

DETERMINING THE RELATIONSHIP BETWEEN ENTREPRENEURIAL SELF-EFFICACY, PERSONALITY AND GENDER DIFFERENCES

Dr Menisha Moos

Department of Business Management
University of Pretoria,
Private Bag X20, Hatfield, 0028,
South Africa
Tel: 012 420 4667
E-mail: menisha.moos@up.ac.za

Ms Madeleine Visser

Department of Business Management
University of Pretoria,
Private Bag X20, Hatfield, 0028,
South Africa

ABSTRACT

Previous studies have shown that gender can have a powerful influence on the development of entrepreneurial self-efficacy (Drnovšek, Wincent and Cardon, 2010:332). However, gender differences with regard to both entrepreneurial self-efficacy and personality have not been adequately addressed. The purpose of this study was to explore the relationship between entrepreneurial self-efficacy, personality and gender differences. The sample consisted of 212 respondents and self-completion questionnaires were used to collect data. A correlation between self-efficacy and *extraversion*, *conscientiousness*, *neuroticism*, and *openness to experience* was found respectively, but no significant correlations exist between *agreeableness* and self-efficacy. There were also no statistically significant differences between self-efficacy and gender. The findings confirmed that personality is indeed a precursor to self-efficacy. This study fills the gap for much needed research in the South-African context. Managers could utilise this research to assess their own personality dimensions and improve those dimensions that could benefit their performance.

INTRODUCTION

Personality and its role in entrepreneurship has increasingly become a subject of interest worldwide (Zhao, Seibert and Lumpkin, 2010:382). Additionally, self-efficacy is becoming a well-known link between entrepreneurship and entrepreneurial intention (Drnovšek, Wincent and Cardon, 2010:330). This is, according to Zhao *et al.* (2010:382), because entrepreneurs' success is reliant on their entrepreneurial intention and whether they believe in their abilities to perform as an entrepreneur. Entrepreneurial self-efficacy refers to individuals' belief in their ability to successfully launch a new business venture (McGee, Peterson, Mueller and Sequeira, 2009:965). Sufficient research has been done with regards to the relationship between self-efficacy and the intention to pursue entrepreneurship as a career choice (Campo, 2011:15; Drnovšek *et al.*, 2010:329; McGee *et al.*, 2009:965; Tyszka, Cieřlik, Domurat and Macko, 2011:124). Additionally, Dempsey and Jennings (2014:30) note that there are clear gender differences that exist when it comes to entrepreneurial self-efficacy. However, the authors also indicate that there is still a lack of research on defining those differences.

Wilson, Kickul and Marlino (2007:388) assert that there appears to be a possibility that a lower level of self-efficacy is preventing female entrepreneurs from achieving success in a predominantly male dominated arena. The authors indicate that this may be because of the inherent doubts that female entrepreneurs demonstrate in themselves and their abilities. It is, therefore, important to determine the gender differences concerning entrepreneurial self-efficacy to reveal whether a lower level of self-efficacy is as a result of gender, or perhaps due to other possible factors such as lack of access to funds (Derera, Chitakunye and

O'Neill, 2014:95), lack of education (Krecar and Coric, 2013:74-78) or other environmental factors (McGee *et al.*, 2009:965).

Tyszka *et al.* (2011:124-131) found that the personality of entrepreneurs necessitates a degree of risk-taking which can influence the belief they have in their abilities. These authors point out that risk-taking can be categorised as a characteristic of an entrepreneur. Given all the aforementioned information, one can deduce that there seems to be a possible relationship between the personality factors of an entrepreneur and entrepreneurial self-efficacy as well as between the gender of the entrepreneur and the self-efficacy the individual possesses. Due to the increasing involvement of female entrepreneurs in the business environment, this study would benefit entrepreneurial literature by not only contributing to the investigation of the relationships between entrepreneurial self-efficacy, personality and gender differences, but also because the research will be undertaken in an emerging country (Langowitz, Minniti and Arenius, 2005:1-30). South Africa is classified as an emerging country given that the country is quasi-industrialised running on an acceptable infrastructure (Bhaumik and Gelb, 2005:11). There is a lack of sufficient research done in developing countries where the economic environment can be considered as dynamic and growing (Urban, 2010:7). Bosma and Levie (in Urban, 2010:7) further indicate that male and female ratios of participation in entrepreneurial activity vary across countries according to national studies. Female entrepreneurs in emerging countries, such as South Africa, usually lack the skills and education that their male counterparts have. However, this constraint is decreasing as women are increasingly becoming more educated (Urban, 2010:4).

The purpose of this study was to explore the difference between males and females regarding their entrepreneurial self-efficacy. By defining these differences, one can determine whether the gender-specific factors, allowing men to have significantly higher levels of entrepreneurial self-efficacy, is transferrable to their female counterparts, given that the same personality characteristics are present. In that sense, this study also contributes to determining whether specific personality factors of the individual has a significant impact on the level of entrepreneurial self-efficacy an individual possesses.

Consequently, this study aims to investigate gender differences in relation to the degree of entrepreneurial self-efficacy an entrepreneur exhibits. Additionally, the applicable personality traits that an entrepreneur has to possess to develop high levels of entrepreneurial self-efficacy are investigated. Furthermore, Brandstätter (2011:223) posits that personality can be divided into five sub-dimensions namely; *neuroticism*, *agreeableness*, *extraversion*, *conscientiousness*, and *openness to new experiences*. Given the aforementioned, the research objectives are as follows:

- To determine the relationship between *neuroticism* and entrepreneurial self-efficacy,
- To determine the relationship between *agreeableness* and entrepreneurial self-efficacy,
- To determine the relationship between *extraversion* and entrepreneurial self-efficacy,
- To determine the relationship between *conscientiousness* and entrepreneurial self-efficacy,
- To determine the relationship between *openness to experience* and entrepreneurial self-efficacy, and
- To determine whether gender differences exist concerning the level of entrepreneurial self-efficacy entrepreneurs exhibit.

The study begins with a literature review regarding the relevant constructs to be measured. Next, a section on the research methodology that was used in testing the hypotheses will follow. Thereafter, the results of this study and a proper discussion of the findings is presented. Finally, the paper concludes with implications relevant to the study and possible directions for future research.

LITERATURE REVIEW

In the next section the key terms are defined namely entrepreneurship, entrepreneur, entrepreneurial self-efficacy, personality and gender. From the arguments in the literature review, six hypotheses were formulated to be tested statistically.

Entrepreneurship and the entrepreneur

Entrepreneurship can be defined “as the discovery, evaluation and exploitation of future goods and services... [by the] ... creation or identification of new ends and means previously undetected or unutilised by market participants” (Brandstätter, 2011:223; Eckhardt and Shane, 2003:336). Additionally, entrepreneurship is defined as the act of privately owning a business and being responsible for its decision-making or a significant degree thereof (Brandstätter, 1997:160; Radipere, 2013:13-14). Thus, an entrepreneur can be depicted as someone who has ownership of a business as well as an individual who take the responsibility for making final decisions regarding the business and its practices (Brandstätter, 1997:160-161) in a novel, creative fashion (Brandstätter, 2011:223).

Additionally, Nieman and Niewenhuizen (2014:24-25) note that an entrepreneur can be identified based on the nature of activities they are involved with in the process of entrepreneurship. There are four different stages within the entrepreneurial process whereby one could identify an entrepreneur. These stages are “potential (pre-nascent), intentional (nascent), start-up (early stage), or established entrepreneurs”.

Furthermore, Liñán, Santos and Fernández (2011:374) report that the potential entrepreneur can be defined by their engagement with evaluating different opportunities before making any decisions regarding the exploitation of goals. In the intentional stage, individuals tend to pursue possible business opportunities within a period of about three years. Consequently, the intentional (nascent) entrepreneur becomes a start-up (early-stage) entrepreneur from the moment where the entrepreneur’s business venture commences with operations. The established entrepreneur can be identified by the fact that the entrepreneur’s business has successfully operated for three and a half or more years. The confidence demonstrated by entrepreneurs is mostly reliant on the self-efficacy they exhibit, which influences entrepreneurs’ belief in their abilities (McGee *et al.*, 2009:969).

Entrepreneurial self-efficacy

Self-efficacy (SE) is widely investigated by many different supporters of the social cognitive theory and is significantly related to the five-factor model of personality (Strobel, Tumasjan and Sporle, 2011:41). Self-efficacy was defined by previous literature studies as the belief individuals have in their ability to influence external factors or situations in their lives in order to achieve a desired outcome (Bandura, 1977:191-215; Saleem, Beaudry and Croteau, 2011:1922-1936). Bandura (1977:193) indicates that to achieve a high degree of self-efficacy individuals have to set performance standards for themselves against which they can evaluate the success of their outcomes. The author continues by stating that reoccurring negative outcome measurements will affect the individual’s level of self-efficacy negatively. This may be because individuals tend to ascribe their success to external factors rather than to their own capabilities due to their expectation that outcomes are determined either by their actions or by forces that are beyond their control.

McGee *et al.* (2009:966) define entrepreneurial self-efficacy as the belief individuals have in their own ability to establish a new venture successfully. Moreover, Hmieleski and Corbett (2008:438) note that entrepreneurial self-efficacy will possibly decrease the psychological strain correlated with the improvising behaviour mentioned earlier. Thus, entrepreneurial self-efficacy is essential to entrepreneurs because it determines their intention to become an entrepreneur, their ability to put that intention into action, and possibly into organisational and personal success (Drnovšek *et al.*, 2010:330).

There is a lack of agreement in past literature as to how entrepreneurial self-efficacy should be conceptualised and measured, mainly because of its multidimensionality (Drnovšek *et al.*, 2010:331). However, findings across 25 countries (adapted to 28 different languages), which consisted of both developing and developed countries, demonstrated that a general self-efficacy measurement is able to successfully determine the level of self-efficacy an individual possesses across different domains (Scholz, Doña, Sud and Schwarzer, 2002:243). Therefore, a general self-efficacy measurement is fitting to the South-African context to accommodate its multicultural nature, which may have an influence on the country’s entrepreneurial development (Urban, 2010:1).

Self-efficacy is also very closely linked to personal experience in that factors important to individuals and instances of personal experience that influence them are largely dependent on the personality of the

individuals. The extent to which external factors and experiences influence individuals develop over a long period of time and shapes their personalities (Bandura, 1977:192). Thus, it has been proven that individuals' personalities are closely related to their entrepreneurial self-efficacy (Strobel *et al.*, 2011:43). However, the focus of this study will not be to determine the impact of external factors on entrepreneurial self-efficacy, but to determine whether gender differences influence entrepreneurs' level of entrepreneurial self-efficacy.

Personality

Pervin and John (in Saleem *et al.*, 2011:1923) define personality as "those characteristics of the person that account for consistent patterns of behaviour". Those behaviours develop over the individual's life cycle and are defined as relatively stable traits that are fundamental units of one's personality (Borghans, Duckworth, Heckman and Ter Weel, 2008:976). There is a vast amount of empirical data that signify personality as an essential determinant of occupational choices and personality characteristics are central in describing self-employment and entrepreneurship (Zhao and Seibert, 2006:259-271). The five-factor model of personality is considered the appropriate model for investigating the personality of an entrepreneur, as it combines almost 50 years of research on the individual's psychological structure (Zhao and Seibert, 2006:260).

Brandstätter (2011:223) indicates that there is a strong relationship between the five-factor model of personality and entrepreneurial behaviour. The author continues by noting that initiating a life comprised of independence and determination relates to *emotional stability*, and the identification of opportunities for developing enterprises relates to being *open to experiences*. Additionally, persistence and hard work towards achieving goals are related to *conscientiousness*; networking and the building of networks are related to *extraversion*; and risk propensity is possibly related to all five dimensions. These are all relevant for achieving success as an entrepreneur.

According to Wilson *et al.* (2007:388), entrepreneurial self-efficacy plays a key role in entrepreneurial intentions and performance. If individuals lack belief in their own ability to start a new venture, they will limit themselves to become entrepreneurs. For entrepreneurs to have the intrinsic belief in themselves to possess the ability to start a business venture and be successful, a specific personality structure needs to be adopted (Brandstätter, 2011:224). To test the personality of an entrepreneur, John and Srivastava (1999:132) developed a 44-item test known as the big five trait taxonomy to empirically assess an entrepreneur's personality structure. This big five framework is substantially supported to be used as a model for researching personality (Gosling, Rentfrow and Swann, 2003:506). This test enables researchers to test the five-factors of any individuals' personality effectively and quickly.

There may, however, still be debate about the exact terms for the five-factors, but for the purpose of this study, the focus will be on the most common terms. The factors important to the personality structure of an entrepreneur to be tested in this study consist of *neuroticism* (the opposite of emotional stability), *agreeableness*, *extraversion*, *conscientiousness*, and *openness to experience* (Brandstätter, 2011:223; John and Srivastava 1999:105).

Neuroticism

Zhao and Seibert (2006:260) define *neuroticism* as the differences between individuals on the facet of emotional stability and adjustment. High levels of *neuroticism* indicate that individuals will experience many negative emotions such as anxiety, self-consciousness, hostility, vulnerability, impulsiveness and depression. Furthermore, *neuroticism* defines individuals' experience of the world as a threatening place which may be out of their control (Borghans *et al.*, 2008:983). These individuals with high levels of *neuroticism* are known as anxious individuals who are easily upset. Conversely, individuals with low scores on *neuroticism* will usually be self-confident, relaxed, calm, emotionally stable, and can deal with immense pressures (Gosling *et al.*, 2003:519). Entrepreneurs have to deal with immense pressures and uncertainty, and they persevere when others may concede. Hmieleski and Baron (2008:57) indicate that persistence and perseverance are known traits of entrepreneurs high in self-efficacy and that these individuals are able to stay calm in difficult stressful situations. Entrepreneurs therefore exhibit low levels of *neuroticism* indicating that they can be

classified as emotionally stable individuals (Judge, Jackson, Shaw, Scott and Rich, 2007:112-113). Thus, the hypothesis for this relationship is as follows:

H¹: There is a negative relationship between *neuroticism* and entrepreneurial self-efficacy.

Agreeableness

Behaviours and attitudes demonstrated towards other individuals can be regarded as an individual's *agreeableness*. Consequently, high levels of *agreeableness* are usually present when individuals demonstrate trust, cooperation, altruism and modesty towards others (Zhao *et al.*, 2010:387). Agreeable individuals demonstrate concern and sympathy with others and tend to submit to the other party when faced with conflict, and are thus known as sympathetic and warm individuals (Gosling *et al.*, 2003:519). Individuals low on *agreeableness*, demonstrate characteristics such as manipulation, ruthlessness, self-centeredness and distrust (Zhao *et al.*, 2010:387). These individuals are typically known as critical, quarrelsome individuals (Gosling *et al.*, 2003:519). According to Zhao *et al.* (2010:388), entrepreneurs typically have to fight to survive, sometimes to the detriment of others demonstrating ruthlessness and manipulation to have things go their way. As such, in some cases entrepreneurs demonstrate very high levels of self-confidence indicating that they are self-centred individuals high in self-belief (Hmieleski and Baron, 2008:58). Therefore, due to the low levels of *agreeableness* entrepreneurs demonstrate, an inverse relationship exists between *agreeableness* and entrepreneurial self-efficacy (Judge *et al.*, 2007:112-113). This relationship can be hypothesised as follows:

H²: There is a negative relationship between *agreeableness* and entrepreneurial self-efficacy.

Extraversion

The degree to which an individual demonstrates assertiveness, energy, and dominance, as well as being active, enthusiastic and talkative demonstrates an individual's level of *extraversion*. Consequently, individuals with a high score on *extraversion* tend to be cheerful and energetic, and seek stimulation and excitement (Zhao and Seibert, 2006:260). Thus, individuals who score high on *extraversion* are known as extraverted and enthusiastic individuals (Gosling *et al.*, 2003:519). Individuals with a low score on *extraversion* tend to keep to themselves, be independent, reserved and withdrawn (Gosling *et al.*, 2003:519; Saleem *et al.*, 2011:1924; Zhao and Seibert, 2006:260). Entrepreneurs are typically individuals driven towards improving the growth and profitability of their organisations, and believing in their ability to do so (Brandstätter, 2011:226). The success of entrepreneurial ventures is mostly reliant on establishing social networks to improve growth and performance (Brandstätter, 2011:223). Consequently, an entrepreneur's level of *extraversion* proved to be positively related to the firm's performance. Empirical findings indicated that entrepreneurs tend to score high on *extraversion* (Zhao *et al.*, 2010:387). Thus, *extraversion* has shown to have a direct, positive relationship with entrepreneurial self-efficacy (Judge *et al.*, 2007:112-113). This leads to the following hypothesis:

H³: There is a positive relationship between *extraversion* and entrepreneurial self-efficacy.

Conscientiousness

The amount of hard work, persistence, organisation, and motivation an individual demonstrates in relation to achieving a set goal or performance measure can be categorised as *conscientiousness* (Zhao and Seibert, 2006:262). Therefore, conscientious individuals can be categorised as dependable and self-disciplined individuals. Furthermore, individuals that score low on *conscientiousness* are classified as disorganised and careless due to their irresponsibility and lack of motivation (Gosling *et al.*, 2003:519; Saleem *et al.*, 2011:1924). Hmieleski and Baron (2008:60-62) contend that entrepreneurs who demonstrate confidence in their abilities to perform tasks and work hard to do so, usually lead the organisations they work for to success. Thus, *conscientiousness* is directly related to an organisation's performance and a high need for achievement in that hard work and motivation will lead the organisation to achieve goals and success (Zhao *et al.*, 2010:385). Therefore, one can conclude that entrepreneurs require a high level of *conscientiousness*

because the organisation's success is dependent on their performance and achievement (Zhao *et al.*, 2010:385). Accordingly, Judge *et al.* (2007:112-113) note that there is a small, but positive relationship between *conscientiousness* and self-efficacy. It is, therefore, posited that:

H⁴: There is a positive relationship between *conscientiousness* and entrepreneurial self-efficacy.

Openness to experience

Being open to new experiences requires a curious mind that is open to exploring innovative ideas and not being afraid of the unknown (Zhao and Seibert, 2006:259). Complex individuals open to new experiences demonstrate a high degree of creativity, innovation, imagination and reflection and do things in an unconventional manner (Gosling *et al.*, 2003:519; Zhao and Seibert, 2006:259). Furthermore, individuals open to experiences are prone to find opportunities and other ways to develop and structure their organisations to achieve optimal performance (Brandstätter, 2011:223). Conventional individuals with narrow interests who conform to the norm usually prove to be uncreative and low on *openness to experience* (Gosling *et al.*, 2003:519; Zhao and Seibert, 2006:259). Zhao *et al.* (2010:385) suggest that *openness to experience* is the very definition of entrepreneurs, because they demonstrate proclivity and creativity in pursuing their ideas regardless of their situation or circumstances. Additionally, these authors propose that entrepreneurs tend to experiment. Entrepreneurs enjoy deviating from the norm and thinking of things in a divergent manner. Divergence and experimentation tend to encompass a degree of risk taking, and it has been found that entrepreneurs are prone to taking risks (Brandstätter, 2011:226). Taking these risks requires entrepreneurs to believe in themselves and their abilities (Strobel *et al.*, 2011:43). Therefore, one can conclude that a small, yet significant positive relationship exists between entrepreneurial self-efficacy and individuals' openness to new experiences (Judge *et al.*, 2007:112-113). Given the aforementioned it can be hypothesised that:

H⁵: There is a positive relationship between *openness to experience* and entrepreneurial self-efficacy.

Gender

Previous empirical studies have demonstrated that entrepreneurial self-efficacy is directly related to entrepreneurial intention and performance (Dempsey and Jennings, 2014:29). It is, therefore, important to measure the abovementioned relationships accurately to effectively determine whether a specific type of personality fits an entrepreneur and the level of self-efficacy that an entrepreneur holds. Interestingly Urban (2010:2) asserted that gender could possibly lead to differences in the relationship between personality traits and entrepreneurial self-efficacy.

Self-efficacy is related to self-confidence in that both include individuals' beliefs in their ability to perform a task and succeed (McGee *et al.*, 2009:969). Wilson *et al.* (2007:388) indicate that women tend to lack self-confidence when it comes to employing their abilities. Confidence in one's abilities relates to creativity and innovation, and being prone to divergent thinking which may be required to excel as an entrepreneur (Zhao and Seibert, 2006:261). It should be noted that women are increasingly securing opportunities to enter into and become successful in entrepreneurial career paths due to the collapse of possible barriers they instil (De Bruin, Brush and Welter, 2007:323-339). Obtaining credit, cultivating business networks and dealing with government and other officials are some examples of barriers women are faced with (Bardasi, Sebarwal and Terrell, 2011:417). However, it is possible that women's lack of confidence lead to lower levels of entrepreneurial self-efficacy, which may possibly prevent them from fully embracing these opportunities as they arise (Kirkwood, 2009:118-133).

Mueller and Dato-on (2013:5) reported that differences in how males and females are socialised, as to what their roles are in society, such as who is the caregiver and who is the protector, leads to dissimilarities in how men and women perceive their own capabilities. Particularly when it comes to executing certain tasks, following their ambitions throughout their careers, and their perceptions of the opportunities they have at their disposal (Dempsey and Jennings, 2014:30). Furthermore, the discrepancy between the number of male and female entrepreneurs can firstly be attributed to the manner in which men and women perceive

entrepreneurship as a viable career choice, as well as the perceptions they hold regarding their ability to succeed (Kirkwood, 2009:120-121). These preconceived perceptions that women hold regarding the barriers they will face and their ability to make a success of their entrepreneurial endeavours negatively affects their entrepreneurial self-efficacy (Dempsey and Jennings, 2014:30-31). Other research studies that have investigated entrepreneurial self-efficacy and personality with regard to entrepreneurial intentions further attempt to explain why some individuals are more prone than others to become entrepreneurs (Brandstätter, 2011:222-230; Campo, 2011:14-21; Judge *et al.*, 2007:1939-1854). Additionally, gender has shown to have a powerful influence on the development of entrepreneurial self-efficacy (Drnovšek *et al.*, 2010:332). However, the differences that exist among men and women with regards to entrepreneurial self-efficacy and personality are still an unsettled question (Saleem *et al.*, 2011:1924). Therefore, based on the aforementioned discussion with regard to gender and entrepreneurial self-efficacy, it is hypothesised that:

H⁶: Men and women differ in their entrepreneurial self-efficacy.

METHODOLOGY

In the following section the target population, units of analysis and sampling methods are discussed. The data collection and the study's measures are also dealt with.

Target population and units of analysis

The target population for this study consisted of current male and female entrepreneurs across all industries working within the Gauteng region in 2015. Since the purpose of this study was to compare the responses of male and female entrepreneurs on their levels of entrepreneurial self-efficacy, the unit of analysis are the two gender groups.

Sampling method

Due to the lack of an accurate sampling frame from which one would be able to select a probability sample, this study used a non-probability sampling method. It provides the researcher with some freedom to choose respondents for the sample. However, this method may have created greater opportunity for bias when the sample was selected (Bryman and Bell, 2015:187-188). Additionally, non-probability sampling methods face the limitation of not being able to generalise the findings to the larger population (Kotzé, 2015:46).

This study used the quota sampling method which usually contains certain characteristics that define the dimensions of the population from which the sample will be selected. If the sample contains the same distribution of characteristics as the population then it is likely to be representative of all the other uncontrolled variables to be measured (Larsen, 2007:3-4). The target sample size of this study was a minimum of 200 responses. A self-administered questionnaire was sent out to 287 potential respondents that fit the sampling criteria and take into account the non-response error associated to online surveys and central location intercept surveys. The final realised sample for this study consisted of 226 completed questionnaires, representing a 79% response rate. However, only 212 of these questionnaires were usable for the analysis of this study.

Data collection

The questionnaire was pre-tested by ten entrepreneurs in Gauteng using the collaborative participant pre-testing method proposed by Cooper and Schindler Online Appendix 13b (2014:1). The data used in the main study were collected between August and September 2015 through self-administered questionnaires. An e-mail was sent to each potential respondent, after confirming their willingness to participate telephonically, which contained the link to the online survey. To avoid the potential bias of non-response error, a follow-up e-mail was sent a week after the initial e-mail - resending the link to the online questionnaire. Additional to the online questionnaires, the researchers and a trained field worker collected central location intercept questionnaires directly from small-business owners in the Gauteng neighbourhoods. No incentives were

provided to encourage respondents to participate. Two different survey methods had to be used due to a limit of two months within which data had to be collected as well as the fact that entrepreneurs are busy individuals and usually hard to reach.

Measures

In this section the measures used to test entrepreneurial self-efficacy, the big five sub-dimensions of a respondent's personality and the demographic variables are discussed.

Entrepreneurial Self-Efficacy

This study measured general self-efficacy according to the scale by Scholz *et al.* (2002:251) which was tested across 25 countries to prove its usefulness in any domain. Empirical testing provided evidence that general self-efficacy is connected to a variety of psychological constructs over multiple domains of human functionality and that the strength of the instrument is embedded in its generality (Luszczynska, Scholz and Schwarzer, 2005:455). McGee *et al.* (2009:969) note that researchers believe the general self-efficacy measure is an appropriate measure for testing the self-efficacy level of entrepreneurs due to the need for a diverse skill set and role orientations required by entrepreneurial careers.

The initial general self-efficacy questionnaire designed by Schwarzer and Jerusalem (1995:35-37) consisting of 20 items was adapted and compressed into a ten item questionnaire. It proved to be equally effective over two decades encompassing a broad range of applications (Schwarzer and Jerusalem, 2009:329-345). The scoring of the ten items was done using a five-point Likert scale adapted from the initial four-point rating scale. The scale ranges from one ("Not at all true") to five ("Exactly true"). Scale points include a statement for which the participants have to indicate the extent to which they view this statement as true with regard to themselves. The score in the questionnaire will range within one to five for each item, consequently by using an averaging approach the composite score will fall within 10-50. The averaging approach was used to determine the degree of entrepreneurial self-efficacy that each participant exhibits. Empirical findings indicate that general self-efficacy is a unidimensional scale (Scholz *et al.*, 2002:247-248). There are no reverse scored items in this scale and the Cronbach Alpha value for the self-efficacy instrument scored 0.81 (see Table 3 in Annexure) in this study. The acceptable value of the Cronbach Alpha ranges from 0.70 to 0.95, although a maximum Cronbach Alpha value of 0.90 is recommended (Tavakol and Dennick, 2011:54).

Personality traits

John and Srivastava (1999:132) developed a 44-item measurement scale that was used in this study for testing the big five personality sub-dimensions of a respondent's personality, namely *neuroticism*, *agreeableness*, *conscientiousness*, *extraversion* and *openness to experience*. These dimensions were tested through a five-point Likert scale, asking the individual to rate the extent to which each statement applies to how they see themselves. The scale presented by John and Srivastava (1999:132) included a range from one ("Strongly disagree") to five ("Strongly agree"). Each response option contained a statement to which participants must agree or disagree with the extent to which it represents how they see themselves. The averaging approach was used to estimate the composite scores, therefore, the scale scores in the questionnaire ranged within 44-220. The Cronbach's alpha values, reverse scored items for each sub-dimension of personality and removed items due to internal reliability inconsistencies can be seen in Table 3 (see Annexure). The Cronbach's alpha values for each of the five sub-dimensions are 0.81 for *agreeableness*, 0.72 for *extraversion*, 0.76 for *conscientiousness*, 0.74 for *neuroticism* and 0.64 for *openness to experience*.

Demographic variables

Lastly, the questionnaire contains multiple demographic questions that aim to determine the participant's gender, age, education level, and the industry in which the entrepreneur operates. These demographic questions were all tested on multiple-choice, single-response scales designed by the researcher in the final questionnaire.

RESULTS

Firstly, the descriptive statistics for general self-efficacy and personality are presented followed by the univariate descriptive statistics on the demographic variables. The research objectives are revisited and the results of the six hypotheses tests reported.

Descriptive statistics

General Self-efficacy

The mean (M) self-efficacy ratings of the respondents are presented in Table 5 (see Annexure). The composite mean score for the self-efficacy dimension resulted in 4.45 (standard deviation (SD) = 0.38). The item in the self-efficacy scale that had the lowest mean score is the ability of the individuals to find ways and means to get what they want if someone opposed them ($M = 4.18$, $SD = 0.79$). The items with the highest mean scores are the individuals' certainty that they can achieve their goals ($M = 4.65$, $SD = 0.53$), and the individuals' ability to solve most of their problems if they invest the necessary effort ($M = 4.65$, $SD = 0.48$). The results show that the level of self-efficacy of entrepreneurs in this study is quite high with a mean score of 4.45 out of a five-point rating scale. However, the generalisability of these conclusions across South African entrepreneurs needs verification.

Personality

Table 6 (see Annexure) presents the descriptive statistics for the five sub-dimensions of personality and Table 3 (see Annexure) presents the internal reliability coefficients. The reliability coefficient of the *agreeableness* sub-dimension resulted in a score of 0.81 and the mean score for *agreeableness* resulted in 3.70 ($SD = 0.72$). For *extraversion*, the reliability coefficient score resulted in 0.72 and the overall mean score was 3.53 with a standard deviation of 0.63. Furthermore, the reliability coefficient for *conscientiousness* tested 0.76 and the mean score was 3.98 ($SD = 0.56$). The reliability coefficient for *neuroticism* resulted in 0.74 with an overall mean score of 2.31 ($SD = 0.59$). Lastly, the reliability coefficient for *openness to experience* is 0.64 and the composite mean score resulted in 3.90 with a standard deviation of 0.53. The results of the reliability scores indicate that the *agreeableness* sub-dimension has the highest internal reliability and the *openness to experience* sub-dimension has the lowest internal reliability. Ideally the internal reliability score should fall above $\alpha = 0.7$, however, Cronbach's alpha values tend to be sensitive to the number of scale items. Thus, with short scales (less than ten items per sub-dimension) one will come across lower values that are acceptable (Pallant, 2011:97).

Univariate descriptive statistics on demographic variables

All tables and figures displaying the univariate descriptive statistics on demographic variables are presented in the Annexure. Table 7 presents the variability in age of the respondents. The results indicate that the oldest respondent was 73 years and the youngest respondent 18 years of age. The average age is 36.2 years ($SD=13.6$ years). Table 8 shows that the gender split resulted in a forty eight per cent female and fifty two per cent male gender split with 102 male respondents and 110 female respondents. This study, therefore, satisfies the need for an approximately equal gender split in order to test gender differences. The respondents were well distributed over the different industry sectors as evident from Table 8 and Figure 1. As displayed in table 8, the education levels of the respondents also varied considerably, however, most of the respondents at least obtained some form of tertiary education (75.94%). Table 4 illustrates the spread in terms of how long the respondents have run their own businesses.

Hypothesis tests

The next section displays the results for the six hypotheses which were formulated from the literature review and tested statistically. Hypotheses one to five focused on self-efficacy and the sub-dimensions of personality; and hypotheses six tested gender and self-efficacy.

Self-efficacy and the sub-dimensions of personality

The first five hypotheses (H^1 , H^2 , H^3 , H^4 and H^5) dealt with the correlation between the individuals' level of self-efficacy and each of the five sub-dimensions of their personality. These five hypotheses are all directional (one-tailed) hypotheses and are tested at a five per cent level of significance (i.e. $\alpha = 0.05$). The respondents' score on self-efficacy and the five sub-dimensions of personality were all measured at an interval level of measurement. The appropriate parametric significance test for these hypotheses is the Pearson's product moment correlation. This parametric test assumes that there is a linear relationship between the variables being correlated and that all the variables have a normal distribution (Pallant, 2011:126). If the assumptions are not satisfied the non-parametric alternative, Spearman's rank order correlation, can be used (Cooper and Schindler, 2014:442).

All of the variables' assumption of linearity was tested through a visual inspection of scatter plots indicating the linear correlation. The assumption of normality was assessed through a visual inspection of histograms and the Kolmogorov-Smirnov test of normality (see Table 9 and Figures 2 to 7 in the Annexure). The assumption of linearity was not violated, however, the results from the Kolmogorov-Smirnov test indicate that the assumption of normality was indeed violated for all the variables. The p-values are as follows; for *agreeableness* $p = 0.000$ ($p < 0.0005$); for *extraversion* $p = 0.013$; for *conscientiousness* $p = 0.005$; for *neuroticism* $p = 0.000$ ($p < 0.0005$); for *openness to experience* $p = 0.001$; and for self-efficacy $p = 0.000$ ($p < 0.0005$). All the p - values for the Kolmogorov-Smirnov test are below the 0.05 chosen level of significance. This indicates that these variables do not have normal distributions. Thus, the Spearman's rank order correlation test was used to test the hypothesis.

The scatter plots in Figures 8 to 12 (see Annexure) visually indicate the correlations between the variables tested in the hypothesis. A weak, negative relationship exists between *agreeableness* and self-efficacy. Furthermore, it can be seen that there is a weak, but positive correlation between self-efficacy and *extraversion*, *conscientiousness* and *openness to experience* respectively. Lastly, a strong negative correlation between *neuroticism* and self-efficacy can be seen. The regression lines of each scatter plot demonstrating a relatively linear relationship between each of the five sub-dimensions of personality and self-efficacy, promotes the use of the Spearman's rank order correlation test.

Table 1 below is a correlation matrix showing the results for the correlation analysis between entrepreneurial self-efficacy and each of the five sub-dimensions of personality.

TABLE 1
A CORRELATION MATRIX SHOWING THE RESULTS OF THE SPEARMAN'S RANK ORDER
CORRELATIONS TO TEST THE FIRST FIVE HYPOTHESES

		General Self-Efficacy
Agreeableness (H^2)	Correlation Coefficient (r_s)	-0.089
	Sig. (1-tailed)	0.100
	N	212
Extraversion (H^3)	Correlation Coefficient (r_s)	0.243*
	Sig. (1-tailed)	0.000
	N	212
Conscientiousness (H^4)	Correlation Coefficient (r_s)	0.217*
	Sig. (1-tailed)	0.001
	N	212
Neuroticism (H^1)	Correlation Coefficient (r_s)	-0.407*
	Sig. (1-tailed)	0.000

		General Self-Efficacy
	<i>N</i>	212
Openness to experience (H^3)	Correlation Coefficient (r_s)	0.172*
	Sig. (1-tailed)	0.006
	<i>N</i>	212

* Correlation is significant at the 0.05 level (1-tailed).

The results in Table 1 indicates that there is no statistically significant relationship that exists between self-efficacy and *agreeableness*, $r_s (n-2 = 210) = -0.089$, $p = 0.100$. The p-value (0.10) is larger than the level of significance ($\alpha = 0.05$) against which these hypotheses were tested, the null hypothesis can, therefore, not be rejected.

The results indicate that a statistically significant, positive relationship between the *extraversion* sub-dimension of personality and self-efficacy exist, $r_s (210) = 0.243$, $p < 0.0005$ (one-tailed). The coefficient of determination, r^2 , indicates that the two variables share 5.9% common variance, which is small yet significant enough. Between the *conscientiousness* sub-dimension and self-efficacy once again a statistically significant, positive relationship exists, $r_s (210) = 0.217$, $p = 0.001$ (one-tailed). The coefficient of determination, r^2 , indicates that these two dimensions share 4.7% common variance. With regards to the *neuroticism* sub-dimension and self-efficacy there is a statistically significant, negative correlation, $r_s (210) = -0.407$, $p < 0.0005$ (one-tailed). The coefficient of determination, r^2 , for this hypothesis indicates that *neuroticism* and self-efficacy share 16.5% common variance.

Furthermore, Table 1 indicates that there is a statistically significant positive correlation that exist between self-efficacy and the *openness to experience* sub-dimension of the personality construct, $r_s (210) = 0.172$, $p = 0.006$. The coefficient of determination, r^2 , indicates that these two variables share 2.9% common variance. To summarise, these findings indicate that a correlation exists between respondents' scores on self-efficacy and the *extraversion*, *conscientiousness*, *neuroticism* and *openness to experience* sub-dimensions respectively. The alternative hypotheses H^1 , H^3 , H^4 and H^5 can all be accepted.

Gender and self-efficacy

Lastly, the sixth hypothesis deals with the comparison between the two gender groups with regard to their level of self-efficacy. The null and alternative hypotheses are stated below:

- H_0^6 : Men and Women do not differ in their level of entrepreneurial self-efficacy.
 H^6 : Men and Women differ in their entrepreneurial self-efficacy.

This two-tailed (non-directional) hypothesis was tested at a five per cent level of significance (i.e. $\alpha = 0.05$). Hypothesis 6 (H^6) involves the comparison between two groups of respondents, males and females, on the self-efficacy variable that was measured at an interval level of measurement. The assumption of normality for the two sample sub-groups delivered p-values through the Kolmogorov-Smirnov test of normality for the "female" sub-sample of 0.002 and for the "male" sub-sample of 0.001. Both these p-values are smaller than 0.05 and the assumption of normality was violated for both sample sub-groups, thus the Mann-Whitney U test was used to test the hypothesis (see Table 12 and Figures 13 and 14 in the Annexure).

The results indicate a very small difference ($4.46 - 4.44 = 0.02$) in the mean self-efficacy scores of the "male" ($M = 4.46$, $SD = 0.39$) and "female" ($M = 4.44$, $SD = 0.37$) sub-samples. A higher score on the self-efficacy scale indicates a strong self-efficacy level. Thus, these descriptive statistics indicate, contrary to the expectations of the hypothesis H_6 , that men and women score more or less the same with regards to their self-efficacy level and that no major differences exist. The results for the Mann-Whitney U test for H_6 are presented in Table 2 below.

TABLE 2
MANN-WHITNEY U TEST STATISTICS TO TEST GENDER

	Total: General Self-Efficacy
--	------------------------------

Mann-Whitney U	5406
Wilcoxon W	11511
Z	-0.459
Asymp. Sig. (2-tailed)	0.646

These results indicate that the p-value (Asymp. Sig.) is 0.646 which is larger than the level of significance ($\alpha = 0.05$) against which this hypothesis was tested. Therefore, the null hypothesis cannot be rejected. It can be concluded that there is no statistically significant difference between the mean rankings of the “male” and “female” sample sub-groups on the self-efficacy variable.

DISCUSSION

Firstly, a summary of the findings is discussed followed by the managerial implications and limitations of the study. Lastly, the recommendations for future research are presented.

Summary of findings

This study investigated the relationship between entrepreneurs’ level of self-efficacy and the five sub-dimensions of their personality. It opted to test whether entrepreneurs are prone to demonstrating certain personality characteristics. Furthermore, the study investigated whether there are any differences that exist between the level of self-efficacy that males and females demonstrate. This study contributes to empirical research done in the entrepreneurial field in an emerging country such as South Africa.

The results of this study indicate that there is a positive correlation between the entrepreneurs’ level of self-efficacy and the *extraversion*, *conscientiousness* and *openness to experience* sub-dimensions of their personalities respectively. This means that the more extraverted, conscientious, and open to new experiences individuals are, the more they will lean towards becoming an entrepreneur. This is in line with the recent empirical research on the personality aspect of an entrepreneur (Brandstätter, 2011:223; Strobel *et al.*, 2011:43).

Entrepreneurs tend to demonstrate higher scores on the *extraversion* sub-dimension of personality due to their drive to grow and improve by building strong social networks with individuals and organisations that will improve the success of their business ventures (Brandstätter, 2011:223; Zhao *et al.*, 2010:387). This study confirmed the positive relationship and the results revealed a 5.9% variance in self-efficacy explained by *extraversion*. Previous literature established that entrepreneurs are conscientious individuals who persist with their business ventures and work hard at achieving their goals (Saleem *et al.*, 2011:1924). Conscientious individuals are categorised as disciplined individuals who are organised and motivated in achieving set goals or performance measures and are optimistic of their ability to successfully do so (Hmieleski and Baron, 2008:61; Zhao and Seibert, 2006:262). The results of this study confirm that the more conscientious entrepreneurs are, the higher their belief in their own ability will be. The *conscientiousness* sub-dimension could explain a 4.7% variance in self-efficacy dimension.

Furthermore, this study validated the statistically significant relationship between *openness to experience* and self-efficacy. This finding indicates that entrepreneurs are tolerant of ambiguous situations even though only 2.9% of the variance in self-efficacy could be explained by entrepreneurs’ *openness to experience*. Previous research continually approves that to be an entrepreneur means to be curious, divergent and to explore other alternatives and different ways of doing things (Hmieleski and Corbett, 2008:485; Saleem *et al.*, 2011:1924). Moreover, this study validates the relationship that exists between entrepreneurs’ level of self-efficacy and *neuroticism*. It is observed that self-efficacy and *neuroticism* is significantly and negatively related. Out of all the sub-dimensions of personality, the *neuroticism* sub-dimension proved to affect the entrepreneurs’ level of self-efficacy the most in this study with a 16.5% variance in self-efficacy that could be explained by *neuroticism*. Zhao *et al.* (2010:386) confirms this relationship by noting that individuals high on *neuroticism*

are discouraged by obstacle and setbacks, have a low self-esteem and consequently a low level of self-efficacy.

Interestingly, the results for this study are less clear with respect to the relationship between self-efficacy and *agreeableness*. A very weak negative correlation resulted from this study, however, it was not statistically significant enough. The fact that there is no significant relationship that exists might be an indication that the *agreeableness* sub-dimension does not have an impact on the entrepreneurs' level of self-efficacy. Perhaps a higher level of *agreeableness* might negatively influence entrepreneurs' self-efficacy levels, whereas lower levels of *agreeableness* will not necessarily improve entrepreneurs' level of self-efficacy. Whichever the reason may be, it appears that entrepreneurs overall obtain lower scores in this dimension than in other dimensions (Brandstätter, 2011:227).

Finally, the results of this study found that no statistically significant differences that exist with regard to the level of self-efficacy that females and males demonstrate respectively. Previous empirical research have found significant differences among the level of self-efficacy that females demonstrate against that of males and reported a generally higher level of self-efficacy among males than among females (Dempsey and Jennings, 2014:41; Saleem *et al.*, 2011:1924). Therefore, the results of this study are contrary to that found in previous empirical studies. This may be because the respondents of this study are mostly already entrepreneurs and therefore already demonstrate high levels of self-efficacy. This study may have obtained different results, had the study tested gender differences with regards to entrepreneurial intentions and measured self-efficacy on nascent entrepreneurs only.

Managerial implications

Since there were correlations between most of the personality sub-dimensions and self-efficacy, one could presume that these sub-dimensions of personality are indeed precursors to the self-efficacy level that entrepreneurs demonstrate. Since it is extremely important for entrepreneurs to demonstrate belief in their abilities to successfully manage their own business venture, it would help if the entrepreneurs could identify those dimensions of their personality affecting their self-efficacy the most through the general self-efficacy test. After identifying those dimensions, the entrepreneurs could attempt to improve their self-efficacy levels and consequently improve their overall performance by addressing those dimensions that negatively influence their level of self-efficacy or improving those dimensions that have a positive effect.

Limitations

Some of the limitations of this study could be as a result of the collection of the data or interpretation of the results. One of the most notable limitations is the use of a non-probability sampling method. The findings of this study can, therefore, not be generalised to a larger population. According to the Global Entrepreneurship Monitor (2014:35) 16.8% of South Africa's population between the ages of 18 to 64 are engaged in entrepreneurial activity. Taking this into account, a second limitation is that this study was only conducted within the Gauteng province. Given it is a very limited geographical region and the population size of South Africa, estimated by the Worldometer (2016) at 54 million people, the sample size may be much too small. The findings of this study should, therefore, preferably not be transferred to other geographical regions within South Africa. Another potential limitation of this study could be the use of a general self-efficacy measurement scale to test the level of self-efficacy that entrepreneurs demonstrate. One should consider that perhaps, even though findings across 25 countries confirmed the feasibility of this measurement scale across any domain, that there could still be differences from country to country. As Douglas and Nijssen (2003:621) argue, scales can only be compared across borders if comparisons are made on equivalent properties. "Apples and oranges, for example, can only be compared with their characteristics as fruit, neither as an orange nor as an apple" (Douglas and Nijssen, 2003:621). Lastly, inconclusive results among only one of the sub-dimensions of personality could demonstrate that a more comprehensive measurement scale of personality should be used.

RECOMMENDATIONS FOR FUTURE RESEARCH

This study could be supplemented by findings of a future study that makes use of a probability sampling method in order to ensure that the data can be generalised to the larger population. No significant differences were found in the level of self-efficacy that the two gender sub-groups demonstrate. It would be best if more empirical research is conducted perhaps on a larger sample size or greater geographical region to improve the accuracy of the empirical results. Future research could possibly investigate the relationship between the sub-dimensions of personality in relation to a self-efficacy scale specifically developed for entrepreneurs and determine if the general self-efficacy scale was indeed sufficient for obtaining empirical data in entrepreneurs' level of self-efficacy in relation to their personality traits. Given the fact that this study came up inconclusive concerning the effect of *agreeableness* on entrepreneurs' level of self-efficacy, it would be best for future researchers to help make sense of this troubling finding. This may possibly reveal errors that are currently unclear in this study or reaffirm this study's results.

LIST OF REFERENCES

- Bandura, A. 1977. Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2):191- 215.
- Bhaumik, S.K., and Gelb, S. 2005. Determinants of entry mode choice of MNCs in emerging markets. *Emerging Markets Finance and Trade*, 41(2):5-24.
- Borghans, L., Duckworth, A.L., Heckman, J.J. and Ter Weel, B. 2008. The economics and psychology of personality traits. *The Journal of Human Resources*, 43(4):972-1059.
- Brandstätter, H. 1997. Becoming an entrepreneur - a question of personality structure? *Journal of Economic Psychology*, 18(2-3):157-177.
- Brandstätter, H. 2011. Personality aspects of entrepreneurship: a look at five meta-analyses. *Personality and Individual Differences*, 51(3):222-230.
- Bryman, A. and Bell, E. 2015. *Business research methods*. 4th ed. United Kingdom: Oxford university press.
- Campo, J.L.M. 2011. Analysis of the influence of self-efficacy on entrepreneurial intentions. *Prospectiva*, 9(2):14-21.
- Cooper, D.R. and Schindler, P.S. 2014. *Business Research Methods*. New York, NY: McGraw-Hill/Irwin.
- De Bruin, A., Brush, C.G. and Welter, F. 2007. Advancing a framework for coherent research on women's entrepreneurship. *Entrepreneurship theory and practice*, 31(3):323-339.
- Dempsey, D. and Jennings, J. 2014. Gender and entrepreneurial self-efficacy: a learning perspective. *International Journal of Gender and Entrepreneurship*, 6(1):28-49.
- Derera, E., Chitakunye, P. and O'Neill, C. 2014. The impact of gender on start-up capital: a case of women entrepreneurs in South Africa. *Journal of Entrepreneurship*, 23(1):95-114.
- Drnovšek, M., Wincent, J. and Cardon, M.S. 2010. Entrepreneurial self-efficacy and business start-up: developing a multi-dimensional definition. *International Journal of Entrepreneurial Behavior & Research*, 16(4):329-348.
- Douglas, S.P. and Nijssen, E.J., 2003. On the use of "borrowed" scales in cross-national research: A cautionary note. *International Marketing Review*, 20(6):621-642.
- Eckhardt, J.T. and Shane, S.A. 2003. Opportunities and entrepreneurship. *Journal of Management*, 29(3):333-349.
- Gosling, S.D., Rentfrow, P.J. and Swann, W.B. 2003. A very brief measure of the big-five personality domains. *Journal of Research in Personality*, 37(6):504-528.
- Global Entrepreneurship Monitor. 2014. *GEM 2014 Global Report*. [Online] Available form: <http://www.gemconsortium.org/report> [Accessed: 2016-08-18].

- Hmieleski, K.M. and Baron, R.A. 2008. When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal*, 2(1):57-72.
- Hmieleski, K.M. and Corbett, A.C. 2008. The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing*, 23(4):482-496.
- John, O.P. and Srivastava, S. 1999. The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, 2(1999):102-138.
- Judge, T.A., Jackson, C.L., Shaw, J.C., Scott, B.A. and Rich, B.L. 2007. Self-efficacy and work-related performance: the integral role of individual differences. *Journal of Applied Psychology*, 92(1):107.
- Kirkwood, J. 2009. Is a lack of self-confidence hindering women entrepreneurs? *International Journal of Gender and Entrepreneurship*, 1(2):118-133.
- Kotzé, T. 2015. *Study guide and course notes for Research Methodology 704*. University of Pretoria: Department of Business Management.
- Krecar, I.M. and Coric, G. 2013. Changes in entrepreneurial self-efficacy since completion of entrepreneurial studies. *Procedia-Social and Behavioral Sciences*, 89:74-78.
- Langowitz, N.S., Minniti, M. and Arenius, P. 2005. Global entrepreneurship monitor: 2004 report on women and entrepreneurship. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*, 1-30.
- Larsen, M.D. 2007. *Encyclopedia of Measurement and Statistics*. [Online] Available from: http://0-www.uk.sagepub.com.innopac.up.ac.za/gray3e/study/chapter9/Encyclopaedia%20entries/Quota_Sampling.pdf [Accessed: 17-06-2015].
- Liñán, F., Santos, F.J. and Fernández, J., 2011. The influence of perceptions on potential entrepreneurs. *International Entrepreneurship and Management Journal*, 7(3):373-390.
- Luszczynska, A., Scholz, U. and Schwarzer, R. 2005. The general self-efficacy scale: multicultural validation studies. *The Journal of Psychology*, 139(5):439-457.
- McGee, J.E., Peterson, M., Mueller, S.L. and Sequeira, J.M. 2009. Entrepreneurial self-efficacy: refining the measure. *Entrepreneurship Theory and Practice*, 33(4):965-988.
- Mueller, S.L. and Dato-on, M.C. 2013. A cross cultural study of gender-role orientation and entrepreneurial self-efficacy. *International Entrepreneurship and Management Journal*, 9(1):1-20.
- Nieman, G. and Niewenhuizen, C. 2009. *Entrepreneurship: A South African perspective*. 2nd ed. 1064 Arcadia Street, Hatfield, Pretoria: Van Schaik Publishers.
- Nieman, G.H. and Niewenhuizen, C. 2014. *Entrepreneurship: A South African perspective*. 3rd ed. Pretoria: Van Schaik Publishers.
- Pallant, J. 2011. *SPSS survival manual: a step by step guide to data analysis using SPSS*. 4th ed. Australia: Allen & Unwin.
- Radipere, N.S. 2013. *An analysis of local and immigrant entrepreneurship in the South African small enterprise sector (Gauteng Province)*. Pretoria: University of South Africa.
- Saleem, H., Beaudry, A. and Croteau, A.M. 2011. Antecedents of computer self-efficacy: a study of the role of personality traits and gender. *Computers in Human Behavior*, 27(5):1922-1936.
- Scholz, U., Doña, B.G., Sud, S. and Schwarzer, R. 2002. Is general self-efficacy a universal construct? psychometric findings from 25 countries. *European Journal of Psychological Assessment*, 18(3):242-251.
- Schwarzer, R. and Jerusalem, M. 1995. Generalized self-efficacy scale. *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs*, 1:35-37.
- Schwarzer, R. and Jerusalem, M. 2009. The general self-efficacy scale (GSE). *Anxiety, Stress, and Coping*, 12:329-345.

- Strobel, M., Tumasjan, A. and Sporrle, M. 2011. Be yourself, believe in yourself, and be happy: self-efficacy as a mediator between personality factors and subjective well-being. *Scandinavian Journal of Psychology*, 52(1):43-48.
- Tyszka, T., Cieřlik, J., Domurat, A. and Macko, A. 2011. Motivation, self-efficacy, and risk attitudes among entrepreneurs during transition to a market economy. *The Journal of Socio-Economics*, 40(2):124-131.
- Urban, B. 2010. A gender perspective on career preferences and entrepreneurial self-efficacy. *South African Journal of Human Resource Management*, 8(1):1-8.
- Wilson, F., Kickul, J. and Marlino, D. 2007. Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. *Entrepreneurship Theory and Practice*, 31(3):387-406.
- Worldometer. 2016. *South Africa Population*. [Online] Available from: <http://www.worldometers.info/world-population/south-africa-population/> [Accessed: 2016-08-18].
- Zhao, H. and Seibert, S.E. 2006. The big five personality dimensions and entrepreneurial status: a meta-analytical review. *Journal of Applied Psychology*, 91(2):259-271.
- Zhao, H., Seibert, S.E. and Lumpkin, G.T. 2010. The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. *Journal of Management*, 36(2):381-404.

ANNEXURE

TABLE 3
RELIABILITY COEFFICIENTS

Dimension	Items	Cronbach's Alpha
General Self-Efficacy		0.81
Personality		
Agreeableness	The items 3.2R, 3.7, 3.12R, 3.17, 3.22, 3.27R, 3.32, 3.37R and 3.42** in question 3	0.81
Extraversion	The items 3.1, 3.6R, 3.11, 3.16, 3.21R, 3.26, 3.31R and 3.36 in question 3.	0.72
Conscientiousness	The items 3.3, 3.8R, 3.13, 3.18R, 3.23R, 3.28, 3.33, 3.38 and 3.43R** in question 3.	0.76
Neurotic	The items 3.4, 3.9R, 3.14, 3.19, 3.24R, 3.29, 3.34R, and 3.39 in question 3.	0.74
Openness	The items 3.5, 3.10, 3.15**, 3.20, 3.25, 3.30, 3.35R**, 3.40, 3.41R** and 3.44 in question 3.	0.64

Notes:

“R” denotes reverse scored items.

** denotes items that were removed from the data before analysis to improve the internal reliability of each sub-dimension of personality.

Referring to the final questionnaire the items left out were Question 3.42 (“likes to cooperate with others”) for the *agreeableness* sub-dimension and Question 3.43 (“Is easily distracted”) for the *conscientiousness* sub-dimension. Furthermore, Questions 3.15 (“is ingenious, a deep thinker”), 3.35 (“prefers work that is routine”) and 3.41 (“has few artistic interests”) for the *openness to experience* sub-dimension had to be removed. These items could have been misunderstood or there could have been confusion as to what the items actually mean which caused them to become unreliable.

TABLE 4
CROSS TABULATION BETWEEN GENDER AND FOR HOW LONG ENTREPRENEURS HAVE RUN THEIR OWN BUSINESSES (N=212)

			Gender		Total
			Male	Female	
For how long have you run your own business?	I haven't started my own business yet	<i>n</i>	26	26	52
		%	25.5%	23.6%	24.5%
	For less than 3.5 years	<i>n</i>	31	46	77
		%	30.4%	41.8%	36.3%
	For more than 3.5 years	<i>n</i>	45	38	83
		%	44.1%	34.5%	39.2%
Total		<i>n</i>	102	110	212
		%	100.0%	100.0%	100.0%

TABLE 5
GENERAL SELF-EFFICACY DESCRIPTIVE STATISTICS

	<i>n</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
General Self-Efficacy				4.45	0.38
I am certain that I can accomplish my goals	212	3	5	4.65	0.53
I can solve most problems if I invest the necessary effort	212	4	5	4.65	0.48
I can always manage to solve difficult problems if I try hard enough	212	2	5	4.53	0.57
I am confident that I could deal efficiently with unexpected events	212	2	5	4.48	0.60
If I am in trouble, I can think of a good solution	211	2	5	4.46	0.63
Thanks to my resourcefulness, I can handle unforeseen situations	212	2	5	4.42	0.63
When I am confronted with a problem, I can find several solutions	211	3	5	4.40	0.61
I can handle whatever comes my way	212	3	5	4.39	0.62
I can remain calm when facing difficulties because I can rely on my coping abilities	212	2	5	4.34	0.73
If someone opposes me, I can find the means and ways to get what I want	212	1	5	4.18	0.79

TABLE 6
DESCRIPTIVE STATISTICS FOR THE FIVE-SUB-DIMENSIONS OF PERSONALITY

Personality Sub-dimensions	Minimum	Maximum	<i>M</i>	<i>SD</i>
Agreeableness (n=212)			3.70	0.72
Tends to find fault with others	1	5	3.42	1.15
Is helpful and unselfish with others	1	5	3.98	1.07
Starts quarrels with others	1	5	4.05	0.96
Has a forgiving nature	1	5	3.75	1.19
Is generally trusting	1	5	3.70	1.14
Can be cold and aloof	1	5	3.37	1.12
Is considerate and kind to almost everyone	1	5	3.91	1.03
Is sometimes rude to others	1	5	3.42	1.10
Extraversion (n=212)			3.53	0.63
Is talkative	1	5	3.64	1.08
Is reserved	1	5	3.09	1.26
Is full of energy	2	5	4.12	0.74
Generates a lot of enthusiasm	1	5	3.86	0.84
Tends to be quiet	1	5	2.86	1.26
Has an assertive personality	1	5	4.17	0.85

Personality Sub-dimensions	Minimum	Maximum	<i>M</i>	<i>SD</i>
Is sometimes shy, inhibited	1	5	3.03	1.20
Is outgoing, sociable	1	5	3.50	1.23
Conscientiousness (n=212)			3.98	0.56
Does a thorough job	2	5	4.21	0.78
Can be somewhat careless	1	5	3.36	1.21
Is a reliable worker	1	5	4.35	0.77
Tends to be disorganised	1	5	3.70	1.06
Tends to be lazy	1	5	3.98	0.96
Perseveres until the task is finished	2	5	4.15	0.82
Does things efficiently	2	5	4.12	0.79
Makes plans and follows through with them	1	5	3.97	0.85
Neuroticism (n=212)			2.31	0.59
Is depressed, unhappy	1	5	1.65	0.87
Is relaxed, handles stress well	1	5	2.10	0.92
Can be tense	1	5	2.65	1.12
Worries a lot	1	5	2.70	1.08
Is emotionally stable, not easily upset	1	5	2.03	0.90
Can be moody	1	5	2.84	1.15
Remains calm in tense situations	1	5	2.05	0.87
Gets nervous easily	1	5	2.43	1.04
Openness to Experience			3.90	0.53
Is original, comes up with new ideas (n=212)	1	5	3.94	0.89
Is curious about many different things (n=212)	2	5	4.20	0.75
Has an active imagination	1	5	3.75	1.01
Is inventive (n=212)	1	5	3.82	0.95
Values artistic, aesthetic experiences (n=211)	1	5	3.85	1.05
Likes to reflect, play with ideas (n=212)	2	5	4.20	0.77
Is sophisticated in art, music, or literature (n=212)	1	5	3.55	1.16

TABLE 7
AGE OF RESPONDENTS (N=212)

	Minimum	Maximum	<i>M</i>	<i>SD</i>
Age (years)	18	73	36.20	13.60

TABLE 8
DEMOGRAPHIC VARIABLES

Demographic Questions	<i>n</i>	%
Gender (n=212)		
Male	102	48.11
Female	110	51.89
Highest Qualification (n=212)		
Did not complete high school	6	2.83
Grade twelve (Matric)	45	21.23
Certificate	34	16.04
Diploma	49	23.11
Bachelor's degree	47	22.17
Honours degree	14	6.60
Masters degree	17	8.02
Industry Sector (n=205)		
Agriculture	25	12.20
Manufacturing	22	10.73
Business services	22	10.73
Finance	8	3.90
Transport	6	2.93
Information and Communication Technology (ICT), including web-based/online businesses	10	4.88
Health Care	16	7.80
Education	13	6.34
Social services	7	3.41
Customer services	13	6.34
Hospitality (e.g. restaurants, hotels or guesthouses)	20	9.76
Other	43	20.98

TABLE 9
TEST OF NORMALITY FOR PERSONALITY SUB-DIMENSIONS AND SELF-EFFICACY

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Agreeableness	0.112	212	0.000
Extraversion	0.070	212	0.013
Conscientiousness	0.076	212	0.005
Neurotic	0.124	212	0.000
Openness	0.086	212	0.001
General Self-Efficacy	0.116	212	0.000

Notes: a. Lilliefors Significance Correction

TABLE 10
NUMBER OF CASES ASSESSED FOR SELF-EFFICACY

Gender (sample sub-group)	<i>n</i>	%
Male	102	100%
Female	110	100%

TABLE 11
DESCRIPTIVE STATISTICS FOR GENERAL SELF-EFFICACY AND GENDER SUB-
GROUPS

			Statistic	Std. Error
Total: General Self-Efficacy	Male	Mean	4.46	0.04
		95% Confidence Interval for Mean	Lower Bound 4.38	
			Upper Bound 4.53	
		5% Trimmed Mean	4.48	
		Median	4.50	
		Variance	0.15	
		Std. Deviation	0.39	
		Minimum	3.30	
		Maximum	5	
		Range	1.70	
		Interquartile Range	0.60	
		Skewness	-0.78	0.24
		Kurtosis	0.18	0.47
	Female	Mean	4.44	0.03
		95% Confidence Interval for Mean	Lower Bound 4.38	
			Upper Bound 4.51	
		5% Trimmed Mean	4.46	
		Median	4.50	
		Variance	0.13	
		Std. Deviation	0.37	
		Minimum	3.50	
		Maximum	5	
		Range	1.50	
		Interquartile Range	0.70	
		Skewness	-0.40	0.23
		Kurtosis	-0.57	0.46

TABLE 12
TEST OF NORMALITY FOR SELF-EFFICACY AND GENDER

	Gender	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
General Self-Efficacy	Male	0.114	102	0.002
	Female	0.119	110	0.001

Notes: a. Lilliefors Significance Correction

FIGURE 1
THE SPREAD OF RESPONDENT INDUSTRY SECTORS

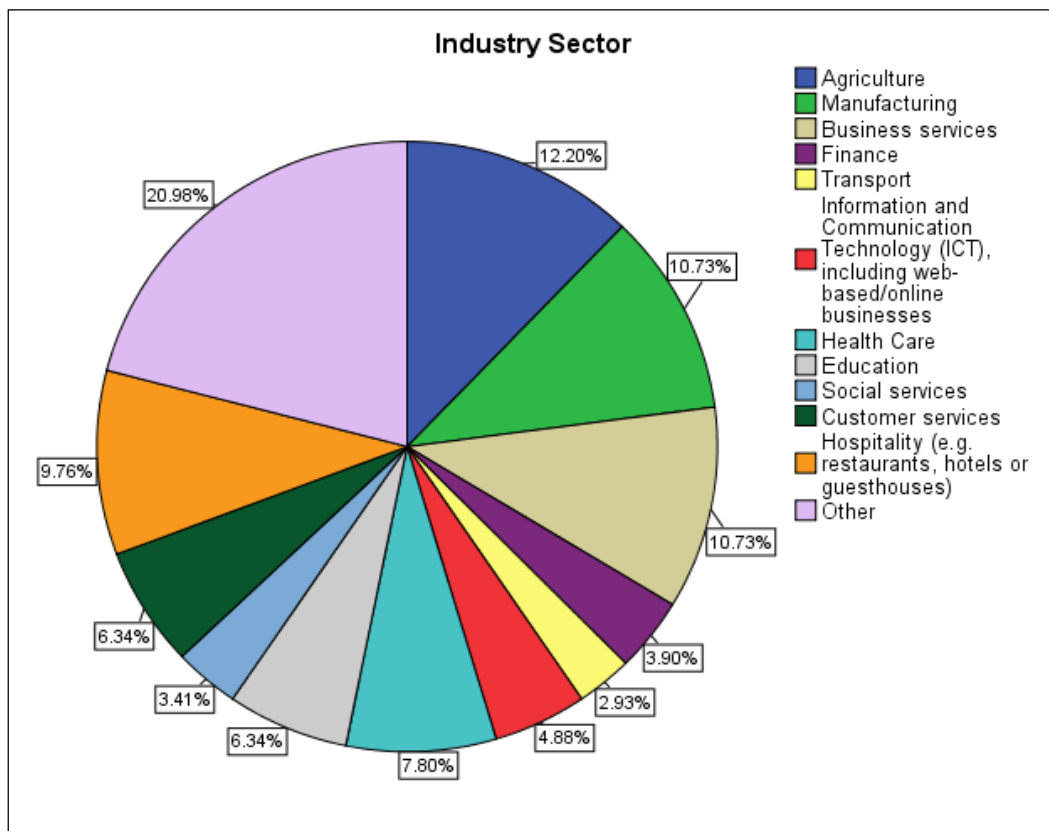


FIGURE 2
NORMALITY DISTRIBUTION FOR AGREEABLENESS

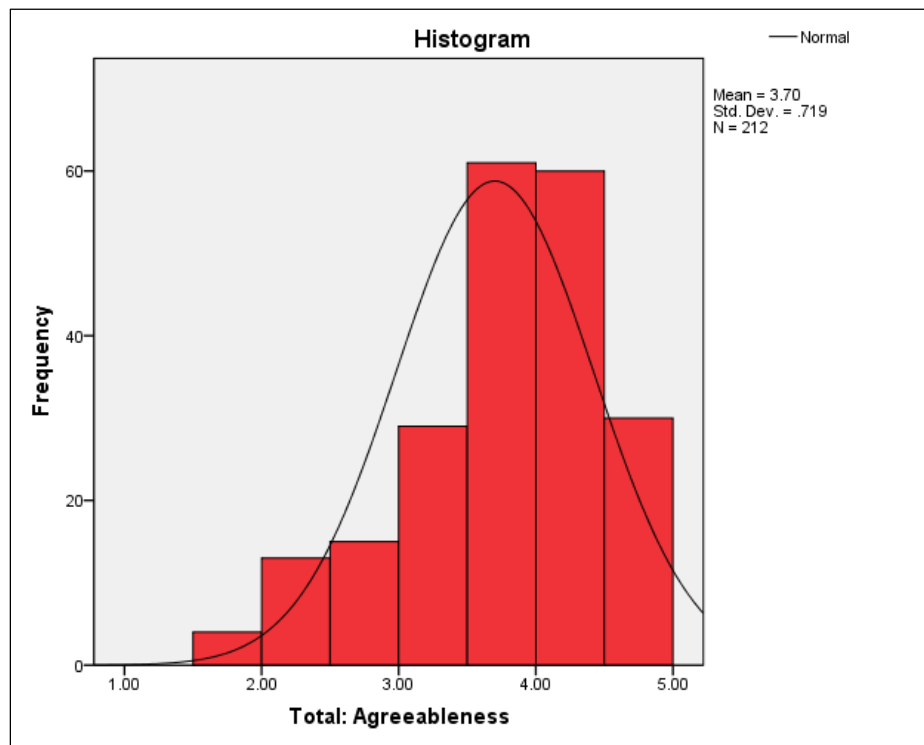


FIGURE 3
NORMALITY DISTRIBUTION FOR EXTRAVERSION

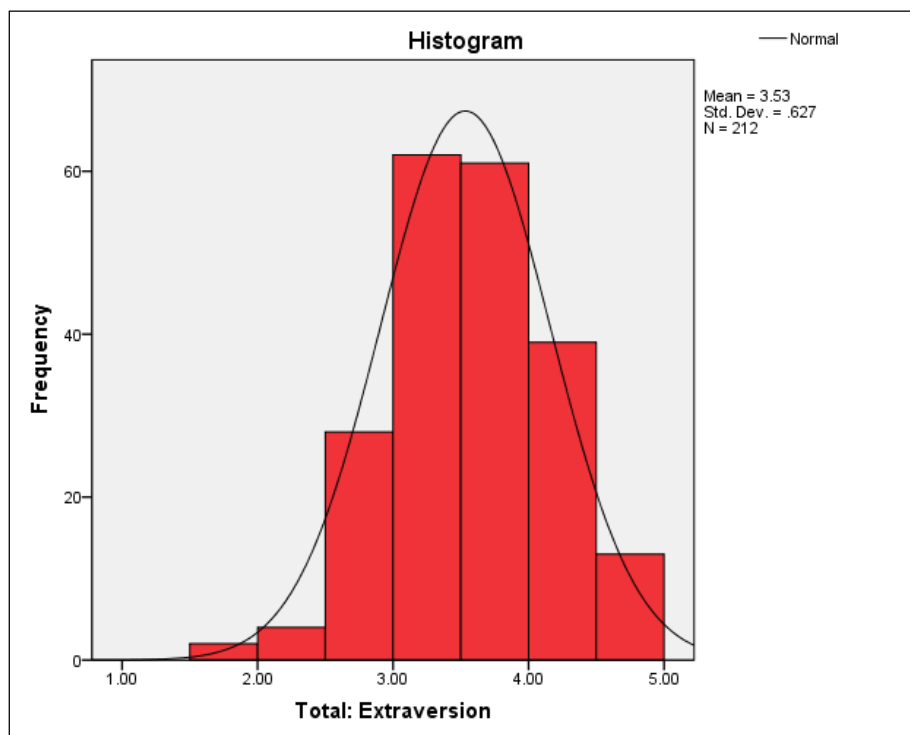


FIGURE 4
NORMALITY DISTRIBUTION FOR CONSCIENTIOUSNESS

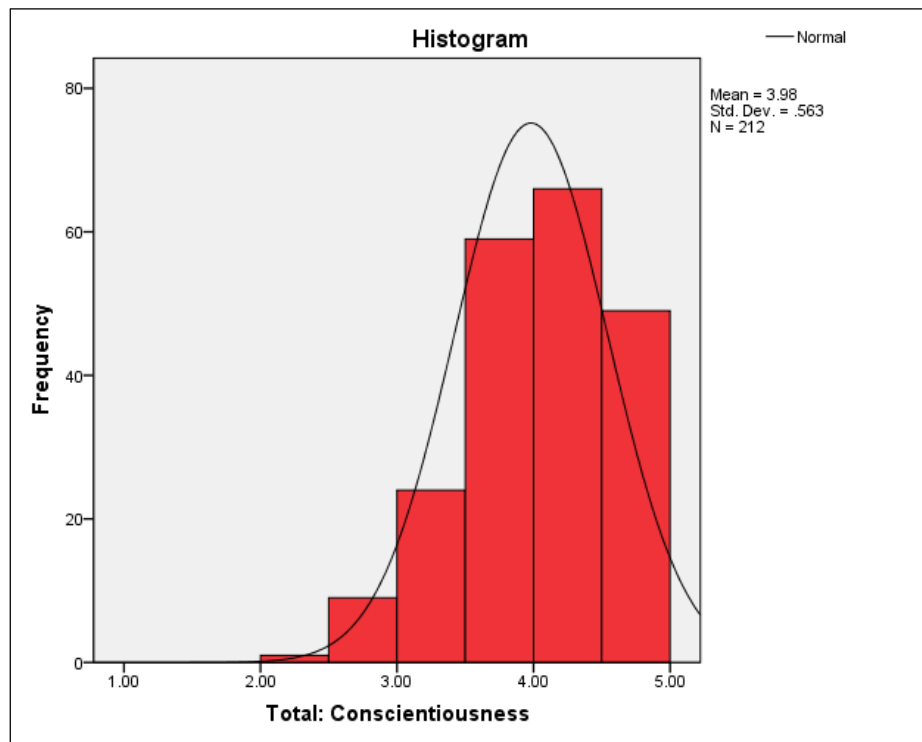


FIGURE 5
NORMALITY DISTRIBUTION FOR NEUROTICISM

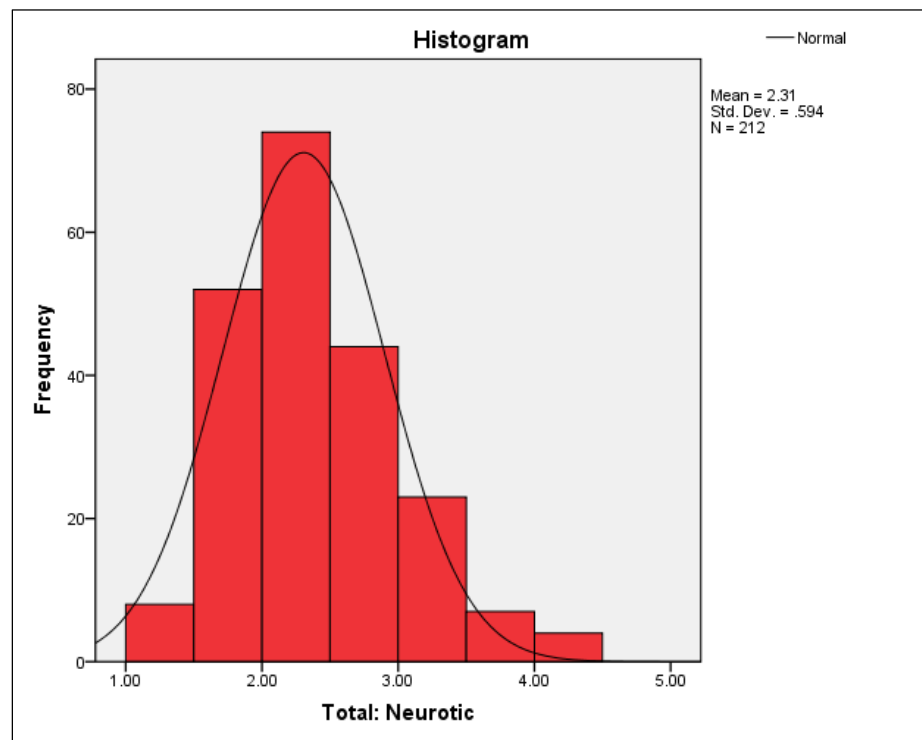


FIGURE 6
NORMALITY DISTRIBUTION FOR OPENNESS TO EXPERIENCE

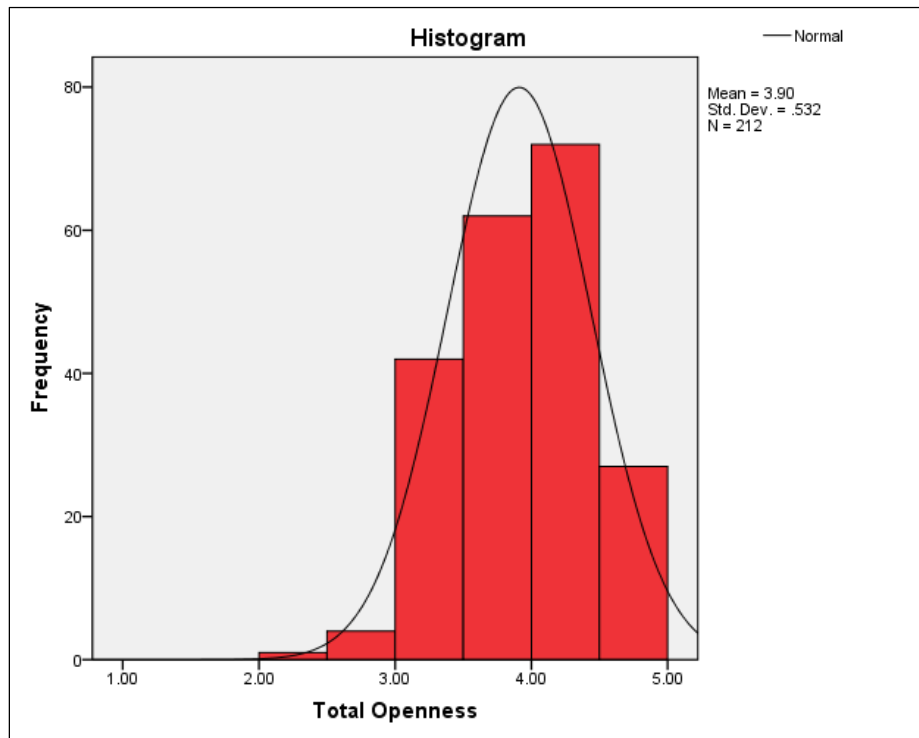


FIGURE 7
NORMALITY DISTRIBUTION FOR GENERAL SELF-EFFICACY

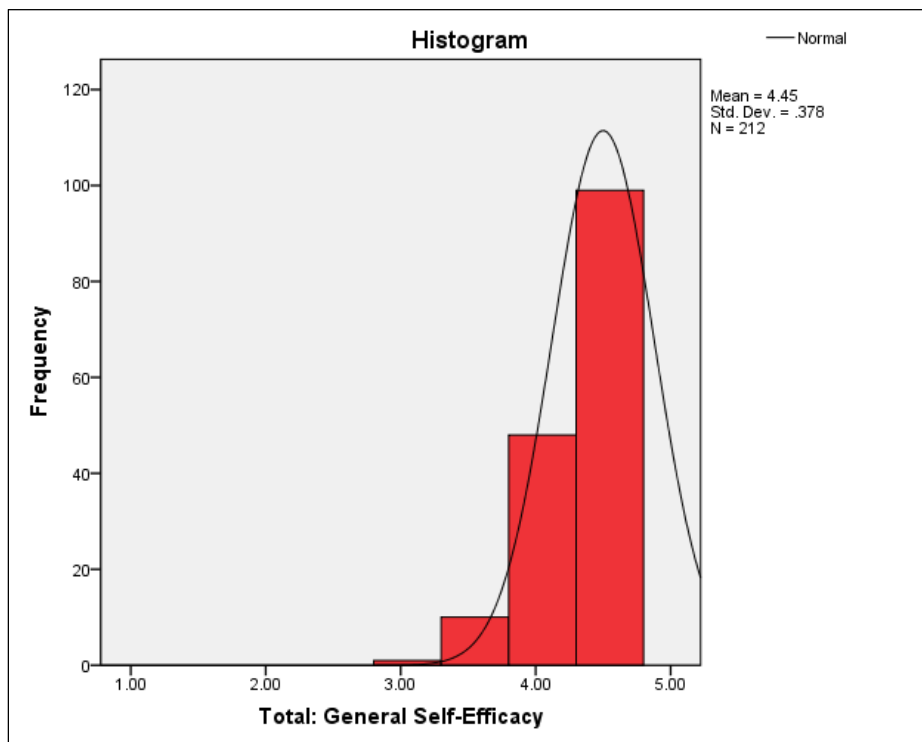


FIGURE 8
CORRELATION BETWEEN AGREEABLENESS AND SELF-EFFICACY

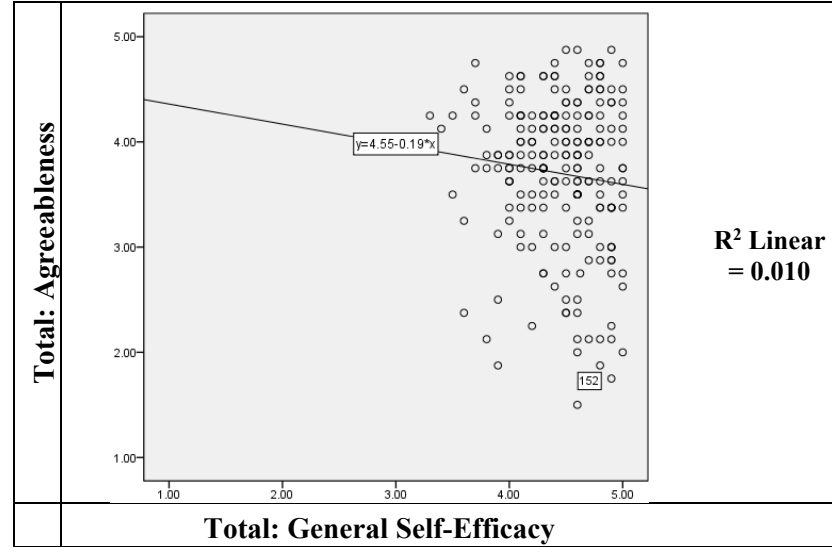


FIGURE 9
CORRELATION BETWEEN EXTRAVERSION AND SELF-EFFICACY

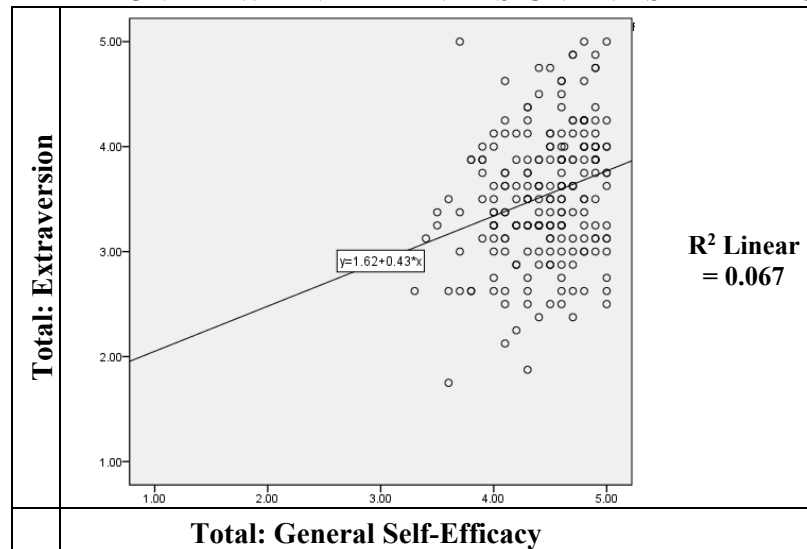


FIGURE 10
CORRELATION BETWEEN CONSCIENTIOUSNESS AND SELF-EFFICACY

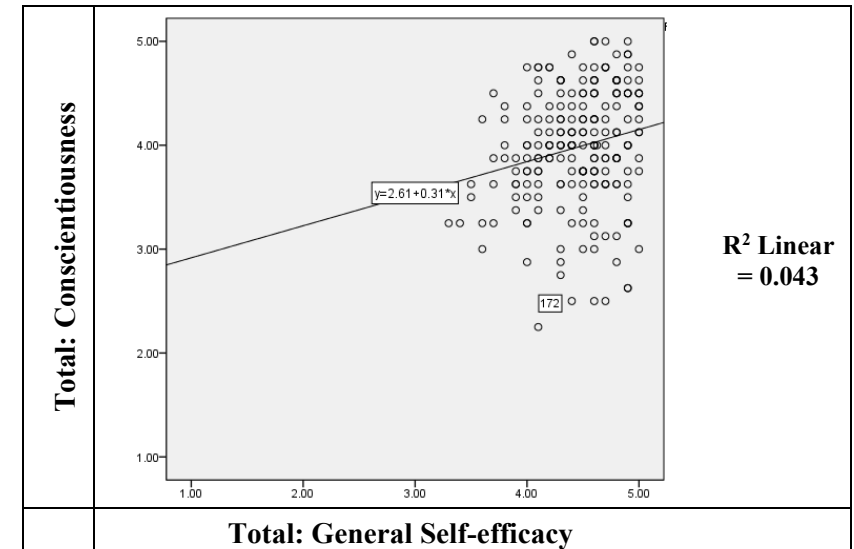


FIGURE 11
CORRELATION BETWEEN NEUROTICISM AND SELF-EFFICACY

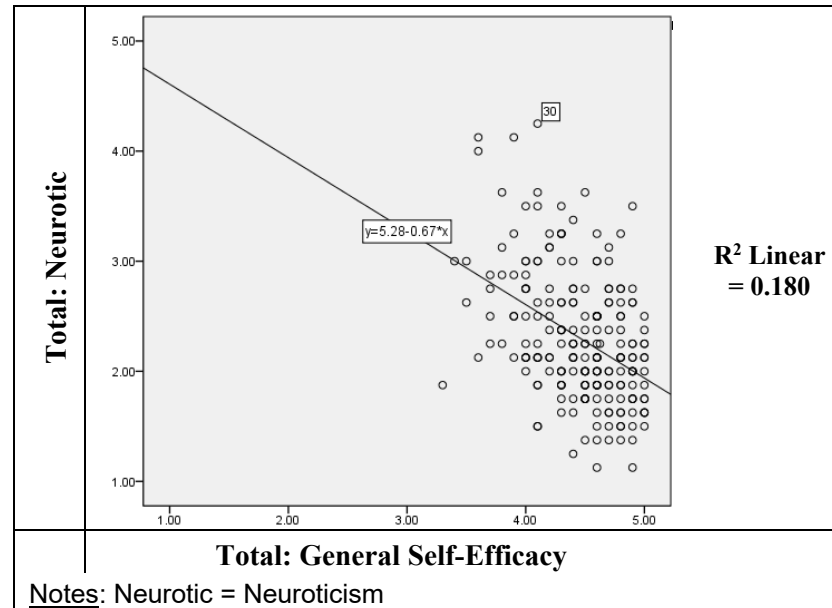


FIGURE 12
CORRELATION BETWEEN OPENNESS TO EXPERIENCE AND SELF-EFFICACY

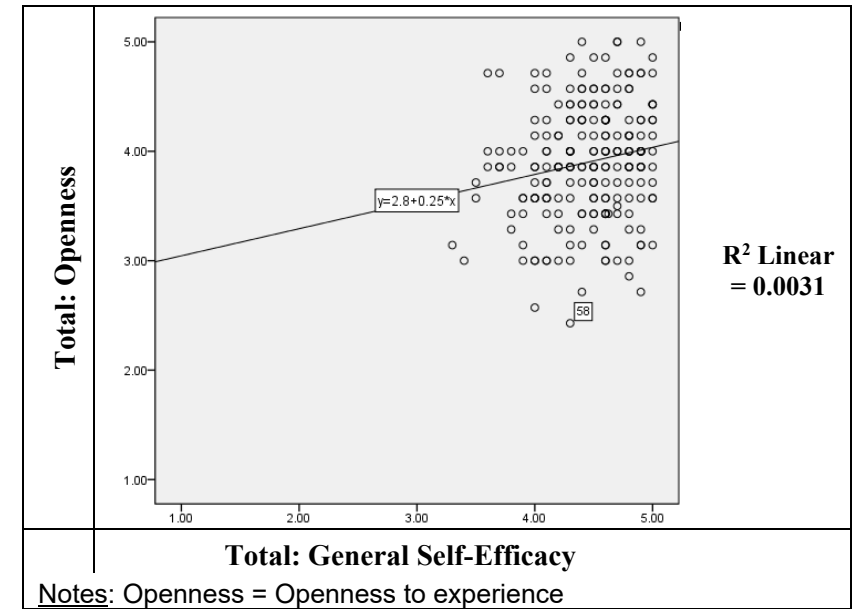


FIGURE 13
NORMALITY DISTRIBUTION OF THE “MALE” SAMPLE SUB-GROUP

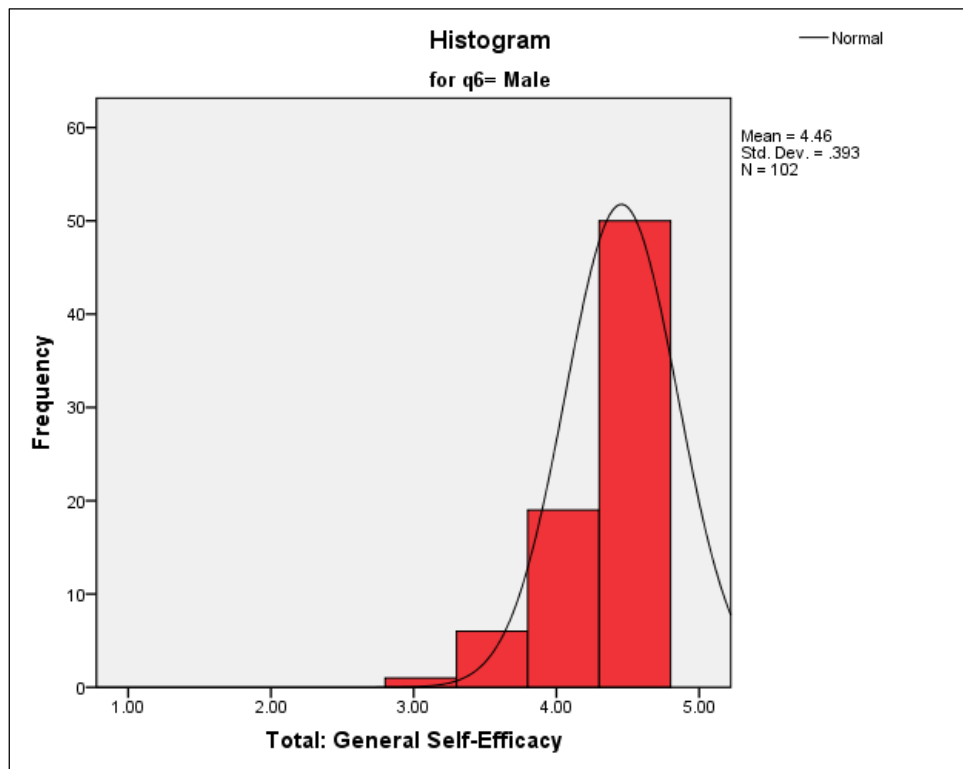


FIGURE 14
NORMALITY DISTRIBUTION OF THE “FEMALE” SAMPLE SUB-GROUP

