = .81$), and all items had corrected item-total correlations of at least .46. Table 4.2 below contains the corrected item-total correlations of the revised 5-item scale. The revised scale was therefore considered to be reliable and was retained for further analysis.

Table 4.2
Corrected Item-Total Correlation Coefficients for the Revised 5-item Self Efficacy Scale (n = 95)

Item	Corrected Item-Total Correlation
1. (Item removed)	
2. I like to make suggestions on how to improve the work process	.61
3. I think I have high abilities	.73
4. If I want to achieve something, I can overcome setbacks without giving up my goal	.67
5. When I want to reach a goal, I am usually able to succeed	.46
6. If I become unemployed, I am sure that I will find a new job based on my abilities	.52

Proactive personality. The 17-item Proactive Personality Scale was assessed for internal consistency and its Cronbach Alpha value was acceptably high ($\alpha = .83$) according to

guidelines by Cohen (1992). However, items 3 and 5 had corrected item-total correlations just below .30 and were therefore removed. The Cronbach Alpha for the revised 15-item scale was slightly higher ($\alpha = .84$) and corrected item-total correlations ranged from .30 to .62. Table 4.3 below contains all item-total correlations for the revised 15-item scale.

Table 4.3
Corrected Item-Total Correlation Coefficients for the Revised 15-item Proactive Personality Scale (n = 87)

Item	Corrected Item-Total Correlation
1. I am always on the lookout for new ways to improve my life	.30
2. I am determined to make a difference in my community and maybe the world	.40
3. <i>(Item removed)</i>	-
4. Wherever I have been, I have been a powerful force for constructive change	.47
5. <i>(Item removed)</i>	-
6. Nothing is more exciting than seeing my ideas turn into reality	.44
7. If I see something I don't like, I fix it	.39
8. No matter what the chances, if I believe in something I will make it happen	.44
9. I love being a champion for my ideas, even when others oppose my ideas	.53
10. I am excellent at identifying opportunities	.51
11. I am always looking for better ways to do things	.53
12. If I believe in an idea, no obstacle will prevent me from making it happen	.55
13. I love to challenge the way things are usually done	.52
14. When I have a problem, I tackle it directly	.53
15. I am great at turning problems into opportunities	.46
16. I can spot a good opportunity long before others can	.62
17. If I see someone in trouble, I help out in any way I can	.37

Control aspiration. The 10-item Control Aspiration Scale was assessed for internal consistency and its Cronbach Alpha value was acceptably high ($\alpha = .74$). However, items 9 and 10 had corrected item-total correlations close to zero and were therefore removed from the scale. Due to the wording of the items on the scale, items 1 to 8 were reverse-coded prior to conducting reliability analysis as they originally measured control *rejection* (e.g. "Work is easier if I'm always told how to do it") and had to be reverse-coded in order to reflect control aspiration. Items 9 and 10 were not reverse-coded as they were already worded in terms of control aspiration, (e.g. "I want to decide more things myself"). The very low corrected item-total correlations of items 9 and 10 indicated that the respondents may have responded rather randomly to these items compared to their responses to other

items. The revised 8-item scale had an increased Cronbach Alpha ($\alpha = .84$), with corrected item-total correlations ranging from .35 to .69. Table 4.4 illustrates the corrected item-total correlations for the revised 8-item scale.

Table 4.4
Corrected Item-Total Correlation Coefficients for the Revised Scale 8-item Control Aspiration Scale (n = 88)

Item	Corrected Item-Total Correlation
1. I do only what I'm told to do. Then nobody can criticise me for anything	.61
2. Work is easier if I'm always told how to do it	.66
3. You only run into trouble, if you do something on your own	.53
4. I would rather be told exactly what I have to do. Then I make fewer mistakes	.65
5. I act according to the motto: I follow orders, then nobody is going to criticise me	.69
6. I have to think about too many things when I have to make decisions	.35
7. I'd rather have routine work	.51
8. I prefer to have a supervisor who tells me exactly what to do. Then it is their fault if something goes wrong	.54
9. <i>(Item removed)</i>	-
10. <i>(Item removed)</i>	-

Entrepreneurial intention. The 6-item entrepreneurial intention scale had a high Cronbach Alpha score of .91. Corrected item-total correlations ranged from .59 to .83. Table 4.5 contains the corrected item-total correlations for the scale.

Table 4.5
Corrected Item-Total Correlation Coefficients for the 6-item Entrepreneurial Intention Scale (n = 93)

Item	Corrected Item-Total Correlation
1. I am ready to do anything to have my own business	.59
2. My goal is to have my own business	.78
3. I will make every effort to start and run my own business	.83
4. I am determined to create a business in the future	.79
5. I have very seriously thought of starting a business	.76
6. I have every intention of starting a business one day	.82

Dimensionality

The dimensionality of each scale was assessed using exploratory factor analysis with

principal axis factoring as the extraction method. The tests were performed separately for each scale as, due to the sample size, the generally accepted guidelines of subject-to-item ratio of 5:1 (Floyd & Widaman, 1995; Streiner, 1994) would not be adhered to if the factor analysis was conducted for all items in the questionnaire simultaneously. For each factor analysis, the Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and Bartlett's test for sphericity were assessed to determine whether the application of principal axis factoring was appropriate for each scale. According to guidelines suggested by Pallant (2013), principal axis factoring is appropriate when the KMO index for the scale is at least .60, and Bartlett's test of sphericity is significant ($p < .05$). Kaiser's criterion was used to determine the number of factors in each scale during factor analysis, in that only factors with an eigenvalue of 1.0 or more were retained for further analysis (Kaiser, 1970). For scales in which items were found to cross-load on more than one factor, the cross-loading items were removed before repeating the factor analysis for the scale. Items were considered to cross-load where they loaded significantly (> 0.32) on more than one factor (Tabachnick & Fidell, 2001), and if the difference between the absolute values of the loadings on each factor was less than 0.25. Where more than one factor emerged for a scale, rotation was performed to aid in the interpretation of the extracted factors. An oblique rotation method, specifically direct oblimin rotation, was used since this method allows factors to be correlated, which is generally the case in social and behavioural research (Streiner, 1994).

Perseverance. Since the revised Perseverance Scale had only two items, it was not necessary to conduct factor analysis on this scale. The Pearson's product-moment correlation between the remaining two items in the revised scale was found to be .46, and the Spearman-Brown correlation was found to be .66, indicating a moderate correlation according to guidelines by Cohen (1998). As the items could reasonably be considered to be tapping into the same construct based on their correlation, the scale could therefore be considered to be unidimensional and the scale was retained for further analysis. A composite perseverance score was derived for each participant by calculating the mean of the scores for the two items.

Self-efficacy. The Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and Bartlett's test for sphericity indicated that the application of principal axis factoring was

appropriate for the sample data for the 5-item self-efficacy scale ($KMO = .81$, $\chi^2(10) = 154.04$, $p < 0.001$). Following the Kaiser criterion, one factor emerged (eigenvalue = 2.86). This factor explained 57.24% of the variance. Factor loadings ranged between .51 and .85 (see Table 4.6 for all factor loadings, explained variance and eigenvalues). Therefore, the revised 5-item Self-Efficacy Scale was considered uni-dimensional and it was thus deemed appropriate to combine the items into a composite self-efficacy score by calculating the mean of each participant's scores for the five items.

Table 4.6
Factor Loadings for the 5-item Self Efficacy Scale on the Factor with Eigenvalue > 1 (n = 95)

Item	Factor Loadings
Item 2	.711
Item 3	.829
Item 4	.750
Item 5	.515
Item 6	.597
Eigenvalue	2.862
% Variance	57.24

Note. Extraction Method: Principal Axis Factoring; Loadings > .30 in bold

Proactive personality. The Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and Bartlett's test for sphericity indicated that the application of principal axis factoring was appropriate for the sample data for the 15-item Proactive Personality scale ($KMO = .77$, $\chi^2(105) = 473.42$, $p < 0.001$). Four factors emerged from the analysis with initial eigenvalues of greater than 1.0 explaining a cumulative 61.70% of the variance. Table B.1 in Appendix B illustrates the factor loadings, eigenvalues and explained variances of the initial factor analysis, and Table B.2 illustrates the pattern matrix after direct oblimin rotation. No communality could be found between items loading on each of the factors when considering the item wordings. In addition, Bateman and Crant (1993) had found the scale to be unidimensional in three factor analytic studies. For this reason, and as all items loaded on the first factor with a loading of greater than .32, the factor analysis was run again forcing only one factor to be extracted in order to establish whether a one-factor solution would provide a feasible interpretation of the scale. The extracted factor had an eigenvalue of 3.752 explaining 28.44% of the variance. All items loaded significantly on this one factor

with factor loadings ranging from .32 to .68 (see Table 4.7 for all factor loadings). The 15-item scale was thus considered to be unidimensional and a composite score for proactive personality was derived by calculating the mean score of the 15 items.

Table 4.7
Factor Loadings for the 15-item Proactive Personality Scale with One Factor Extracted

Item	Factor Loadings
Item 1	.323
Item 2	.420
Item 4	.516
Item 6	.497
Item 7	.464
Item 8	.510
Item 9	.598
Item 10	.557
Item 11	.597
Item 12	.605
Item 13	.605
Item 14	.599
Item 15	.522
Item 16	.676
Item 17	.391
Eigenvalue	4.954
% Total Variance	33.03

Note. Extraction Method: Principal Axis Factoring; One factor extracted

Control aspiration. The Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and Bartlett’s test for sphericity indicated that the application of principal axis factoring was appropriate for the sample data (KMO = .79, $\chi^2(28) = 161.33$, $p < 0.001$). Two factors emerged from the analysis with initial eigenvalues of greater than 1.0. The factors explained 48.63% and 13.80% of the variance respectively. Table B.3 in Appendix B illustrates the factor loadings of the 8-item scale. Item 7 cross-loaded on both factors and was therefore removed. After removing this item, the factor analysis was run again for the remaining seven items. One distinct factor emerged with an eigenvalue of 2.63, explaining 52.52% of

the variance. Factor loadings ranged from .483 to .833. The factor loadings for the revised 7-item scale are shown in table 4.8 below.

Table 4.8

Factor Loadings for the 7-item Control Aspiration Scale

Item	Factor Loadings
Item 1	.718
Item 2	.791
Item 3	.529
Item 4	.727
Item 5	.789
Item 6	.416
Item 8	.539

Note. Extraction Method: Principal Axis Factoring
Items in bold have factor loadings > .30

The 7-item Control Aspiration scale was thus considered to be unidimensional and a composite score for control aspiration was derived by calculating the mean score of the 7 items. Since an additional item had been removed during validity testing, the reliability of the revised 7-item scale was recalculated and found to be acceptable ($\alpha = .83$).

Entrepreneurial intention. Exploratory factor analysis was conducted on the 6-item entrepreneurial intention scale in order to explore the scale's validity. The Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and Bartlett's test for sphericity indicated that the application of principal axis factoring was appropriate for the sample data (KMO = .89, $\chi^2(15) = 412.38$, $p < 0.001$). One distinct factor emerged from the analysis with an eigenvalue of 3.92 and explaining 65.27% of the variance. Factor loadings ranged from .61 to .88. Table 4.9 below illustrates the factor loadings. The scale was therefore considered unidimensional and a composite score for entrepreneurial intention was calculated by deriving the mean score of the 6 items.

Table 4.9
Factor Loadings for the 6-item Entrepreneurial Intention Scale

Item	Factor Loadings
Item 1	.611
Item 2	.822
Item 3	.884
Item 4	.830
Item 5	.802
Item 6	.867

Note. Extraction Method: Principal Axis Factoring
 Items in bold have factor loadings > .30

Descriptive statistics

Prior to calculating the descriptive statistics, outliers were removed from the data. Outliers were identified as cases where composite variable scores fell at a distance of more than 1.5 times the interquartile range (IQR) from the rest of the scores for that variable (Tukey, 1977). One case had an outlier score on the average proactive personality score, five cases had outlier scores for average self-efficacy, and two cases had outlier scores on the average perseverance score (see box plots in Figures B.1 through B.3 in Appendix B). No outliers were found for the average control aspiration scores. The descriptive statistics illustrated in Table 4.10 include the number of cases, minimum and maximum scores, mean and standard deviation of all the composite scores for the variables under investigation. Minimum scores for proactive personality, self-efficacy and entrepreneurial intention were all above the scale midpoints of 3.0 indicating that the no participants rated themselves as being low on these scales. The sample mean of the composite scores for the proactive personality ($M = 4.32$), self-efficacy ($M = 4.27$) and entrepreneurial intention ($M = 4.69$) were relatively high when compared to the midpoints of 3.0, suggesting that the sample as a whole could be described as being highly proactive, self-efficacious and having a very strong intention of starting their own businesses. The two different measures of average entrepreneurial performance were quite similar to each other in terms of their descriptive statistics.

Table 4.10

Descriptive Statistics for Demographic Variables, Personality Variables, Entrepreneurial Intention and Performance

Variable	N	Minimum	Maximum	M	SD
1. Age	96	25	60	37.96	7.18
2. Tenure	96	3	42	11.92	10.23
3. Years of education	95	7	12	11.09	1.14
4. Perseverance	95	1.50	5.00	3.92	.76
5. Proactive personality	92	3.47	5.00	4.32	.38
6. Control aspiration	89	1.00	4.86	2.72	.86
7. Self-efficacy	93	3.20	5.00	4.27	.46
8. Entrepreneurial intention	92	3.67	5.00	4.69	.38
9. Initial performance	96	245.00	4742.00	1888.37	971.38
10. Recent performance	96	291.00	5348.00	2001.28	1111.18

Correlation analysis

Pearson product-moment correlation calculations were performed in order to measure the strength of the associations between perseverance, proactive personality, control aspiration, self-efficacy and entrepreneurial intention, initial performance and recent performance. Prior to calculating the correlations, the assumptions for Pearson's product-moment correlation analysis were examined. The normality of the data for each composite score was assessed by reviewing their skewness and kurtosis statistics, which are shown in Table 4.11 below. Assumptions of normality were confirmed following the guidelines by Lewis-Beck, Bryman, and Liao (2004) whereby absolute skewness and kurtosis values of less than 2.0 indicate acceptable ranges. All variables fell within these acceptable limits.

Table 4.11

Skewness and Kurtosis Values for All Scales

Variable	Skewness	Kurtosis
1. Perseverance	-.76	.74
2. Proactive personality	-.21	-.37
3. Control aspiration	.45	-.41
4. Self-efficacy	-.14	-.40
5. Entrepreneurial intention	-.98	-.33
6. Initial performance	.40	-.35
7. Recent performance	.61	.41

The linearity and homoscedasticity of the association between variables were then assessed visually using scatterplots. The scatterplots did not indicate any non-linear nor heteroscedastic relationships, and therefore it was deemed appropriate to calculate the Pearson product-moment correlations for the variables. The listwise option was used for the deletion of missing data so that the bivariate correlations would be based on the same dataset as that used for the subsequent multiple regression analyses, in which listwise deletion also took place. Table 4.12 shows the correlation matrix, with significant correlations indicated in bold.

Table 4.12
Correlation Matrix for Personality Variables, Entrepreneurial Intention and Performance, and Demographic Information

Variable	1	2	3	4	5	6	7	8	9
1. Proactive personality	-	-	-	-	-	-	-	-	-
2. Control aspiration	-.088	-	-	-	-	-	-	-	-
3. Self-efficacy	.495**	.069	-	-	-	-	-	-	-
4. Perseverance	.350**	.141	.337**	-	-	-	-	-	-
5. Entrepreneurial intention	.513**	-.162	.247*	.104	-	-	-	-	-
6. Initial performance	.091	.060	.252*	.148	.193	-	-	-	-
7. Recent performance	.015	.080	-.038	-.087	.064	.538**	-	-	-
8. Age	.081	.063	-.046	-.111	-.149	.043	.089	-	-
9. Tenure	-.163	.104	-.198	-.255*	.014	.024	.261*	-.003	-
10. Years of education	.066	-.192	.016	.081	-.134	-.002	-.080	.041	-.235*

N = 85 after listwise deletion of missing data

*, $p < .05$; **, $p < .01$

Cohen's (1988) guidelines recommend that the strength of correlations between variables can be categorised into weak ($r = \pm 0.10$ to ± 0.29), moderate ($r = \pm 0.30$ to ± 0.49) and strong ($r = \pm 0.50$ to ± 0.70). According to these guidelines, proactive personality had a moderate correlation with perseverance, a moderate to high correlation with self-efficacy and a high correlation with entrepreneurial intention. Self-efficacy had a moderate correlation with perseverance and entrepreneurial intention, and initial performance. The two different measures of entrepreneurial performance, namely initial performance and recent performance, were highly correlated. Tenure had weak, negative correlations with perseverance and years of education, and a weak yet significant positive correlation with recent performance.

Multiple Regression Analysis

In order to test the hypotheses that specific personality traits predict entrepreneurial intention and performance, multiple regression analyses were conducted, using the personality variables as the independent variables and entrepreneurial intention and performance as the dependent variables. Assumptions related to the data for multiple regression purposes were carried out. Some of these assumptions were conducted prior to the analyses taking place and others were examined after the analyses. Prior to the analyses, the correlations between the independent variables to be included in the multiple regression analyses were calculated and were all found to be below 0.8 (see Table 4.12 above) which indicates the absence of multicollinearity (Field, 2009). To further confirm the absence of multicollinearity, the collinearity diagnostics, including variance inflation factor (VIF) and tolerance statistics, were reviewed after each multiple regression analysis. These statistics were compared against guidelines suggested by Pallant (2013), namely that VIF statistics should be lower than 10, and the tolerance should be greater than .10. Multivariate normality of the variables involved in each regression was also examined after each analysis. The sample size included in the multiple regression analysis ($n = 85$) once outliers had been removed, was suitably large according to guidelines by Field in which he recommends that there should be at least 10 cases per predictor variable. Each standard regression analysis has four predictor variables therefore requiring 40 cases. For the hierarchical regression analyses, five to six predictor variables were used, therefore requiring 60 cases, and still conforming to Field's guidelines. Green (1991), on the other hand, suggests that there should be $(50 + 8k)$ cases where k is number of predictors for the overall model. According to Green's guidelines there should therefore be at least 82 cases for the regressions using four predictor variables and 90 or 98 cases for the analyses using five and six predictor variables respectively. Green's guidelines were therefore complied with in the standard regression analyses but exceeded in the hierarchical regression analyses. The results of the hierarchical regression analyses should therefore be interpreted with some caution.

Hypothesis H1: Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial intention.

A standard multiple regression analysis was conducted to test the first hypothesis, which referred to the predictive value of a combination of proactive personality, perseverance, self-efficacy and control aspiration for entrepreneurial intention. The results of the regression analysis, shown in Table 4.13, reveal that the overall model was significant ($R^2 = .281$; adjusted $R^2 = .246$; $F(4,81) = 7.926$; $p < .001$) and predicted 24.6% of the variance in entrepreneurial intention. Proactive personality was the only predictor variable that contributed uniquely and significantly to the variance in entrepreneurial intention ($\beta = .517$, $t(89) = 4.580$, $p = < .001$). The predictive value of proactive personality for entrepreneurial intention was also revealed during the correlation analysis in which proactive personality and was found to have a strong correlation of .513, ($p < .001$) with entrepreneurial intention (see Table 4.12 above). Multivariate normality was assessed by examining the normal probability plot of the regression residuals (see Figure B.4 in Appendix B). The plot suggested acceptable multivariate normality, as the expected residual values did not vary greatly from the observed values. Collinearity diagnostics, including tolerance and VIF statistics, were examined and found to be acceptable (see Table B.4 in Appendix B). Therefore the assumptions for multiple regression were considered to be satisfied for the multiple regression analysis.

Table 4.13
Standard Multiple Regression Analysis: Entrepreneurial Intention
(n = 89)

Variable	β	$t(89)$	p
Proactive personality	.517	4.580	.000
Control aspiration	-.109	-1.129	.262
Self-efficacy	.022	.202	.841
Perseverance	-.069	-.668	.506

Note. $R^2 = .281$; Adjusted $R^2 = .246$; $F(4,81) = 7.926$; $P < .001$; SE of estimate = .320
 Listwise deletion of missing data

Following the initial multiple regression analysis, a hierarchical regression analyses was then conducted using the same set of independent and dependent variables, with the addition of

age and years of formal education as control variables. Age and years of education were entered at Step 1 followed by the personality variables at Step 2 to see if the model predicted significant variance in entrepreneurial intention over and above any possible effect of age or education. This was done because previous studies had found differences in entrepreneurial intention based on these demographic variables (e.g. Crant, 1996; Liñán et al., 2005). Brockhaus and Horwitz (1986), as well as Crant (1996), also found that gender was associated with entrepreneurial behaviour. Specifically, they found that males were more likely than females to have entrepreneurial intentions. Since all members of the ED programme were female, it was not necessary to control for gender in the current study since gender was a constant. The results are shown in Table 4.14 below.

The results reflect that the overall model was significant once all independent variables had been entered ($R^2 = .352$, $F(6,78) = 7.059$; $p < .001$). The adjusted R^2 value of .302 indicated that, having controlled for age and education, the personality variables explained just over 30% of the variance in entrepreneurial intention. This indicates that almost a third of the variability in entrepreneurial intention can be predicted by an individual's self-rating of their proactive personality, control aspirations, perseverance and self-efficacy. This was an increase in explained variance compared with the results from the standard multiple regression shown in Table 4.13 above in which the personality variables explained approximately 25% of the variance in entrepreneurial intention. Neither age nor years of education explained any significant variance in entrepreneurial intention on their own as can be seen from the non-significant results from Step 1 ($R^2 = .039$, $F(2,82) = 1.644$; $p = .200$, n.s.). However, when the personality variables were added in Step 2, age did predict unique variance in entrepreneurial intention ($beta = -.190$, $t(85) = -2.028$, $p < .05$), whereas education did not. The normal probability plot of the regression residuals (see Figure B.5 in Appendix B) suggested acceptable multivariate normality. Collinearity diagnostics, including tolerance and VIF statistics, were examined and found to be acceptable (see Table B.5 in Appendix B).

Table 4.14
Hierarchical Multiple Regression Analysis: Entrepreneurial Intention, Controlling for Age and Years of Formal Education (n = 85)

Variable	Step 1	Step 2
Age	-.144	-.190*
Years of education	-.128	-.179
Proactive Personality		.562**
Control aspiration		-.119
Self-efficacy		.003
Perseverance		-.091
R^2	.039	.352**
Adjusted R^2	.015	.302**
Change in R^2		.313**

Note. Listwise deletion of missing data
 After Step 1: $F(2,82) = 1.644$; $p = .200$, n.s.
 After Step 2: $F(6,78) = 7.059$; $p < .001$
 *, $p < .05$; **, $p < .01$

Regression coefficients are standardized

Hypothesis H2: Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial performance.

Two separate hierarchical multiple regression analyses were conducted to test hypothesis H2, which referred to the predictive value of an overall model including proactive personality, perseverance, self-efficacy and control aspiration, for performance. The first analysis used *initial performance* as the dependent variable and the second analysis used *recent performance* as the dependent variable. The results of the standard regression analysis for initial performance are shown in Table 4.15. They reveal that the overall model was not significant. However, self-efficacy significantly predicted unique variance in initial performance ($\beta = .252$, $t(88) = 2.026$, $p < .05$), and these two variables were also found to have a significant bivariate correlation ($r = .252$, $p < .05$), although the strength of the correlation was weak. None of the other independent variables predicted unique variance in initial performance. The normal probability plot of the regression residuals and collinearity diagnostics are shown in Figure B.6 and Table B.6 respectively.

Table 4.15
Standard Multiple Regression Analysis: Initial Performance (n = 88)

Variable	β	$t(88)$	p
Proactive Personality	-.064	-.512	.610
Control aspiration	.031	.292	.771
Self-efficacy	.252	2.026	.046
Perseverance	.084	.734	.465

Note. $R^2 = .073$; Adjusted $R^2 = .028$; $F(4,83) = 1.626$; $p = .175$, n.s., SE of estimate = .933
 Casewise deletion of missing data

The results of the standard regression analysis for recent performance are shown in Table 4.16. The results reveal that the overall model was not significant, and none of the independent variables predicted unique variance in recent performance. The normal probability plot of the regression residuals and collinearity diagnostics are shown in Figure B.7 and Table B.7 respectively.

Table 4.16
Standard Multiple Regression Analysis: Recent Performance (n = 88)

Variable	β	$t(88)$	p
Proactive Personality	.090	.709	.480
Control aspiration	.123	1.125	.264
Self-efficacy	-.051	-.399	.691
Perseverance	-.122	-1.041	.301

Note. $R^2 = .028$; Adjusted $R^2 = -.019$; $F(4,83) = .604$; $p = .661$, n.s.
 Listwise deletion of missing data

A hierarchical multiple regression analysis using the same dependent and independent variables as in Table 4.16, with the addition of tenure as a control variable. Tenure (in months) was entered in Step 1 in order to control for the length of time that participants had been members of the ED programme. The results of the analysis are shown in Table 4.17 below. The results from Step 1 ($R^2 = .076$, $F(1,86) = 7.087$; $p < .01$) show that tenure predicted approximately 7% of the variance in recent performance. The association was positive, indicating that longer periods of membership of the ED programme predicted higher levels of recent sales performance. Once all independent variables had been entered

in Step 2, the overall model was not significant ($R^2 = .086$, $F(4,82) = .227$; $p = .923$, n.s.). The normal probability plot of the regression residuals and collinearity diagnostics are shown in Figure B.8 and Table B.8 respectively.

Table 4.17
Hierarchical Multiple Regression Analysis: Recent Performance (n = 88)

Variable	Step 1	Step 2
Tenure	.276**	.258*
Proactive Personality		.084
Control aspiration		.076
Self-efficacy		-.017
Perseverance		-.053
R^2	.076**	.086
Adjusted R^2	.065**	.031
Change in R^2		.010

Note. listwise deletion of missing data
 After Step 1: $F(1,86) = 7.087$; $p < .01$
 After Step 2: $F(4,82) = .227$; $p = .923$, n.s.
 *, $p < .05$; **, $p < .01$
 Regression coefficients are standardized

Summary of Results

Firstly, as shown in Table 4.18 below, support was found for the first main hypothesis, H1. Of the four secondary hypotheses related to H1, support was only found for hypothesis H1a, namely that proactive personality predicts unique variance in entrepreneurial intention. No support was found for hypotheses H1b, H1c, or H1d.

Table 4.18

Summary of Results of Hypothesis Testing for Hypothesis 1

Hypothesis		Results
Main hypothesis		
H1	<i>Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial intention.</i>	Supported
Secondary hypotheses		
H1a	<i>Proactive personality predicts unique variance in entrepreneurial intention.</i>	Supported
H1b	<i>Perseverance predicts unique variance in entrepreneurial intention.</i>	Not supported
H1c	<i>Self-efficacy predicts unique variance in entrepreneurial intention.</i>	Not supported
H1d	<i>Control aspiration predicts unique variance in entrepreneurial intention.</i>	Not supported

Secondly, as illustrated in Table 4.19 below, the second main hypothesis, H2 was not supported by the results of this study, namely that an overall model including self-efficacy, perseverance, proactive personality and control aspiration as independent variables, did not predict variance in entrepreneurial performance. However, one of the secondary hypotheses linked to H2, namely H2c, was supported. H2c proposed that self-efficacy predicts unique variance in entrepreneurial performance.

Table 4.19

Summary of Results of Hypothesis Testing for Hypothesis 2

Hypothesis		Results	
		Initial performance	Recent performance
Main hypothesis			
H2	<i>Proactive personality, together with perseverance, self-efficacy and control aspiration, predicts entrepreneurial performance.</i>	Not supported	Not supported
Secondary hypotheses			
H2a	<i>Proactive personality predicts unique variance in entrepreneurial performance.</i>	Not supported	Not supported
H2b	<i>Perseverance predicts unique variance in entrepreneurial performance.</i>	Not supported	Not supported
H2c	<i>Self-efficacy predicts unique variance in entrepreneurial performance.</i>	Supported	Not supported
H2d	<i>Control aspiration predicts unique variance in entrepreneurial performance.</i>	Not supported	Not supported

CHAPTER 5: DISCUSSION

This chapter contains a discussion of the findings from this study, which was conducted to explore the relationship between personality traits and entrepreneurial intention and performance. The study was undertaken within the context of an enterprise development programme. This subject is of particular value within the South African context in which a number of enterprise development and business incubator programmes have been established to promote and support entrepreneurship in the context of high levels of unemployment. The coordinators of such programmes need to be able to identify and select into these programmes, the candidates most likely to succeed as entrepreneurs in order to make sure that the money invested in such programmes is spent most effectively. The following sections contain a discussion of the outcomes of the study that compares and contrasts the outcomes against the findings published in previous academic literature pertaining to the relationships between personality traits and entrepreneurship. The predictive value of the personality variables under investigation for entrepreneurial intention and performance is then evaluated. The chapter ends with an outline of the limitations of the study, and includes suggestions for further research.

Personality traits and entrepreneurial intention

This section outlines the results related to the first group of hypotheses which pertained to entrepreneurial intention. The diagram illustrating the hypothesised relationship between proactive personality, perseverance, self-efficacy, control aspiration and entrepreneurial intention is shown again below for reference.

The results of this study show significant support for the first main hypothesis. The overall standard multiple regression model for the variables shown in Figure 5.1 explained approximately 25% of the variance in entrepreneurial intention amongst the members of the enterprise development programme. This finding is in line with the results of previous studies that also found support for the relationship between entrepreneurial intention and personality traits, including proactive personality (Crant, 1996; Rauch & Frese, 2007), self-efficacy and control aspiration (Frese et al., 1996) and perseverance (Rauch & Frese, 2007).

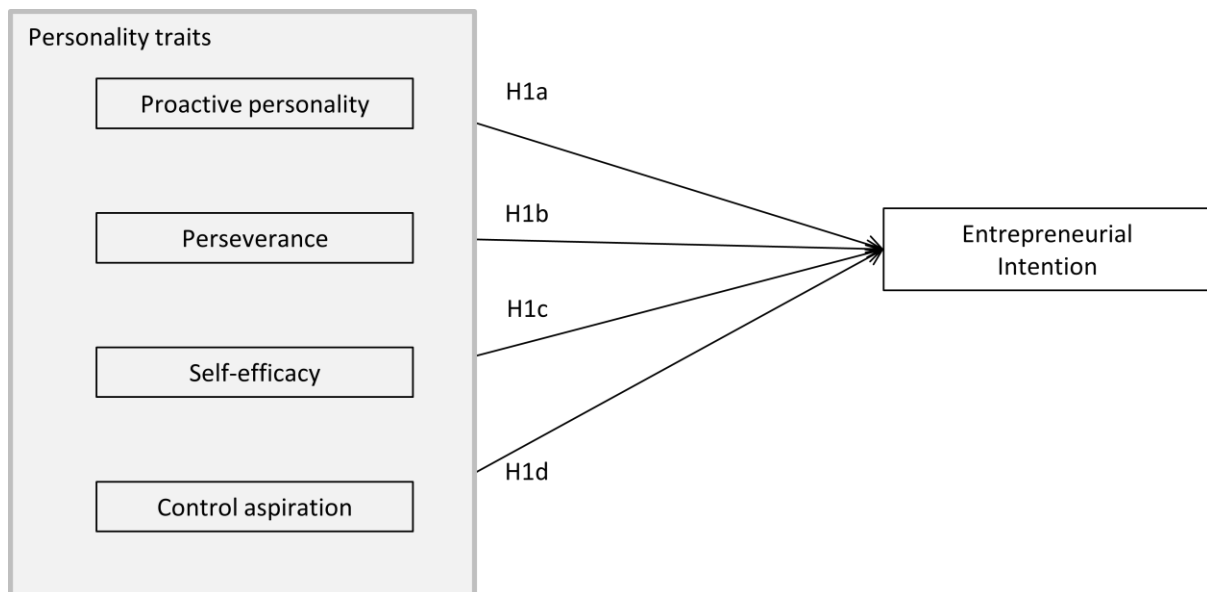


Figure 5.1. The relationship between personality traits and entrepreneurial intention

Personality variables

Of the four predictor variables shown in Figure 5.1 above, only proactive personality significantly explained a unique portion of the variance in entrepreneurial intention, thereby supporting hypothesis H1a. Self-efficacy, perseverance and control aspiration did not explain unique variance and therefore hypotheses H1b, H1c, and H1d were not supported by the results of this study. In the following sections, each of the predictor personality variables under investigation will be discussed in light of their ability to predict variance in entrepreneurial intention.

Proactive personality. Proactive personality was found in this study to have a high bivariate correlation with entrepreneurial intention, and to explain unique variance in entrepreneurial intention in the regression analysis. These findings are in line with the findings in previous studies by Crant (1996), and Rauch and Frese (2007), who also established that proactive personality was positively associated with entrepreneurial intention. By definition, entrepreneurship requires proactive behaviour such as finding new opportunities, and acting on them to establish new businesses. Crant (1996) describes people with a highly proactive personality as wanting to influence their environment, and therefore it is likely that such individuals may be more drawn to becoming entrepreneurs in charge of their own businesses than being employees and having to report to management.

A proactive approach is also described by Crant (1996) as being rooted in Bandura's (1977) interactionist viewpoint in which situations and people are functions of one another. One could therefore anticipate that proactive individuals would be more likely to create an environment for themselves which is more conducive to fulfilling their intentions. What is interesting, given the context of the current study, is that although proactive personality was indeed found to predict entrepreneurial intention, the participants opted to channel their proactivity towards joining a fairly structured ED programme rather than deciding to start a business on their own. Had they started their own businesses, they would most likely have had more freedom to influence their environment. The choice by the participants to enter the programme may be partly explained by their relatively low level of education, and therefore the perceived attractiveness of the entrepreneurial training and support that the ED programme offered. Members of the programme were able to apply for training within the programme that culminated in a formal entrepreneurship qualification. Applicants were also given access to start-up funding since the programme included an initial start-up loan of R500 which the participants could pay back over their first five months of trading. The GEM research reports have identified low education and lack of skills as the key factors constraining entrepreneurial development in South Africa (Herrington, Kew, & Kew, 2010). They may also have wanted to take advantage of the opportunity afforded to them under the BEE initiative of the South African government. As part of BEE, organisations donate funds to ED programmes which are aimed, in part, at redressing the impacts of past disadvantages that they experienced under the apartheid system of government prior to 1994. The funding for ED programmes enables previously disadvantaged individuals to start and run their own businesses which they may otherwise have been unable to do on their own.

Perseverance. Perseverance did not explain unique variance in entrepreneurial intention over and above the other predictor variables. This was expected as there had been no significant bivariate correlation between perseverance and entrepreneurial intention, either. Markman et al. (2005) regarded perseverance as the tendency to persist in the face of setbacks. A possible reason for there being no significant relationship between perseverance and entrepreneurial intention in the current sample may be due to participants' family responsibilities and the need to balance family and business

commitments. Many women in South African townships are the main breadwinner for their families. Within the current sample, only 30% of the participants were married, and yet all of them had dependent children, since this was a prerequisite for entering the programme. This suggests that many of the participants may have been largely or solely responsible for carrying out child-rearing activities, and bearing the financial burden of caring for their families. With the high rate of unemployment, many of the fathers of their children may have been unemployed and therefore not likely to be contributing financially. When answering the questions related to perseverance, e.g., “I am likely to stop doing a job when major difficulties get in the way”, the participants may have been considering that their family responsibilities would take priority over business activities. They may therefore have considered that the most appropriate thing for them to do would be to stop doing a job if major personal difficulties arose, and thus would have been scored as being low in perseverance in that example. The impact of HIV/Aids on the communities in which the participants live, may also have further impacted on the women in the sample. For example, their ability and inclination to persist in business activities in the face of significant personal and family hardships stemming from HIV/Aids-related illness and bereavements, may feel overwhelming to them. In fact, South Africa was ranked last out of 133 countries in the 2008 Global Competitiveness Report in terms of the business impact of HIV/Aids (Herrington et al., 2010). Therefore, although it seems likely that the participants may have had strong levels of perseverance with regards to functioning in their daily lives, the scale used in this study measured perseverance in a work context, and may therefore not have tapped into their true levels of perseverance. This could have resulted in the weak relationship between perseverance as measured by the scale in this study, and entrepreneurial intention.

Another possible explanation for the lack of association between perseverance and entrepreneurial intention could be due to the fact that the scale was reduced to only two items. Although Eisinga et al. (2013) point out that 2-item scales occasionally result due to poor performing items being removed from a scale and that, although not ideal, 2-item scales can be used in further analysis, other researchers such as Hair et al. (1998) regard 2-item scales as undesirable for summated scales. The scale items were also worded in such a way that they had to be reverse-scored. Viljoen (2012) recommends that for inexperienced respondents, as well as those who are completing a questionnaire in a second language, all

items should be worded positively to avoid any misunderstandings that could lead to inaccurate responses and failure to capture the true attitudes of the participants.

It is likely that both contextual factors and difficulties in understanding the negatively worded items may have played a part in the lack of significant findings for the perseverance scale. In future research, a scale using positively-worded perseverance items, as well items that tap into general perseverance, may yield more conclusive results.

Self-efficacy. Self-efficacy was not found to predict unique variance in entrepreneurial intention during the multiple regression analysis. However, self-efficacy and entrepreneurial intention were found to have a significant bivariate correlation using Pearson's product moment correlation analysis. This could be partly due to the range of the scores for this variable being relatively restricted. As illustrated in Table 4.10 in the previous chapter, the minimum score for self-efficacy was 3.20 on a 5-point scale and the mean was 4.28 ($SD = .46$). This means that, on average, participants scored themselves highly on the self-efficacy scale. A possible explanation for this result is that individuals high in self-efficacy may be more likely to apply to join an enterprise development programme for entrepreneurs, whereas individuals low in self-efficacy may question their ability to succeed and therefore be less likely to enter into entrepreneurship. In this way, self-selection would have meant that the sample was not representative of the broader population with regards to self-efficacy. However, this explanation is unlikely to be the case given that a significant bivariate correlation was found between the two variables.

On the other hand, some of the participants in this study may have rated themselves according to how they felt the programme coordinators would like them to be even though they were assured of the confidentiality of the results. They may have been nervous that the results could be traced back to them and that they would want to be seen as self-efficacious, thus indicating high scores regardless of whether or not they actually saw themselves as possessing high self-efficacy. This explanation is also unlikely to be the main reason for self-efficacy failing to explain unique variance in entrepreneurial intention, since if it were true, no bivariate relationship between the variables would have been expected either, and yet a significant correlation was found.

Lastly, self-efficacy may have failed to explain unique variance in entrepreneurial

intention, simply because the variance explained in entrepreneurial intention by self-efficacy was not unique, but rather shared with the other independent variables. Self-efficacy was found to be significantly correlated with both proactive personality and perseverance, although not strongly enough to be regarded as causing multicollinearity amongst the independent variables. Therefore, any variance that could be explained in the multiple regression by self-efficacy had already have been explained by other variables, in which case self-efficacy could not add any additional predictive value.

Control aspiration. Control aspiration did not predict any unique variance in entrepreneurial intention, and did not correlate significantly with entrepreneurial intention in the bivariate correlation analysis either. According to Frese et al. (2007), aspirations for control are reduced when one feels unable to exert control. This idea stems from the learned helplessness model, in which individuals who feel that they have no control over their environment, begin to behave as though they are helpless (Abramson, Seligman, & Teasdale, 1978). The participants in this study had all been unemployed at the time of applying to join the ED programme, and they had come from disadvantaged backgrounds. Therefore, they were likely to be experiencing financial strain at the time of applying to the programme, as well as having experienced hardships and inequality growing up in South Africa. Under the apartheid system of government, it is likely that many black people would have felt helpless to influence their circumstances in which they were treated differently based on their racial group, and they may have generalised these feelings of helplessness to new circumstances, thereby incorporating learned helplessness into their behaviour.

The items in the control aspiration scale were also negatively worded, and therefore participants may have responded inaccurately to the statements, as was suggested as being the case for the perseverance scale.

Age and years of education

In a review of literature relating to individual differences and entrepreneurial behaviours, Brockhaus and Horwitz (1986) found that in addition to personality traits, specific personal characteristics, including education, were associated with entrepreneurial behaviour. Crant (1996) similarly found that education was associated with entrepreneurial intention. In both studies, education and entrepreneurial intention were positively associated, indicating that the higher the level of education, the more likely individuals were

to start their own businesses. Studies have also found age to be associated with entrepreneurial intention (Brockhaus & Horwitz, 1986; Dolton & Makepeace, 1990). In some studies, the relationship was found to be curvilinear. For example, Bönnte, Falcke, and Heblich (2009) found a curvilinear relationship between age and entrepreneurial behaviour, in the shape of an inverse U-shape with a peak at around age 40. On the other hand, Dolton and Makepeace found a linear relationship. In the current study, no curvilinear relationship was suggested.

Because of these findings in previous literature, both age and years of education were controlled for by entering them into a hierarchical regression analysis in a first step prior to entering the personality variables in a second step. The predictive value for entrepreneurial intention of the overall model of personality traits used in this study remained valid when controlling for age and years of education, and the explained variance increased from 25% to 30%. Contrary to previous studies however, in this study, education did not predict unique variance in entrepreneurial intention. The differences in findings may be due to the current sample having a relatively low level of education, in which the highest level of education was Grade 12, which equated to 12 years of formal schooling. In Crant's study that found education to be a significant predictor, the participants were all undergraduate or postgraduate university students, and the group of MBA students were found to have the highest levels of entrepreneurial intention amongst that sample.

Age did not predict unique variance in entrepreneurial intention in this study in the first step of the hierarchical regression analysis, and neither did it have a significant bivariate correlation with entrepreneurial intention. However, once the personality variables had been entered into the regression equation in Step 2, age did predict unique variance in entrepreneurial intention. The reason for age only predicting unique variance in Step 2 of the regression, may be due to what is known as the suppressor effect. Tabachnick and Fidell (2007) define suppressor variables as variables that improve the prediction of other independent variable(s) by suppressing variance that is irrelevant to the prediction of the dependent variable. In this study, it is possible that the predictive value of age in the regression model may have been improved due to one or more of the personality variables suppressing non-relevant variance in entrepreneurial intention when they were added into the regression equation in Step 2.

Summary of predictive validity of personality variables for entrepreneurial intention

In summary, although the personality variables included in the main hypothesis were found to significantly predict entrepreneurial intention as an overall model, only proactive personality uniquely predicted entrepreneurial intention. Proactive personality was also the only predictor variable found to have a strong, significant correlation with entrepreneurial intention. Based on the results in this study, proactive personality on its own predicts 25% of the variance and the overall multiple regression model also predicts 25% of the variance. Including the other variables into the model does not increase the amount of variance already explained by proactive personality, thus assessing proactive personality alone would be sufficient. Therefore, based on this study, an enterprise development programme could benefit from assessing the proactive personality of applicants to the programme and using the results as one of the inputs into their selection process for new members.

What is interesting is that when age and education are controlled for, the amount of explained variance of the overall model increases to 30%. A possible explanation for the increase in predicted variance is that one or more of the predictor variables might be acting as suppressor variables.

Predictive validity of personality traits for entrepreneurial performance

Whilst assessing entrepreneurial intention is useful since individuals with a higher level of entrepreneurial intention are more likely to start their own business, entrepreneurial intention does not necessarily translate into behaviour. In this study, entrepreneurial intention was not significantly correlated with either of the entrepreneurial performance measures. Furthermore, as mentioned in Chapter 1, many businesses fail in their first few years of operation and the rate of failure of businesses in South Africa is amongst the highest in the world (Olawale & Garwe, 2010). It is therefore of great value to assess actual entrepreneurial performance in order to be able to predict not only the likelihood of starting a business, but the likelihood of the business being successful. Thus, the predictor variables were explored in relation to entrepreneurial performance in order to test the second set of hypotheses. This results of the analyses carried out to test these hypotheses are discussed in the next sections. The diagram illustrating the hypothesised relationship between the personality variables and entrepreneurial performance is shown again below in Figure 5.2 for reference.

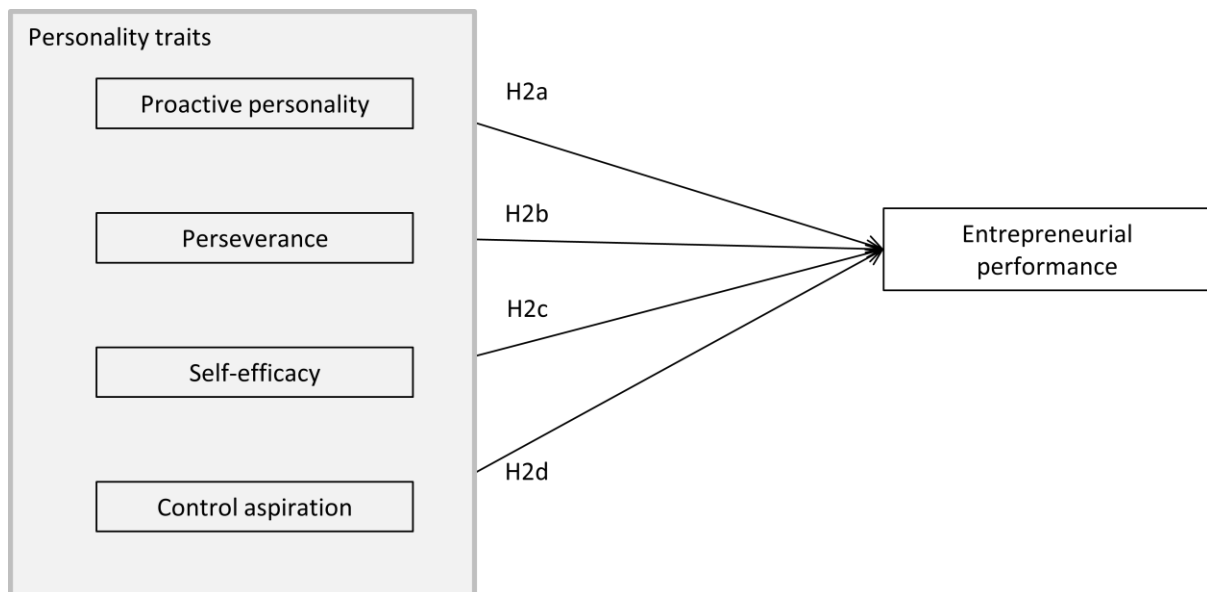


Figure 5.2. The relationship between personality traits and entrepreneurial performance

Personality traits and entrepreneurial performance

As described earlier, two different methods of operationalising entrepreneurial performance, namely initial performance and recent performance, were included in the study to counteract different contextual issues. The results of the standard multiple regressions containing the four personality variables as independent variables and recent or initial entrepreneurial performance as the dependent variable, did not show significant predictive validity of personality traits for entrepreneurial performance. Therefore hypothesis H2 is not supported.

Personality variables

Although the model as a whole was not significant, one of the predictor variables, namely self-efficacy, was found to predict unique variance in initial performance, and to have a significant although weak bivariate correlation with initial entrepreneurial performance. However, self-efficacy did not predict unique variance in recent performance, and neither did it correlate significantly with recent performance. None of the other predictor variables, namely proactive personality, perseverance or control aspiration, were found to be significantly associated with entrepreneurial performance through either bivariate correlations or through multiple regression. Based on these results, there is partial support for hypothesis H2c, since self-efficacy had an association with initial performance but not with recent performance. No support was found for hypotheses H2a, H2b, or H2d. In the

following sections, the results relating to each of the predictor personality variables will be discussed in turn.

Proactive personality. Although proactive personality was found to have a significant association with entrepreneurial intention, this study did not reveal any relationship between proactive personality and entrepreneurial performance. This result differs from findings by Rauch and Frese (2007) who found, in a meta-analysis of previous research, that proactive personality was linked to both entrepreneurial intention and performance. On the other hand, Gartner (1989) as well as Low and MacMillan (1988) did not find any relationship between personality traits and entrepreneurial performance based on narrative reviews of previous studies. Rauch and Frese examined both key informant ratings as well as financial and growth measures to assess business performance. They found that the informant ratings produced higher effect sizes when assessing relationships between personality traits and business performance than when using financial and growth measures. However, the results based on financial and growth measures were still significant. Therefore, the operationalisation of performance is likely to have a bearing on the results of studies into entrepreneurial performance. In the current study, only financial measures were used to operationalise performance. Growth measures would have been inappropriate for this study since participants had only been running their businesses for an average of approximately 12 months.

A possible explanation for the lack of relationship between proactive personality and entrepreneurial performance in this study, even though a relationship did exist with entrepreneurial intention, is the relatively low level of education of the participants. A person measuring high in proactive personality may well be action-oriented and have the desire to take initiative, but they may be unaware of the best course of action to take as the owner of a business, and therefore not experience strong business results.

Perseverance. Perseverance did not explain unique variance in recent or initial entrepreneurial performance, and also did not correlate significantly with either of these performance variables. Perseverance also did not have any relationship with entrepreneurial intention in this study. Some of the possible explanations put forward for the lack of association with entrepreneurial intention, namely the scale measuring perseverance related specifically to work tasks, the priority of family responsibilities, the

final scale having only two items, and issues relating to the negative working of scale items, may equally apply to the lack of association with performance.

Self-efficacy. Although self-efficacy did not explain any unique variance in entrepreneurial intention, it did explain unique variance in initial performance. This was expected as self-efficacy and initial performance were also found to have a significant bivariate correlation. However, self-efficacy did not explain any variance in recent performance. Self-efficacy had also correlated significantly with entrepreneurial intention even though it did not predict any unique variance in entrepreneurial intention. Self-efficacy relates to an individual's belief in his or her ability to control events of importance, and also influences the degree of time and effort the individual will expend related to such important events (Bandura, 1982). Peterson and Arnn (2004) suggested that self-efficacy could be regarded as a dynamic as opposed to a static construct. It is therefore interesting that in the current study, self-efficacy, which was measured at the same time as recent performance, was better at predicting initial performance than recent (current) performance. In some cases, initial performance had occurred more than two years previously. However, Peterson and Arnn also point out that self-efficacy is built up as a result of one's direct or vicarious experiences of mastery, as well as one's physical and emotional reactions to events. It is therefore feasible that the results of the current assessment of self-efficacy could have been shaped by participants' experiences of initial successes or failures in the programme.

Another possible explanation for the differences in associations between self-efficacy and the two different measures of performance could be that participants found it easier to make sales when they first started out in the programme, compared with later on. For example, when participants initially joined the programme, they may have approached close friends to become their first customers. Their friends were most likely excited about being able to purchase cost-effective, quality merchandise and at the same time to be able to assist their friend with establishing their new business. Participants may then have discovered that their friends and family could not sustain the same level of purchasing and the participants would then have needed to broaden their customer base which they may have found difficult to do. As more participants joined the programme, it is also possible that they began to compete increasingly for the same customers. As all the members purchase stock from the programme, they also had similar product offerings for their

customers and they may have felt pressure to reduce their prices in order to make sales, but thereby reducing their profits as well. It would be useful to measure the self-efficacy of prospective members when they apply to the programme and thereafter to re-assess this periodically to see if there are any changes.

Control aspiration. Control aspiration did not correlate with any other variables under investigation, and neither did it predict any unique variance in any of the dependent variables. As described previously, the scale itself may have been problematic for the participants as the items were worded negatively and the respondents may have answered inaccurately as a result of misunderstandings or overlooking the negative wording when deciding on their responses to the scale items. In future studies that work with relatively uneducated participants, who are asked to complete scales in a language that may be their second or even third language, researchers should strongly consider Viljoen's (2012) recommendations that all items should be worded positively.

Tenure

The recent performance figures were calculated for all participants during the same calendar months rather than for the same relative period after joining the programme. Because the participants had been members of the ED programme for quite different lengths of time, ranging from three months to over 40 months, other contextual and seasonal factors may have come into play which could have affected the results in the regression analysis. Therefore, the regression analysis for recent performance, was repeated, this time controlling for tenure. Unexpectedly, tenure itself was found to predict unique variance in recent entrepreneurial performance when entered in Step 1 of a hierarchical regression. Tenure explained approximately 7% of the variance in recent performance, and indicated that the longer a participant had been a member of the programme, the better they performed. However, once all the personality variables had been entered in Step 2 of the regression, the overall model was once again non-significant, and the personality variables did not predict any unique variance in recent performance. Therefore none of the afore-mentioned results were significantly different having controlled for tenure.

In addition, the context in which this study took place is that of an enterprise development programme offering opportunities to unemployed mothers to start their own businesses. Applicants to the programme may actually fall under the category of necessity-driven entrepreneurs as defined in the Global Entrepreneurship Monitor report (Xavier et. al. 2012) rather than being natural entrepreneurs as was suggested by their responses to the questionnaire. It could be argued that so-called natural entrepreneurs would be likely to start their own business ventures without seeking the support of a structured entrepreneurial development programme such as the enterprise development programme used in this study.

Summary

While some support was found for the first main hypothesis, no support was found in this study for the second main hypothesis. In this study, the variables that were found to be of most value in predicting entrepreneurial intention and performance, were proactive personality and self-efficacy. Self-efficacy was the only variable found to correlate with both entrepreneurial intention and performance. However, it did not predict unique variance in entrepreneurial intention. Tenure in the ED programme was found to predict unique variance in recent performance.

Limitations and suggestions for future research

This study focused on current members of an enterprise development programme with the aim of identifying the personality attributes of the individuals most likely to succeed as entrepreneurs. However, the participants of the current study were all still participating in the structured programme and therefore it could be argued that their performance data did not reflect how they might perform subsequent to graduating from the programme. It would therefore be useful to conduct further research in which the performance of participants could be studied longitudinally including performance after their membership in the programme had ended. This would be valuable information that could be used to evaluate the impact of enterprise development programmes, and whether or not they were contributing to the reduction of unemployment within the South Africa.

Another characteristic of this study that is worthy of note is that the participants were all

females. As described earlier in this report, previous studies have found that gender had an influence on entrepreneurial behaviour. Specifically, they found that males are significantly more likely than females to become entrepreneurs. Therefore, this study may have underestimated some of the relationships that might have been found if the sample had included both males and females. Further research could also incorporate several enterprise development programmes so that any unique attributes of individual programmes, such as industry or location could be controlled for.

Lastly, for future studies that gather data from participants who are relatively uneducated and in which the participants are required to respond to items that are not in their first language, scale items should be positively worded in order to avoid potential misunderstandings which may result in data being collected that is not a true reflection of the participants' views.

The results of this study have confirmed previous findings that personality traits do have predictive value for both entrepreneurial intention and performance. In particular, this study found that, amongst the personality variables under investigation, a proactive personality is the best predictor of entrepreneurial intention, and self-efficacy is the best predictor of entrepreneurial success.

CHAPTER 6: CONCLUSION

Over the last few decades, there has been immense interest in studying entrepreneurship. One of the reasons for the high degree of interest is that entrepreneurship has been recognised as playing a vital role in alleviating increasing levels of unemployment. Unemployment is a global problem, and has been widely acknowledged as being of particular significance within developing countries. In South Africa, official levels of unemployment have been estimated at approximately 25%, and unofficial estimates are closer to 40%. The South African government has recognised the value of supporting the growth of small business and entrepreneurial activity and has put measures in place aimed at stimulating such growth. These measures include the provision of business incubator support, and the promotion and regulation of enterprise development (ED) programmes.

A main thrust within the research into entrepreneurship has been centred around finding ways of differentiating between entrepreneurs and non-entrepreneurs. This study aimed to contribute to the existing body of entrepreneurial research by investigating the predictive value of personality traits for entrepreneurial intention and performance within an ED programme in Cape Town. It was also hoped that the results of the study would add direct benefit to the ED programme in which the study was conducted, by proposing additional selection criteria aimed at improving the differentiation between the candidates most likely and those least likely to succeed as entrepreneurs. A finding of particular interest and value to the ED programme is that the longer their members had been in the programme, the better their performance. This suggests that the programme is adding direct value in developing the entrepreneurial performance of their members.

Implications for practice

Organisations and policy makers who are faced with making decisions related to investing in individual entrepreneurs or entrepreneurial support programmes, should consider reviewing their current selection criteria with a view to incorporating personality measures as additional criteria. By doing so, the likelihood of channelling financial and non-financial support towards individuals with the greatest probability of succeeding as entrepreneurs, is expected to increase. This in turn is expected to make a positive contribution towards the reduction of unemployment.

REFERENCES

- Adcorp. (2012). *Adcorp employment index, February 2012*. Retrieved from <http://www.adcorp.co.za/Documents/12%2003%202012%20REPORT%20Adcorp%20Employment%20Index%20February%202012.pdf>
- Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology, 87*(1), 49-74.
- African Dream Trust. (n.d.). <http://www.africandreamtrust.co.za>
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health, 26*(9), 1113-1127.
- Audretsch, D. (2002). *Entrepreneurship: A survey of the literature*. Institute for Development Strategies, Indiana University and Centre for Economic Policy Research (CEPR). Prepared for the European Commission, Enterprise Directorate General. London.
- AWETHU Project. (2013). <http://www.awethuproject.co.za>
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, N.J.: Prentice Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147.
- Barrick, M. R., & Mount, M. K. (2005). Yes, personality matters: Moving on to more important matters. *Human Performance, 18*(4), 359-372.
- Bateman, T., & Crant, M. J. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behaviour, 14*(2), 103-118.
- Becherer, R., & Maurer, J. (1999). The proactive personality disposition and entrepreneurial behavior among small company presidents. *Journal of Small Business Management, 37*(1), 28-37.
- Bird, B. (1988). Implementing entrepreneurial ideas: The case of intention. *Academy of Management Review, 13*, 442-453.

- Bönte, W., Falck, O., & Heblich, S. (2009). The impact of regional age structure on entrepreneurship. *Economic Geography*, 85(3), 269-287.
- Bosma, N. S., Wennekers, S., & Amorós, J. E. (2012). *Global Entrepreneurship Monitor 2011 extended global report: Entrepreneurs and entrepreneurial employees across the globe*. London, UK: Global Entrepreneurship Research Association.
- Brockhaus, R. H., & Horwitz, P. S. (1986). The psychology of the entrepreneur. In Sexton, D.L. & Smilor, R. W. (Eds.). *The art and science of entrepreneurship* (pp. 25-48). Cambridge, MA: Ballinger.
- Campbell, D. P., & Holland, J. L. (1972). A merger in vocational interest research: Applying Holland's theory to Strong's data. *Journal of Vocational Behavior*, 2(4), 353-376.
- Caprara, G. V., & Cervone, C. (2000). *Personality: Determinants, dynamics, and potentials*. New York: Cambridge University Press.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295-316.
- Chrisman, J. J. (1997). *Estimating the extent entrepreneurial intentions become reality: A note*. United States Association for Small Business and Entrepreneurship, Annual National Conference. Retrieved from <http://sbaer.uca.edu/research/icsb/1997/30.pdf>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Collins, C., Hanges, P., & Locke, E. (2004). The relationship of achievement motivation to entrepreneurial behavior: A meta-analysis. *Human Performance*, 17(1), 95-117.
- Concise Oxford dictionary* (2004). New York: Oxford University Press.
- Crant, M. (1996). The proactive personality scale as a predictor of entrepreneurial intentions. *Journal of Small Business Management*, 34(3), 42-49.
- Davidsson, P. (2004). *Researching entrepreneurship*. New York: Springer.
- Department of Trade and Industry. (2013). Broad-based black economic empowerment (B-BBEE) codes of good practice. *Government Gazette*. Vol. 580, No. 36928.

- Díaz-Casero, J. C., Díaz-Aunión, D. Á. M., Sánchez-Escobedo, M. C., Coduras, A., & Hernández-Mogollón, R. (2012). Economic freedom and entrepreneurial activity. *Management Decision*, 50(9), 1686-1711.
- Dolton, P. J., & Makepeace, G. H. (1990). Self-employment among graduates. *Bulletin of Economic Research*, 42(1), 35-53.
- Eisinga, R., Te Grotenhuis, M., & Pelzer, B. (2013). The reliability of a two-item scale: Pearson, Cronbach, or Spearman-Brown? *International Journal of Public Health*, 58(4), 637-642.
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage Publications.
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299.
- Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behavior*, 23, 133-187.
- Frese, M., Garst, H., & Fay, D. (2007). Making things happen: reciprocal relationships between work characteristics and personal initiative in a four-wave longitudinal structural equation model. *The Journal of applied psychology*, 92(4), 1084-1102.
- Frese, M., Krauss, S. I., Keith, N., Escher, S., Grabarkiewicz, R., Luneng, S. T., & Friedrich, C. (2007). Business owners' action planning and its relationship to business success in three African countries. *The Journal of Applied Psychology*, 92(6), 1481-1498.
- Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal*, 39(1), 37-63.
- Frese, M., Van Gelderen, M., & Ombach, M. (2000). How to plan as a small scale business owner: Psychological process characteristics of action strategies and success. *Journal of Small Business Management*, 38(2), 1-18.
- Fourie, F. C. V. N. (2011). The South African unemployment debate: Three worlds, three discourses? *A Southern Africa Labour and Development Research Unit Working Paper Number 63*. Cape Town: Southern Africa Labour and Development Research Unit (SALDRU), University of Cape Town.
- Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *The Academy of Management Review*, 10(4), 696.

- Government Communication and Information System. (2012). South Africa Yearbook 2011/2012. Retrieved from <http://www.gcis.gov.za/content/resourcecentre/sa-info/yearbook2011-12>
- Green, S., B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioural Research*, 26(3), 265-275.
- Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology*, 18, 135-164.
- Hair, J. F., Anderson, R E., Tatham, RL., & Black, W.C. (1998). *Multivariate data analysis* (5th ed.). Singapore: Pearson Education.
- Herrington, M., Kew, J., & Kew, P. (2010). *Tracking entrepreneurship in South Africa: A Global Entrepreneurship Monitor (GEM) perspective*. Cape Town: Graduate School of Business, University of Cape Town.
- Hogan, R. (2005). In defense of personality measurement: New wine for old whiners. *Human Performance*, 18(4), 331-341.
- Jack, V. (2007). *Broad-based BEE: The complete guide*. Northcliff, South Africa: Frontrunner Publishing.
- Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, 35(4), 401-415.
- Kanungo, R. N., & Menon, S. T. (2004). Managerial resourcefulness: The construct and its measurement. *Journal of Entrepreneurship*, 13(2), 129-152.
- Katz, J., & Gartner, W. (1988). Properties of emerging organizations. *Academy of Management Review*, 13(3), 429-441.
- Kautonen, T., Van Gelderen, M., & Tornikoski, E. T. (2013). Predicting entrepreneurial behaviour: A test of the theory of planned behaviour. *Applied Economics*, 45(6), 697-707.
- Krauss, S. I., Frese, M., Friedrich, C., & Unger, J. M. (2005). Entrepreneurial orientation: A psychological model of success among southern African small business owners. *European Journal of Work and Organizational Psychology*, 14(3), 315-344.

- Lewis-Beck, M., Bryman, A. E., & Liao, T. F. (Eds.). (2004). *The Sage encyclopedia of social science research methods* (Vol. 1). Thousand Oaks, California: Sage Publications.
- Liñán, F., & Chen, Y. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 33(3), 593-617.
- Liñán, F., Rodriguez-Cohard, J. C., & Rueda-Cantucho, J. M. (2005). Factors affecting entrepreneurial intention levels. In *45th Congress of the European Regional Science Association, Amsterdam*, 23-27.
- Low, M., & MacMillan, I. (1988). Entrepreneurship: Past research and future challenges. *Journal of Management*, 14(2), 139-161.
- Markman, G. D., Baron, R. A., & Balkin, D. B. (2005). Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. *Journal of Organizational Behavior*, 26(1), 1-19.
- Maritz, A. (2004). New Zealand necessity entrepreneurs. *International Journal of Entrepreneurship and Small Business*, 1(3), 255-264.
- Meth, C. (2013). *Sticking to the facts: Official and unofficial stories about poverty and unemployment in South Africa*. Cape Town: Development Policy Research Unit (DPRU), University of Cape Town.
- Murphy, K. R., & Dzieweczynski, J. L. (2005). Why don't measures of broad dimensions of personality perform better as predictors of job performance? *Human Performance*, 18(4), 343-357.
- Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Olawale, F., & Garwe, D. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5), 729-738.
- Ones, D. S., & Dilchert, S. (2005). Personality at work: Raising awareness and correcting misconceptions. *Human Performance*, 18(4), 389-404.
- Pallant, J. (2013). *SPSS survival manual* (5th ed.). Maidenhead, England: Open University Press.

- Peterson, T. O., & Arnn, R. B. (2004). Self-efficacy: The foundation of human performance. *Performance Improvement Quarterly*, 18(2), 5-18.
- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology*, 16(4), 353-385.
- Reynolds, P. D., Bygrave, W. D., Autio, E., Cox, L., & Hay, M. (2002). *GEM global 2002 executive report*. Global Entrepreneurship Monitor.
- Reynolds, P., & Miller B. (1992). New firm gestation: Conception, birth, and implications for research. *Journal of Business Venturing*, 7, 405-417.
- Robinson, J. P., & Shaver, P. R. (1973). *Measures of social psychological attitudes*. Ann Arbor, MI: Institute for Social Research, University of Michigan.
- Rogerson, C. M. (2001). In search of the African miracle: Debates on successful small enterprise development in Africa. *Habitat International*, 25, 115-142.
- Roodt, J. (2005). Self-employment and the required skills. *Management Dynamics*, 14(1), 18-33.
- SA Yearbook. (2011). Government Communications and Information System. Retrieved from <http://www.gcis.gov.za/content/resourcecentre/sa-info/yearbook2010-11>
- SA Yearbook. (2012). Government Communications and Information System. Retrieved from <http://www.gcis.gov.za/content/resourcecentre/sa-info/yearbook2011-12>
- Schwab, K. (2013). The global competitiveness report 2010-2011. *World Economic Forum*. Retrieved from <http://reports.weforum.org/the-global-competitiveness-report-2013-2014>
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217-227.
- Statistics South Africa. (2013). *Quarterly labour force survey, Quarter 4, 2012*.

- Streiner, D. L. (1994). Figuring out factors: The use and misuse of factor analysis. *The Canadian Journal of Psychiatry, 39*, 135-140.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*. Boston: Allyn and Bacon.
- Thompson, F. T., & Levine, D. U. (1997). Examples of easily explainable suppressor variables in multiple regression research. *Multiple Linear Regression Viewpoints, 24*(1), 11.
- Tukey, J. W. (1977). *Exploratory data analysis*. Reading, MA: Addison-Wesley. In Hoaglin, D. C., Iglewicz, B., & Tukey, J. W. (1986). Performance of some resistant rules for outlier labeling. *Journal of the American Statistical Association, 81*(396), 991-999.
- Unger, J. M., Keith, N., Hilling, C., Gielnik, M. M., & Frese, M. (2009). Deliberate practice among South African small business owners: Relationships with education, cognitive ability, knowledge, and success. *Journal of Occupational and Organizational Psychology, 82*(1), 21-44.
- Viljoen, M. (2012). Constructing homogeneous Likert-type summative rating scales according to classical measurement theory. In *Proceedings of the 11th European Conference on Research Methods*, 408-415. Reading, UK: Academic Publishing International Limited.
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing, 20*(1), 71-91.
- Williams, C. C. (2008). Beyond necessity-driven versus opportunity-driven entrepreneurship. *Entrepreneurship and Innovation, 9*(3), 157-165.
- Xavier, S. R., Kelley, D., Kew, J., Herrington, M., & Vorderwülbecke, A. (2012). *Global Entrepreneurship Monitor 2012 executive report*. Global Entrepreneurship Monitor.
- Zhao, H., & Seibert, S. E. (2006). The big five personality dimensions and entrepreneurial status: A meta-analytical review. *The Journal of Applied Psychology, 91*(2), 259-271.
- Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*(6), 1265-1272.

Appendix A – Questionnaire



ORGANISATIONAL PSYCHOLOGY MASTERS 2013 RESEARCH PROJECT

Hello

I am a Masters student at the University of Cape Town doing research about people who are most likely to be successful in running their own businesses. Please help me with my research and complete the attached questions.

The questionnaire should take about 10 - 15 minutes to complete.

Answering the questions is voluntary and you can stop at any time during the process if you want to, even if you have already started answering the questions.

This research has been approved by the University of Cape Town's Commerce Faculty Ethics in Research Committee. The information collected will be kept confidential and the results will be reported in a summary format only. Nobody at The Clothing Bank will see your individual answers. I will use your ED number to match it to other information that The Clothing Bank will send me such as your age and the how much stock you have bought from The Clothing Bank. I will not receive or use any identifying information such as your name or ID number.

Everyone who finishes the survey will qualify to take part in a lucky draw and 10 prizes such as chocolates will be given out to the winners.

If you have any questions about the research, please feel free to contact me.

Yours sincerely

Signed by candidate

Signature Removed

Carol Mould
UCT Masters student
Email: mldcar001@myuct.ac.za
Cell: 083-3271767

Research supervisors:

Prof. Jeffrey Bagraim
Professor
Organisational Psychology
University of Cape Town

Dr. Ines Meyer
Senior Lecturer
Organisational Psychology
University of Cape Town

Please write your ED Number here: _____

Group Number (e.g. 8a):

How to complete this questionnaire

For each of the sections in this questionnaire, you will be shown some statements and asked to indicate how much you agree with or disagree with each statement. Choose ONLY ONE number for each statement. See the following example:

Example question		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<i>Please show how much you agree with each of the following statements by putting a cross on a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree). Please choose only one number on each line.</i>						
1	I want to start my own business	1	2	3	4 X	5

In the example question, the person agreed with the statement “I want to start my own business” and put the cross over the number 4.

About you

<i>Please show how much you agree with each of the following statements by choosing a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree).</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	When I am not sure I can successfully handle a task, I am likely to avoid it	1	2	3	4	5
2.	While doing a job, if a more interesting job comes up I am likely to switch to the new job	1	2	3	4	5
3.	I am likely to stop doing a job when major difficulties get in the way	1	2	3	4	5
4.	While doing a task, I sometimes lose sight of my goals	1	2	3	4	5
5.	When I am challenged with a new task, I am often afraid that I will not be able to handle it	1	2	3	4	5
6.	I like to make suggestions on how to improve the work process	1	2	3	4	5
7.	I think I have high abilities	1	2	3	4	5
8.	If I want to achieve something, I can overcome setbacks without giving up my goal	1	2	3	4	5
9.	When I want to reach a goal, I am usually able to succeed	1	2	3	4	5
10.	If I become unemployed, I am sure that I will find a new job based on my abilities	1	2	3	4	5
11.	I am always on the lookout for new ways to improve my life	1	2	3	4	5

12.	I am determined to make a difference in my community and maybe the world	1	2	3	4	5
13.	I'm likely to let others take the initiative to start new projects	1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14.	Wherever I have been, I have been a powerful force for constructive change	1	2	3	4	5
15.	I enjoy facing and overcoming obstacles to my ideas	1	2	3	4	5
16.	Nothing is more exciting than seeing my ideas turn into reality	1	2	3	4	5
17.	If I see something I don't like, I fix it	1	2	3	4	5
18.	No matter what the chances, if I believe in something I will make it happen	1	2	3	4	5
19.	I love being a champion for my ideas, even when others oppose my ideas	1	2	3	4	5
20.	I am excellent at identifying opportunities	1	2	3	4	5
21.	I am always looking for better ways to do things	1	2	3	4	5
22.	If I believe in an idea, no obstacle will prevent me from making it happen	1	2	3	4	5
23.	I love to challenge the way things are usually done	1	2	3	4	5
24.	When I have a problem, I tackle it directly	1	2	3	4	5
25.	I am great at turning problems into opportunities	1	2	3	4	5
26.	I can spot a good opportunity long before others can	1	2	3	4	5
27.	If I see someone in trouble, I help out in any way I can	1	2	3	4	5

About you at work

<i>Please show how much you agree with each of the following statements by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree).</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
28.	I do only what I'm told to do. Then nobody can criticise me for anything	1	2	3	4	5
29.	Work is easier if I'm always told how to do it	1	2	3	4	5
30.	You only run into trouble, if you do something on your own	1	2	3	4	5
31.	I would rather be told exactly what I have to do. Then I make fewer mistakes	1	2	3	4	5
32.	I act according to the motto: I follow orders, then nobody is going to criticise me	1	2	3	4	5
33.	I have to think about too many things when I have to make decisions	1	2	3	4	5

34.	I'd rather have routine work	1	2	3	4	5
35.	I prefer to have a supervisor who tells me exactly what to do. Then it is their fault if something goes wrong	1	2	3	4	5
36.	I want to decide more things myself	1	2	3	4	5
37.	Work is more interesting if one has to make many decisions	1	2	3	4	5
About having a business <i>Please show how much you agree with each of the following statements by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree).</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
38.	I am ready to do anything to have my own business	1	2	3	4	5
39.	My goal is to have my own business	1	2	3	4	5
40.	I will make every effort to start and run my own business	1	2	3	4	5
41.	I am determined to create a business in the future	1	2	3	4	5
42.	I have very seriously thought of starting a business	1	2	3	4	5
43.	I have every intention of starting a business one day	1	2	3	4	5

How others feel about your business <i>How much would the following people approve of you starting your own business? (1 = totally disapprove; 5 = totally approve).</i>		Totally disapprove	Disapprove	Neutral	Approve	Totally approve
44.	Your close family	1	2	3	4	5
45.	Your friends	1	2	3	4	5
46.	Your community	1	2	3	4	5

About having a job <i>Please show how much you agree with each of the following statements by ticking a number from 1 to 5 (1 = strongly disagree; 5 = strongly agree).</i>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
47.	I would prefer to have a job than have my own business	1	2	3	4	5
48.	I would rather work for myself than have a boss	1	2	3	4	5
49.	If I won a million rand in the Lotto, I would stop working	1	2	3	4	5

Thank you for completing this questionnaire. The information that you have provided will be kept confidential.

Appendix B – Data Analysis Tables

Table B.1
Factor Loadings for the 15-item Proactive Personality Scale

Item	Factor			
	1	2	3	4
Item 1	.347	.552		
Item 2	.479	.751		
Item 4	.529		-.448	
Item 6	.509		.374	
Item 7	.476		.397	
Item 8	.522			.409
Item 9	.612			.368
Item 10	.553			
Item 11	.609			-.305
Item 12	.602			
Item 13	.610	-.347		
Item 14	.613	-.336	-.307	
Item 15	.563	-.354	.326	-.407
Item 16	.663			
Item 17	.396	.337		
Eigenvalue	4.704	1.949	1.454	1.148
% Variance	31.36	12.99	9.69	7.66

Note. Extraction Method: Principal Axis Factoring; Factor loadings between -.3 and .3 are not displayed

Table B.2
Pattern Matrix for the 15-item Proactive Personality Scale

Item	Factor			
	1	2	3	4
Item 1		.723		
Item 2		.756		
Item 4				
Item 6	.512	.388		
Item 7		.475		
Item 8	.695			
Item 9			.412	
Item 10			.583	
Item 11		.427		.524
Item 12				.557
Item 13				.620
Item 14	.360		.339	.339
Item 15				.740
Item 16			.610	.317
Item 17			.506	

Note. Extraction Method: Principal Axis Factoring; Rotation Method: Oblimin with Kaiser Normalization

Table B.3
Factor Loadings for the 8-item Control Aspiration Scale

Item	Factor	
	1	2
Item 1	.685	-.355
Item 2	.754	
Item 3	.576	
Item 4	.729	
Item 5	.771	
Item 6	.406	
Item 7	.646	.570
Item 8	.692	
Eigenvalue	4.954	
% Total Variance	33.03	

Note. Extraction Method: Principal Axis Factoring;
 Factor loadings between -.3 and .3 are not displayed

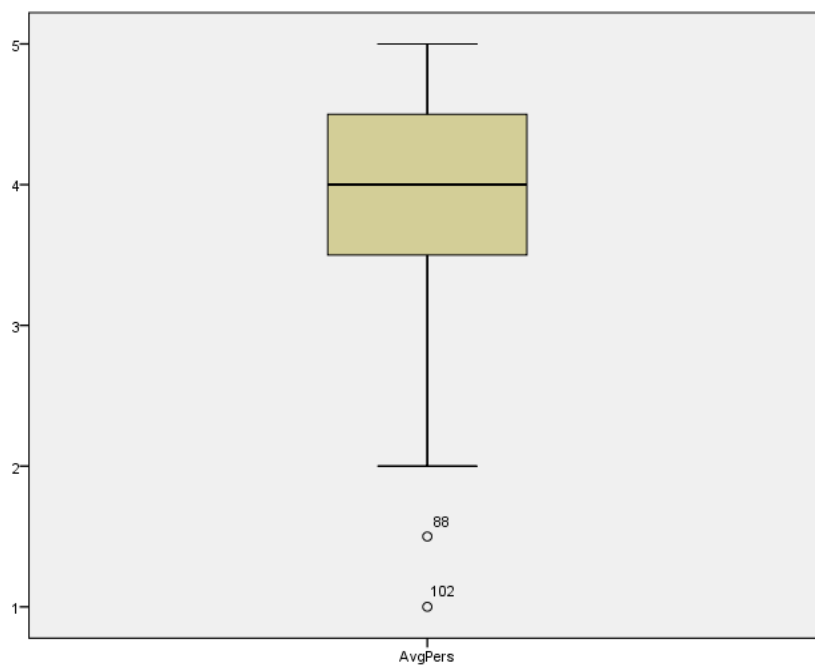


Figure B.1. Box plot for composite perseverance scores showing two outliers

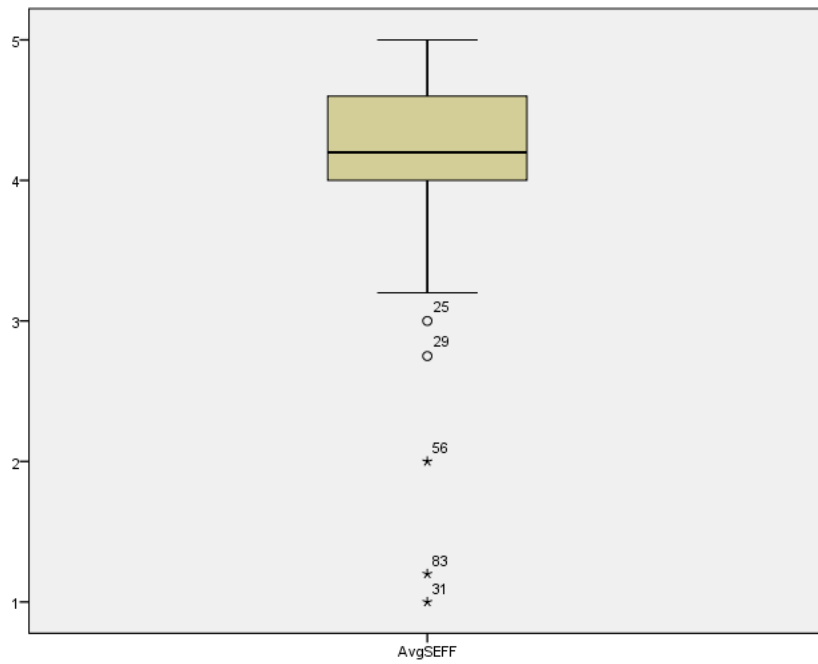


Figure B.2. Box plot for composite self-efficacy scores showing five outliers

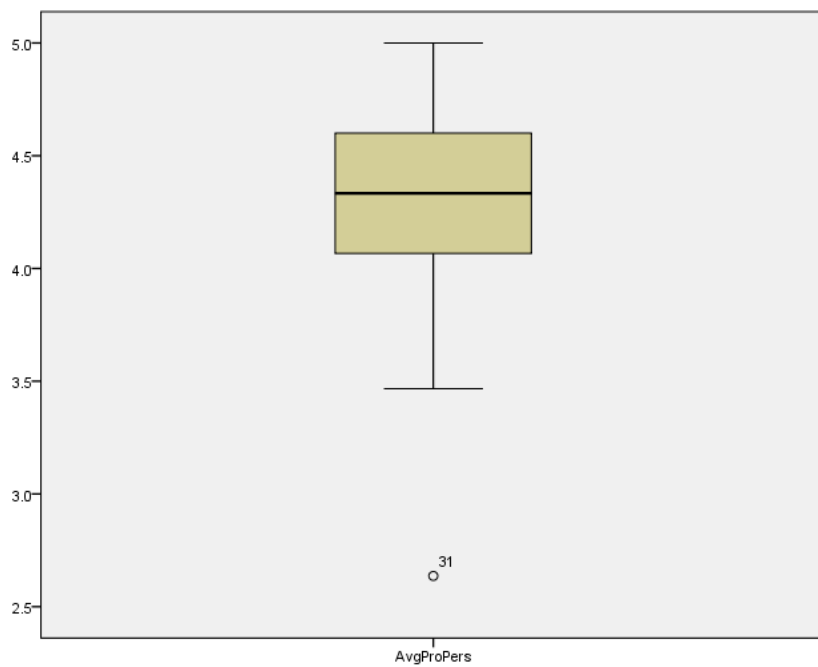


Figure B.3. Box plot for composite proactive personality scores showing one outlier

Table B.4
Collinearity Diagnostics for Standard Multiple Regression with Entrepreneurial Intention (n = 86)

Variable	Collinearity statistics	
	Tolerance	VIF
Proactive Personality	.696	1.436
Control Aspiration	.951	1.052
Self-efficacy	.718	1.393
Perseverance	.820	1.220

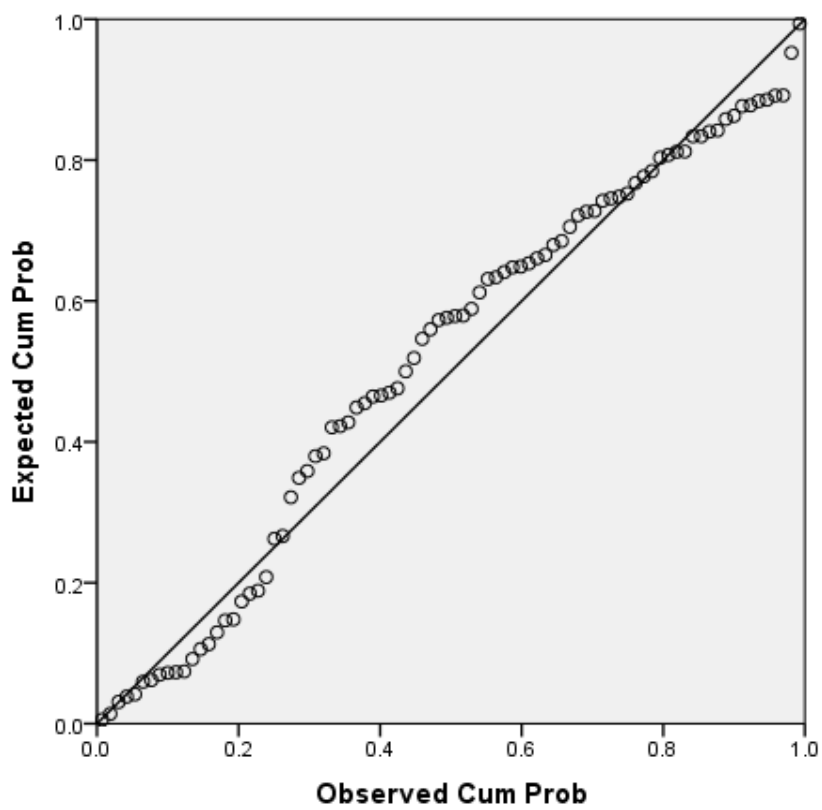


Figure B.4. Normal probability plot of residuals after standard multiple regression for entrepreneurial intention (DV); proactive personality, self-efficacy, perseverance and control aspiration (IVs)

Table B.5
Collinearity diagnostics for Hierarchical Multiple Regression with Entrepreneurial Intention, Controlling for Age and Education (n = 85)

Variable	Collinearity statistics	
	Tolerance	VIF
Step 1		
Age	.998	1.002
Education	.998	1.002
Step 2		
Age	.949	1.054
Education	.946	1.057
Proactive Personality	.673	1.485
Control Aspiration	.893	1.120
Self-efficacy	.713	1.403
Perseverance	.779	1.283

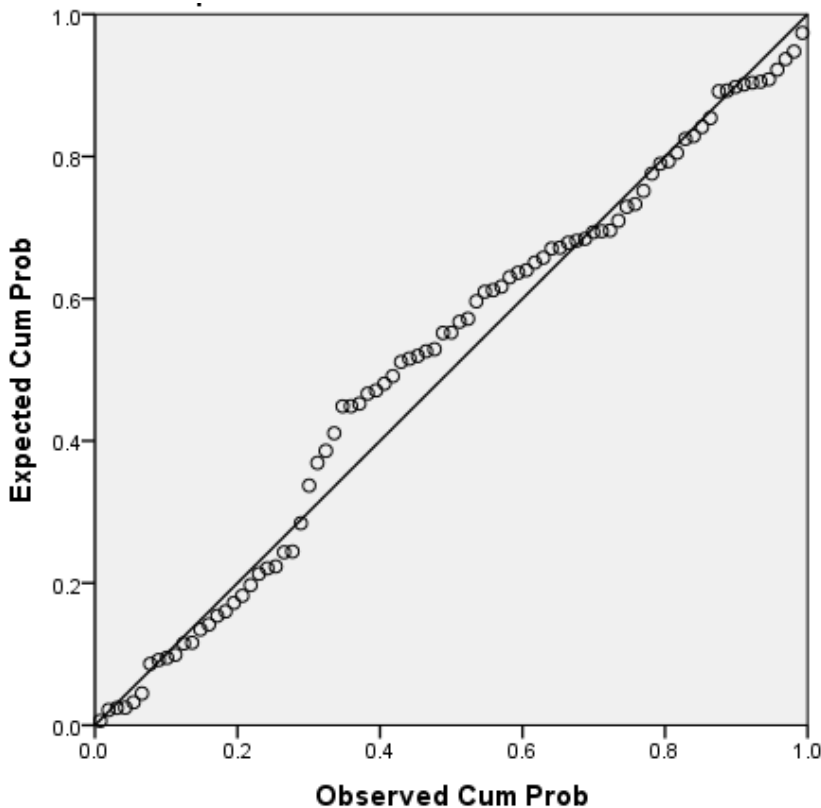


Figure B.5. Normal probability plot of residuals after hierarchical multiple regression for entrepreneurial intention (DV); proactive personality, self-efficacy, perseverance and control aspiration (IVs); controlling for age and education

Table B.6
*Collinearity diagnostics for Standard Multiple Regression
 for Initial Performance (n = 88)*

Variable	Collinearity statistics	
	Tolerance	VIF
Proactive Personality	.722	1.384
Control Aspiration	.972	1.029
Self-efficacy	.720	1.389
Perseverance	.851	1.176

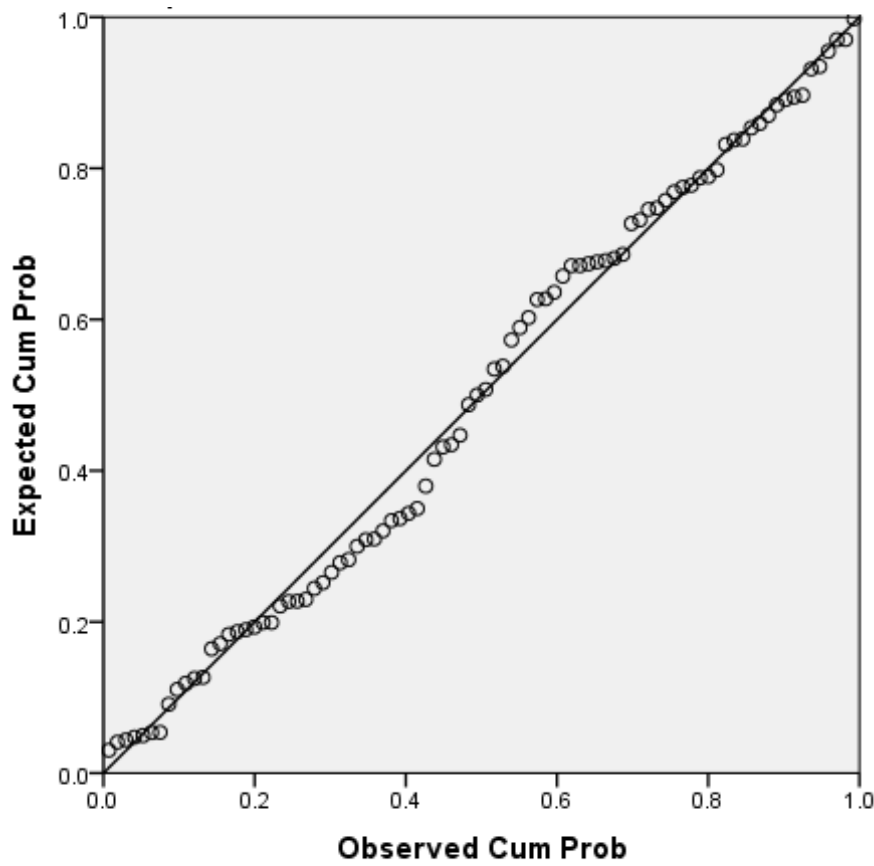


Figure B.6. Normal probability plot of residuals after standard multiple regression for initial performance (DV); proactive personality, self-efficacy, perseverance and control aspiration (IVs)

Table B.7
*Collinearity Diagnostics for Standard Multiple
 Regression with Recent Performance (n = 88)*

Variable	Collinearity statistics	
	Tolerance	VIF
Proactive Personality	.722	1.384
Control Aspiration	.972	1.029
Self-efficacy	.720	1.389
Perseverance	.851	1.176

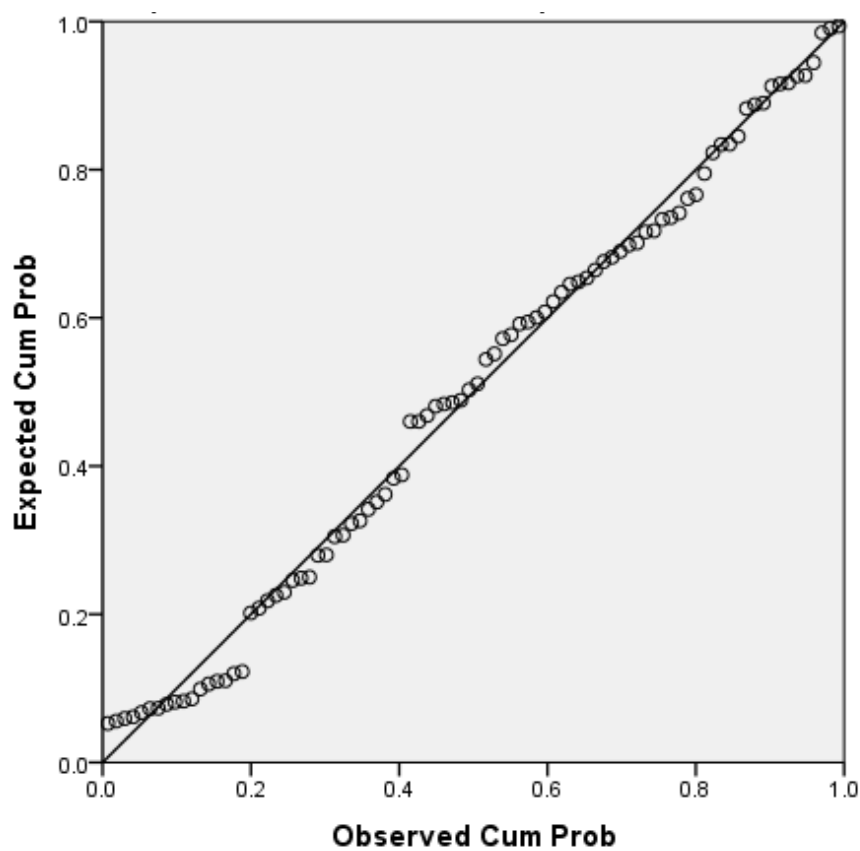


Figure B.7. Normal probability plot of residuals after standard multiple regression for recent performance (DV); proactive personality, self-efficacy, perseverance and control aspiration (IVs)

Table B.8
Collinearity Diagnostics for Hierarchical Multiple Regression with Recent Performance, Controlling for Tenure (n = 88)

Variable	Collinearity statistics	
	Tolerance	VIF
Step 1		
Tenure	1.000	1.000
Step 2		
Tenure	.874	1.144
Proactive Personality	.722	1.385
Control Aspiration	.936	1.068
Self-efficacy	.710	1.409
Perseverance	.795	1.259

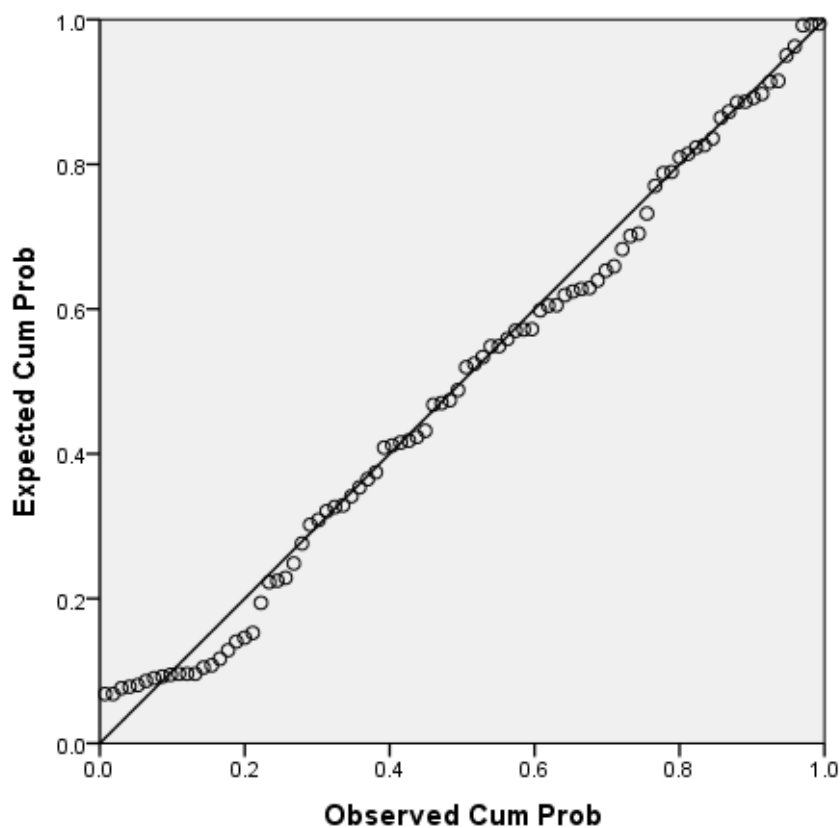


Figure B.8. Normal probability plot of residuals after hierarchical multiple regression for recent performance (DV); proactive personality, self-efficacy, perseverance and control aspiration (IVs), controlling for tenure