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International Bachelor of Economics and Business Economics

# **“To what extent do personality traits influence entrepreneurial intentions?”**

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### **Abstract**

Personality has always been explored as a potential predictor of entrepreneurial success whereas intention has recently been discovered as one of the best predictors of behavior. In accordance to this, the world of academia has placed more focus on entrepreneurial intention as a powerful predictor of who becomes an entrepreneur. On the other hand, personality has also been recognized as an influential factor on who becomes an entrepreneur. This research paper uses the Five-Factor Model (FFM), a well-tested measurement tool of personality in order to identify the effect personality traits have on entrepreneurial intention. Five hypotheses were formed using the five personality traits of Five-Factor Model to identify the effect of personality on an individual's entrepreneurial intention. The findings of this research paper showcase that personality does have an influence on entrepreneurial intention. The results showcase that personality explains 19.5% of the variation in entrepreneurial intention when controlling for entrepreneurial education, whether an individual's family owns a business and the level of study completed by an individual. The two personality traits of 'openness to experience' & 'extroversion' were found to hold a significant influence on the entrepreneurial intention displayed by an individual.

**Keywords:** Entrepreneurial Intention, Five-Factor Model, Personality Traits.

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# 1. Introduction

Entrepreneurship has been defined as the process of designing, launching and running a new business (Yetisen, Volpatti, Coskun, Cho, Kamrani, Butt, Khademhosseini & Yun, 2015). The definition of entrepreneurs used for this research paper is one put forward by Gartner (1989), “Entrepreneurs are individuals that have a specific set of personalities”. The interest towards entrepreneurship and self-employment has been increasing over the past decade particularly as being employed by a large organization has become the ‘normal’ route to take after completing one’s education. As of 2017, Small & Medium-sized enterprises (SME’s) contribute to nearly 60% of employment worldwide and makes up nearly 40% of the GDP in emerging economies (Kumar, 2017). This is only when formal SME’s are taken into account whereas these numbers stand to be considerably higher when informal SME’s are also taken into account.

While the importance of SME’s in the economy has been explored in depth in the world of academia (Lybaert, 1998; Huggins & Johnston, 2009; Love & Roper, 2015; Radas & Božić, 2009; Man, Lau & Chan, 2002), the effect of who becomes an entrepreneur has been less pronounced and has borne conflicted reports over the past four decades (Chell, Haworth, & Brearley, 1991; Cooper & Gimeno-Gascon, 1992; Zhao & Seibert, 2006).

The interest in how personality influences an individual’s aptitude towards entrepreneurship has long been explored in the academic realm (Shane & Venkataraman, 2000). While research in the early 1980’s (Brockhaus & Horwitz, 1986; Gartner, 1989; Low & MacMillan, 1988) pointed out that there was little or no consistency in the relationship between personality and intention towards entrepreneurship, newer research states a different conclusion to the matter. Newer research from Rauch &

Frese (2007) as well as Shane, Locke & Collins (2003) suggests that previous research on the relationship between personality and entrepreneurship resulted from the lack of better hypotheses as well as outdated artefacts of research.

Amidst this renewed interest in exploring the relationship between personalities & an individual's aptitude towards entrepreneurship, an aspect that has not been highlighted effectively is that of "entrepreneurial intention". Thompson (2009) defined entrepreneurial intention as "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plans to do so at some point of time in the future." For the purpose of this research paper, the definition put forward by Thompson (2009) will be used throughout. An individual's intention to set up a business is frequently used in academia exploring the field of entrepreneurship (Krueger, Reilly, & Carsrud, 2000; Webster, 1977; Wilson, Kickul, & Marlino, 2007). Entrepreneurial intention has proven itself to be more than a proxy for entrepreneurship and is a legitimate and useful construct in its own right that can be used not only as a dependent variable, but even as a control and an independent variable (Thompson, 2009). Furthermore, the concept of entrepreneurial intention stands to be a necessary factor to be an entrepreneur and at the same time, is highly dependent on personality factors (Thompson, 2009). In this research paper, entrepreneurial intention will be used as a dependent variable.

As a result of entrepreneurial intention being identified as a key to understanding who becomes an entrepreneur, multiple research papers exploring this concept in detail have emerged; one such research paper was written by Rauch & Frese (2007) with a focus on how personality traits predicted entrepreneurial intentions. Similarly, Crant (1996) identified a strong relationship between an individual's personality and their entrepreneurial intention while also showcasing how using entrepreneurship education & entrepreneurial parents as control variables helped in explaining that a significant amount of variation in an individual's entrepreneurial intentions is caused by personality. On the other hand, Magnusson (1998) focused on a different approach

that compared patterns of entrepreneurial personalities against an already provided entrepreneurial reference type.

This paper contributes to the existing literature by further exploring the relationship between general personality traits and entrepreneurial intention while distinguishing itself by using an additional robustness check. This is done with the use of an ordered logistic regression model when analyzing the effect of personality on entrepreneurial intention using the OLS multiple regression model. For the purpose of this research paper, the Five-Factor Model – FFM (McCrae & John, 1992) (also known as the Big Five Personality Model) will be used to measure an individual's personality. The Five-Factor Model essentially measures 5 factors of personality, namely; Openness to experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism. These 5 factors stand to be the key to answering the research question of this paper.

Entrepreneurs have exhibited certain characteristics that have led to the investigation of the effect of personality on entrepreneurial intention. For example, entrepreneurs were observed to be more willing to risk losing their investment in comparisons to managers working within corporations (Knight, 1921). Furthermore, entrepreneurs have been shown to have a higher motive for achievement as well (McClelland, 1961). While the relationship between personality and entrepreneurial success have been explored to an extent with the usage of varying personality theories and models (Kanfer, 1992; Rauch & Frese, 2000), the relationship between entrepreneurial intention and personality has been the road less travelled by. However, entrepreneurial intention has been proven to be a necessary condition for entrepreneurship and personality traits have also been proven to affect an individual's aptitude towards entrepreneurship (Thompson, 2009). Therefore, it seems logical that personality will have an effect on entrepreneurial intention. This research paper aims to test this assumption and answer the question that remains; **“To what extent do personality traits influence entrepreneurial intention?”**

## 2. Literature Review

In order to answer the research question successfully, a literary review will be conducted on the Five-Factor Model of personality, entrepreneurial intention and the relationship shared by personality and entrepreneurial intention. This literature review will give an insight into previous research on the matter and consequently, will be used to formulate the hypotheses to be tested as part of this research paper.

### 2.1 Five-Factor Model of Personality

The Five-Factor Model has been one of the most prominent models used for the measurement of personality traits (John & Srivastava, 1999; Hofstee, 1994). This is because the Five-Factor Model has made it possible to bring together multiple variables of personality and condense it into a fairly small yet significant structure that enables the analysis of relationships between personality and other variables. It was conceptualized and created by Costa & McCrae (1992) and has brought to the world of academia a unique set of classifications that enable the measurement of personality. The emergence of the Five-Factor Model reignited the interest in the role of personality of multiple areas of applied psychology such as performance in jobs (Barrick & Mount 1991), leadership (Judge, Timothy & Bono, 2000) as well as job satisfaction (Judge, Heller & Mount, 2002). The Five-Factor Model of personality is one that is widely accepted in the world of academia (Ariani, 2013). In the field of entrepreneurial literature, the Five-Factor Model has been used to explore how personality affects multiple aspects of entrepreneurial behavior (Zhao & Seibert, 2006). Previous meta-analyses done showcase that the personality traits measured using the Five-Factor Model are highly relevant for entrepreneurship (Rauch & Frese, 2007; Zhao & Seibert, 2006). Complementarily, previous research also indicates that personality is a variable that holds predictive value for entrepreneurial intentions (Crant, 1996). The Five-Factor Model structure is built up on 5 unique traits; Openness to experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism (Robbins & Judge,

2019). Due to its prominence, ease of use and its ability to simplify the complicated number of traits used to measure personality (McCrae & Costa; 1987), the Five-Factor-Model will be used to measure personality as part of this research paper.

For the purpose of answering the research question, this research paper will place a central focus on the five different personality traits measured using the Five-Factor-Model of Personality. The five factors are as explained below:

***Openness to experience*** is characterized by an active imagination, intellectual curiosity and the attentiveness to feelings, flexibility & autonomy with a focus on being unconventional (Ariani, 2013). The general approach has been that individuals that display a high degree of *openness to experience* tend to actively pursue and enjoy novel events. These individuals are often described as curious, liberal and emotionally differentiated (McCrae & Sutin, 2009). On the other hand, individuals that score low on *openness to experience* tend to prefer familiarity instead of novelty and also tend to be more conventional and conservative in their approach (Rothman & Coetzer, 2003).

***Conscientiousness*** is represented by self-control and the active process of planning, organizing and carrying out tasks (Barrick & Mount, 1993). Individuals that score high on *conscientiousness* tend to be organized, reliable, determined with an innate focus on achievements and ambition. On the negative side, high scores on *conscientiousness* also indicates that the individual may tend to be a workaholic, extremely detail-oriented and focus extensively on keeping everything neat & tidy (Barrick & Mount, 1991). Individuals that score low on *conscientiousness* do not necessarily lack such principles but on the other hand, may not enforce them as much in comparison to high-scorers (Rothman & Coetzer, 2003).

***Extroversion*** is depicted by traits such as high assertiveness, optimism and high energy (Ariani, 2013). Individuals that score high on *extroversion* tend to enjoy interacting with people and large groups, with an appetite for excitement (Liang, Chang &



Hsu, 2013). In contrast to introversion, *extroversion* is built based on positive feelings and hence is viewed as a positive effect (Clark & Watson, 1991). Individuals that score low on *extroversion* tend to be introverted, not social and holds a comparatively pessimistic outlook.

**Agreeableness** is signaled by an individual's willingness to help others. An individual who scores high on *agreeableness* tends to be fundamentally altruistic, sympathetic to others and eager to help and in return believes that others will be equally helpful (Rothman & Coetzer, 2003). An individual with high *agreeableness* prefers positive interpersonal relationships (Liang & Lin, 2015). On the other hand, individuals that score low on *agreeableness* are those who tend to be ego-centric, competitive as opposed to co-operative, skeptical of the intention of others (Rothman & Coetzer, 2003).

**Neuroticism** is outlined by an individual's tendency to experience emotional states that are negative in nature, such as depression, sadness, anxiety, anger and guilt (Major, Turner & Fletcher, 2006). Individuals who score high in *neuroticism* may be more likely to experiencing psychiatric conditions, more prone to irrational ideas, less control over impulses and more affected by stress (Liang & Lin, 2015). On the other hand, individuals that score low in *neuroticism* tend to be more emotionally stable.

In order to aptly implement the Five-Factor Model, it is necessary to understand the instruments used to measure it. The Five-Factor Model, (commonly known as the Big Five personality test) has gained wide acceptance as a tool to measure personality traits in not only the field of psychology but also in multiple other scientific fields such as economics (Barrick, Mount, & Judge, 2001, Credé, Harms, Niehorster, & Gaye-Valentine, 2012; John, Naumann, & Soto, 2008; Lang, John, Lüdtke, Schupp, & Wagner, 2011; Marsh, Lüdtke, Muthén, Asparouhov, Morin, Trautwein, Nagengast, 2010). However, the instruments used to measure the Five-Factor model has varied differently. There exist quite a few well-established instruments in order to measure the Five-Factor Model, such as the NEO-Personality inventory (NEO-PI-R, Costa &

McCrae, 1985) and the Big Five Inventory (John, Donahue & Kentle, 1991). While these instruments help provide an in-depth analysis of the Five-Factor Model, the issue faced is that these instruments tend to be too long. In the field of personality-focused psychology, the use of these instruments is not only justified but often recommended. However, in fields outside that of personality-focused psychology, these instruments are often too expensive to apply due to time-constraints or budget constraints (Kovaleva, Beierlein, Kemper & Rammstedt, 2013).

An alternative instrument was created by Kovaleva et al. (2013) particularly to address this issue, known as the BFI-K. The BFI-K contained only 21 Likert items in order to make it a short and inexpensive method to measure the Five-Factor Model. Due to its ease of use, low cost & time effectiveness, the BFI-K is used to measure the Five-Factor Model as part of this research paper.

## **2.2 Entrepreneurial Intention**

In today's world of academia, 'intention' has become one of the most useful predictors of planned behavior when that behavior is fairly rare and can't be predicted (Krueger, Reily & Carsrud, 2000). The formation of new businesses tends to occur over time and happens after a substantial amount of planning. Not surprisingly, this is exactly what makes intention models the best fit for the field of entrepreneurship (Bird, 1988). Thompson (2009) defined entrepreneurial intention as "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plans to do so at some point of time in the future."

Lans, Gulikers & Batterink (2010) identified three types of entrepreneurial intentions:

1. Classical Entrepreneurial Intention - The intention to establish a business.
2. Alternative Entrepreneurial Intention - The intention to continue running an inherited or acquired business.

3. Intrapreneurial Intention - The intention to be an entrepreneur operating within a corporation.

The three different views of entrepreneurial intentions put forward by Lans et al. (2010) clearly showcases professional requirements and goals differ amidst those in the field of entrepreneurship. In the case of university students, the type of entrepreneurial intention tends to be classical and intrapreneurial but in contrast, students do not tend to hold alternative entrepreneurial intentions (Lans et al., 2010). As the dataset used for this research paper comprises of only students, this research paper will aim to identify the influence of personality traits on **classical entrepreneurial intentions.**

Most of the activity that is considered to be entrepreneurial is intentionally planned behavior (Krueger, Reily & Carsrud, 2000) and intention is most likely the greatest predictor available when it comes to planned behavior (Bagozzi et al., 1989). At its very root, intentions predict behavior and similarly, there are certain attitudes that act as a predictor of intention. This is why “Intentions serve as a conduit to better understanding the act itself” according to Ajzen (1987, 1991) & Krueger, Reily & Carsrud (2000). This is exactly why intention is the key variable that bridges the gap between the creation of a business and external influences such as personality traits. Entrepreneurial intention is hence, the variable with the most explanatory power when predicting entrepreneurial behavior.

## **2.3 Personality Traits & Entrepreneurial Intention**

In order to effectively explore the relationship between personality traits and entrepreneurial intention, it is imperative to understand the entrepreneurial school of thought that will be used. According to Cunningham and Lischeron (1991), there exists six schools of thought in entrepreneurship literature and all of them are united by the definition of entrepreneurship but differentiated by their beliefs. For the purpose of this research paper, the 'psychological characteristics' school of thought will be

used. The psychological characteristics school of thought focuses on entrepreneurs having unique values, attitudes and needs that makes them a match for the field of entrepreneurship. A noted set of behaviors stemming from this school of thought is the existence of personal values, a propensity for risk and a need for achievement. Hence, this school of thought focuses on how personality characteristics and traits affect an individual's ability to be an entrepreneur. The aptitude to be an entrepreneur is highly dependent on an individual's personality and this path of research stands to be highly critical in the exploration of entrepreneurial personality (Connie, James, John, Steven & Daniel, 2005). Furthermore, this has revitalized the interest towards the relationship between personality and entrepreneurship (Rauch & Frese, 2000) where the individual is focused on.

According to Gartner (1989), "Entrepreneurs are individuals that have a specific set of personalities". In the field of entrepreneurship literature, personality has proved to be a successful predictor of not just the intention to start a business but also entrepreneurial success and how well an individual can enhance intrapreneurship within corporations (Shaver & Scott, 1991). The influence of personality on entrepreneurship is so strong that it has become one of the most commonly used approaches in entrepreneurial literature (Rauch, 2014). Furthermore, there are a plethora of meta-analytic studies done over the past 20 years that showcase a strong relationship between personality traits and entrepreneurial intention (Zhao & Seibert, 2006; Brandstätter, 2011). The field of entrepreneurship revolves around the individual who is the entrepreneur. Since the role of the entrepreneur is central in entrepreneurship, the individual characteristics of the entrepreneur has been researched extensively (Antoncic, Bratkovic, Singh & De Noble, 2015).

Recent research in entrepreneurial literature clearly identifies the importance of the role of personality traits in determining who becomes an entrepreneur, yet not enough attention has been given to general personality traits. Rauch & Frese (2007) identified two different series of personality traits; Specific Personality Traits and

General Personality Traits. This research paper intends to identify the effect of general personality traits (represented by the Five-Factor Model) on entrepreneurial intention. This has led to the formation of the central research question:

**“To what extent do personality traits influence entrepreneurial intention?”**

One of the main criticisms in using personality traits to predict entrepreneurial intention is that there have been different measures of personality traits created and used by different research papers making it difficult to compare different studies. The solution to this issue is the use a universal measure of personality (Singh & DeNoble, 2003). This is where the Five-Factor model stands out as it has been used to measure personality in multiple studies, making it the much-needed “universal measure of personality”.

Each of the five elements of the Five-Factor model have been shown to have a relationship with entrepreneurship personalities but the nature of the relationship has not been explored extensively. Previous research has also show that *openness to experience* is often necessary when adapting to change (Yap, Anusic & Lucas, 2012). Entrepreneurs are generally known to be the ones that bring in new products & develop new ideas, implying that not only do they have to know how to adapt to changes in the market, they tend to be the ones that bring change to the market (Zhao & Seibert, 2006). Entrepreneurs are known to be risk-takers and are also known to be the drivers of innovation within many fields (Brockhaus Sr, 1980). In order to be innovative and introduce new products or services, an individual who is an entrepreneur would be expected to be curious, imaginative with a propensity to explore (Ariana, 2013). Furthermore, previous meta-analyses conducted have show-cased how openness to experience have a positive effect on entrepreneurial intention (Zhao & Seibert, 2006). Hence, the first hypotheses that will be tested for the purpose of this research paper is **H1: Openness to Experience positively influences entrepreneurial intention.**

The characteristics of conscientious behavior has been previously theorized to be part of the key set of characteristics of an entrepreneur (McClelland, 1961; Barrick & Mount, 1993). Furthermore, previous entrepreneurial studies have indicated that entrepreneurs tend to be highly motivated when it comes to achieving their goals (Stewart & Roth, 2004). This indicates that entrepreneurs are expected to score high in *conscientiousness*. Furthermore, previous literature has showcased that conscientiousness is positively related to entrepreneurial intention (Wang, Chang, Yao & Liang, 2016; Brice, 2004). Therefore, the second hypothesis that will be tested in order to answer the research question is **H2: Conscientiousness positively influences entrepreneurial intention.**

Salespersons have scored highly on the *extroversion* scale according to Costa & McCrae (1992). Individuals in entrepreneurship tend to play the role of a salesperson, whether it is to bring on a new client or attempting to secure investment from angels (Zhao & Seibert, 2006). When entering the field of entrepreneurship, a highly social & extroverted behavior is key when it comes to client interactions as well as networking (Caird, 1993). Therefore, the expectation is that entrepreneurs score high in *extroversion*. Furthermore, extroversion has been found to be positively related to entrepreneurial intention in previous research (Zhao, Seibert & Lumpkin, 2010). As a result, the third hypothesis that will be tested as part of this research paper is **H3: Extroversion positively influences entrepreneurial intention.**

When observing the field of entrepreneurship, it is observed that entrepreneurs do not particularly aim to please people, and can be egotistical, competitive and are okay with conflict (Rothman & Coetzer, 2003). This is further reaffirmed by (Zhao & Seibert, 2006) where they identified that entrepreneurs tend to be self-entered and highly competitive. Therefore, entrepreneurs are expected to score low in *agreeableness*. Previous research also indicates that agreeableness is negatively linked to entrepreneurial intention (Antoncic, Bratkovic, Singh & De Noble, 2015). This is reaffirmed by Zhao & Seibert (2006) in their paper where they identified that entrepreneurs tend to show lower levels of agreeableness in comparison to managers. Therefore,

the resulting fourth hypothesis that will be tested as part of this research paper is **H4: Agreeableness negatively influences entrepreneurial intention.**

In previous literature, entrepreneurial individuals have been described as individuals that have a high level of self-confidence (Chen, Gully & Eden, 2001) that tend to have a sturdy belief in their ability to assert their control over outcomes (Simon, Houghton & Aquino, 2000). It is also observed that entrepreneurs tend to be relaxed, calm and are able to handle stress well (Hough et al., 1990). Hence, entrepreneurs are expected to score low in *neuroticism*. Additionally, previous research on this relationship suggests that neuroticism is negatively related to entrepreneurial intention (Zhao et al., 2010). Therefore, the fifth hypothesis that will be tested as part of this research paper is **H5: Neuroticism negatively influences entrepreneurial intention.**

# 3. Data & Methodology

## 3.1 Data

The dataset used for the purpose of this research paper is a survey conducted during the period of May 2015 and April 2016. The survey was conducted in the form of a questionnaire at Erasmus University Rotterdam in the Netherlands and holds complete answers for a total of 150 students (Bernoster, Rietveld, Thurik & Torr s, 2018). The survey was answered by the students studying at Erasmus University and was open to students of all faculties. The questionnaire enabled the measurement of entrepreneurial intention, personality traits of the Five-Factor Model, age, gender, nationality, level of study, type of study, average grades & family influences.

The use of this dataset enables an analysis that focuses on the effect of personality traits on entrepreneurial intention while controlling for factors that hold a premeditated influence on the analysis such as the level of education, whether the individual's family owns a business and whether the individual has received entrepreneurial education (Crant, 1996). Prior to conducting the analysis, it is imperative to thoroughly explore the type of variables, transformations and methods used. As a first step, the significance level must first be established. Due to the low sample size of this paper and the deficiency of variation, the results of this research paper will be tested against a significance level of 10%. The exploration of the dataset & methodology will provide a clearer perspective to understand the workings behind the analysis, which in turn will enable a better interpretation of the final results and outcome. Hence, the next section will explore the variables derived from the dataset and how they further the goal of answering the central question of this research paper.



### 3.1.1 Dependent Variable - Entrepreneurial Intention

In order to measure the dependent variable i.e. Entrepreneurial Intention, a 6-item Likert Scale was used. This 6-item scale was introduced by Liñán and Chen (2009) in their paper “Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions”. All of the six items part of this scale (Table 1) was answered on a 7-point Likert scale as shown in Table 2. For the purpose of this research paper, ‘Entrepreneurial Intention’ is treated as a numeric ordinal variable.

<b>Entrepreneurial Intention Likert Items</b>
I am ready to do anything to be an entrepreneur
My professional goal is to become an entrepreneur
I will make every effort to start and run by own firm
I am determined to create a firm in the future
I have very seriously thought of starting a firm
I have the firm intention to start a firm someday

**Table 1: 6-item Likert Scale measurement of Entrepreneurial Intention**

<b>7-Point Likert Scale used for measuring Entrepreneurial Intention</b>						
Totally Disagree	Disagree	Partially Disagree	Neutral	Partially Agree	Agree	Totally Agree



**Table 2: 7-Point Likert Scale used to measure Entrepreneurial Intention**

In order to identify whether this Likert scale was internally reliable, Cronbach’s alpha was calculated to be 0.95 as shown in Table 4 (3.1.4 - Descriptive Statistics). This

indicated a high level of internal reliability (Tavakol & Dennick, 2011) of the 6-item Likert scale used to measure entrepreneurial intention in this research paper.

### 3.1.2 Independent Variable - Five-Factor Model

Due to its prominence, multiple instruments have been developed in order to measure the Five-Factor Model. The use of different instruments shows similar results but still have an influence on the results themselves due to the varying degrees of detail resulting from the different likert items used and the number of likert items used (Ostendorf & Angleitner, 1994). The instrument used to measure the Five-Factor Model in this research paper is the BFI-K instrument created by Kovaleva et al. (2013). The BFI-K contains 21- Likert Items and enables the analysis of the Five-Factor Model of personality a feasible option in fields apart from personality-focused psychology.

The Likert scales for *agreeableness*, *extroversion*, *neuroticism* and *conscientiousness* are made up of 4 likert items each (Appendix 7.1) whereas the likert scale for *openness to experience* consists of 5 Likert items (Appendix 7.1). All the likert items used as part of the BFI-K instrument are answered on a 5-point Likert scale as seen in Table 3. The variables of 'agreeableness', 'extroversion', 'neuroticism', 'conscientiousness' and 'openness to experience' are all numeric ordinal variables.

In order to identify whether the Likert Scales used to measure the BFI-K was internally reliable, Cronbach's alpha was calculated separately for each of Likert scales of 5 factors independently. As seen in Table 4 (3.1.4 – Descriptive Statistics), the Likert scale that was used to measure 'Openness to Experience', 'Conscientiousness', 'Extroversion', 'Agreeableness' and 'Neuroticism' scored 0.73, 0.69, 0.76, 0.49 and 0.81 respectively. This indicated a relatively high level of internal reliability (Tavakol & Dennick, 2011; Gliem & Gliem, 2003) of the Likert scales used for four factors with only the likert scale used to measure 'Agreeableness' showing a low level of internal reliability (0.49). On average, the Cronbach's alpha for the BFI-K instrument was shown

to be approximately 0.7, indicating a good level of internal reliability of the BFI-K instrument used to measure the Five-Factor Model.

5-Point Likert Scale used for measuring BFI-K (Five-Factor Model)				
Not applicable at all	Not applicable	Neither	Applicable	Highly Applicable
●	●	●	●	●

**Table 3: 5-Point Likert Scale used to measure Five-Factor Model (BFI-K)**

### 3.1.3 Control Variables

#### 3.1.3.1 Level of Study & Entrepreneurship Education

‘Level of Study’ and ‘Entrepreneurship Education’ are both influential factors when it comes to entrepreneurial intention. Turker and Selcuk (2009) set about to identify the factors that affect entrepreneurial intention in university students and one of their key findings was that the level of education has a significant effect on entrepreneurial intention. A study carried about by Gorman & Hanlon (1997) further showcased how entrepreneurial intention could be positively influenced by entrepreneurship education programs. This was further reaffirmed by Henderson & Robertson (2000) in their paper where they discovered a successful education in the field of entrepreneurship could be a factor that leads to an increased level of entrepreneurial intentions in individuals.

On the other hand, both ‘Level of Study’ as well as ‘Entrepreneurship Education’ have been shown to be influenced by personality traits as well. Chamorro-Premuzic & Furnham (2003) showcase how nearly 30% of the variation in a student’s academic performance was explained by personality traits. O’Connor & Paunonen (2007) used the Five-Factor Model in their analysis to conclude that personality traits do have a significant effect on academic performance. Using the Five-Factor Model, Komarraju

& Karau (2005) illustrated how personality traits have a significant effect on academic motivation as well.

Therefore, previous academic literature showcases how both 'Level of Study' as well as 'Entrepreneurship Education' have an influence on entrepreneurial intention and is influenced by personality traits. As a result of this, both 'Level of Study' and 'Entrepreneurship Education' will be used as control variables in this research paper. 'Level of Study' is a numeric ordinal variable measured on a 5-point Likert scale, with 'Bachelors' = 1, 'Masters' = 2, 'PhD' = 3, 'Postdoctoral' = 4 & 'Executive Education' = 5. 'Entrepreneurship Education' is measured as a numeric nominal variable that requires the participants to answer whether their study included course on entrepreneurship. The response of the participants is recorded with 'Yes = 1' or 'No = 2'.

### **3.1.3.2 Family**

The variable of whether an individual's parents currently own a business is represented by the variable 'Family Business'. This variable was measured using the question 'Do your parents currently own a business'. Both of these questions were answered by the participants with 4 options; "No" = 1, "Yes, Father" = 2, "Yes, Mother" = 3 & "Yes, both" = 4. For the purpose of this research paper, this variable was transformed into a numeric nominal variable with "Yes = 1" indicating that the participant's parents owned a business and "No = 2" indicating that the participant's parents did not own a business.

The effect of an individual's family owning a business on the entrepreneurial intention exhibited by an individual has been shown to be clearly significant by Carr & Sequeira (2007), Van Auken, Stephens, Fry & Silva (2006) & Dyer and Handler (1994) amidst multiple other previous literature showcasing the same (Mungai and Velamuri, 2011; Katz, 1992; Laspita, Breugst, Heblich & Patzelt, 2012). As a result, 'Family Business' will be used as a control variable for the purpose of this research paper.

### 3.1.4 Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum	Cronbach's Alpha
Entrepreneurial Intention	3.28	1.59	1	7	0.95
Openness to Experience	3.63	0.43	2.4	4.4	0.73
Agreeableness	2.96	0.62	1.25	4.5	0.49
Extroversion	3.32	0.44	2.25	5	0.76
Conscientiousness	3.61	0.47	2.25	4.75	0.69
Neuroticism	2.93	0.54	1.5	4.25	0.81
Study Level	1.15	0.36	1	2	-
Entrepreneurship Education	1.68	0.47	1	2	-
Family Business	1.71	0.46	1	2	-
Age	20.64	2.06	18	30	-
Gender	0.45	0.50	0	1	-

**Table 4: Descriptive Statistics**

The dataset consists of 150 participants where majority of the participants are female and make up just over 55% of the dataset. Table 4 above showcases the means, standard deviations, minimum & maximum of the main variables of the dataset used for the purpose of this research paper, enabling a clear overview of the data used. All the values have been rounded by 2 decimal points to the nearest value.

The age of the participants varied from 18 - 30 and the average age of the participants is approximately 21 years of age. The participants are observed to be either

pursuing a Bachelors degree or a Masters degree as 85% of the participants were observed to be in their Bachelors whereas only 15% were observed to be in their Masters. This also highlights how none of the participants were completing a PhD, Postdoctoral program or Executive Education at the time the questionnaire for the dataset was conducted. Additionally, it is observed that a majority of the participants have had some form of entrepreneurial education as observed by the mean of the variable 'Entrepreneurship Education'.

On average, entrepreneurial intention (scored on a 7-point likert scale) is seen to be just about medium (3.28 out of 7) in the dataset used (Table 4). Meanwhile, the participants on average showcase a high level of openness to experience, extroversion & conscientiousness but lower levels of agreeableness and neuroticism overall. For the purpose of accurate figures, all the personality traits measured using the Five-Factor Model were recoded before calculating the descriptive statistics. Recoding is the process of reversing likert items that have been worded negatively and is explained in detail under the next sub-section. Additionally, an interesting observation is that 29% of the participants' parents are entrepreneurial and owns a business.

A correlation table (Table 5) was created in order to analyze the correlations between the variables used in this research paper. The results of the correlations calculated showcase that openness to experience and extroversion are significantly positively correlated with the dependent variable of entrepreneurial intention. On the other hand, entrepreneurship education and family business are seen to be negatively correlated with entrepreneurial intention. Furthermore, extroversion is observed to be positively correlated with openness to experience. Contrastingly, both entrepreneurship education and gender are negatively correlated with openness to experience. Entrepreneurship education and family business are observed to be negatively correlated to conscientiousness. Similarly, gender is seen to be negatively correlated to extroversion. The level of study, age and gender are also shown to be negatively correlated with neuroticism. Age is observed to be positively correlated with the level

of study. Family business is also shown to be negatively correlated with entrepreneurship education whereas gender is shown to be negatively correlated with both entrepreneurship education as well as family business.

Variable Name	1	2	3	4	5	6	7	8	9	10	11
1. Entrepreneurial Intention	1										
2. Openness to Experience	0.246*	1									
3. Conscientiousness	0.126	-0.125	1								
4. Extroversion	0.150*	0.199*	0.114	1							
5. Agreeableness	-0.097	-0.03	0.105	0.057	1						
6. Neuroticism	-0.073	0.009	-0.087	-0.02	-0.019	1					
7. Level of Study	-0.029	-0.091	0.131	0.025	-0.013	-0.145*	1				
8. Entrepreneurship Education	-0.167*	0.178*	-0.234*	-0.022	-0.006	0.106	-0.105	1			
9. Family Business	-0.258*	-0.083	-0.157*	-0.005	0.112	-0.079	-0.092	-0.154*	1		
10. Age	0.090	-0.006	-0.063	0.010	-0.114	-0.145*	0.446*	0.008	0.121	1	
11. Gender	0.022	-0.202*	-0.051	-0.183*	-0.082	-0.350*	-0.085	-0.160*	-0.184*	0.001	1

\*p-value < 0.1

**Table 5: Correlation between variables**

## **3.2 Methodology**

### **3.2.1 Likert Scale - Reverse Coding**

In order to analyze the dataset provided, the data had to be transformed in order to make it comparable and clear. The first step taken in this scenario was to reverse-code parts of the BFI-K Instrument. Reversed items (negatively worded) are used in combination with regular (positively worded) items in likert scales as it helped reduce response style bias (Nunnally & Bernstein, 2010). Response style bias is the tendency to respond to items without paying enough attention to their content (Suárez-Alvarez, Pedrosa, Lozano, García-Cueto, Cuesta & Muñiz, 2018). The usage of reversed items is highly recommended by test developers to combat response style bias (Prieto & Delgado, 1996).

When evaluating a likert scale comprising of multiple likert items, the first step is to reverse code the reversed items. The likert items that have been reversed coded, the process and the formula used to reverse code these likert items is tabulated and explained in Appendix 7.2.

### **3.2.2 Calculation of Likert Scales**

#### **3.2.2.1 Entrepreneurial Intention**

The second step taken in order to calculate the Entrepreneurial Intention likert scale was combining the six likert items in to create one variable. Likert items are ordinal in nature and the best method to combine them has been an ongoing debate in existing academic literature, (Boone & Boone, 2012) which has led to the development of different schools of thought on this topic. The recommended method for combination of the likert items has been done by taking the sum of the likert items and this is done because “if the average (or sum) of individual items is calculated, the errors of meas-



urement are assumed to average approximately zero” (Spector, 1992). For this research paper, the sum of the likert item scores were used to measure entrepreneurial intention as one variable.

### **3.2.2.2 Five-Factor Model**

All the factors of the Five-Factor Model were scored on a 5-point Likert scale, with four of the five factors being made up of 4 Likert Items each, with only openness to experience comprising of 5 likert items. As done with entrepreneurial intention, the sum of the likert item scores were used in order to measure the five factors of the Five-Factor Model (*openness to experience, conscientiousness, extroversion, agreeableness, neuroticism*).

### **3.2.3 Standardizing Variables**

The third and final transformation that needed to be carried out prior to analyzing the data is the standardization of variables. For the purpose of the analysis in this research paper, the dependent, independent and control variables were all standardized to fit on the same scale.

The standardization of variables i.e. using z-scores is the process that enables the comparison of multiple variables on a single scale. This enables us to compare two variables even if they were measured differently and regardless of the type the variables are. The formula for z-score is given below:

$$z = (x - \mu) / \sigma$$

$$x = \textit{observation} \quad \mu = \textit{mean} \quad \sigma = \textit{standard deviation}$$

### **3.2.4 OLS Multiple Regression Model**

The purpose of the research is to identify the relationship that exists between entrepreneurial intention and personality traits. In order to successfully do this, the method

to be used is an Ordinary-Least Squares (OLS) multiple regression analysis. The OLS multiple regression analysis using standardized variables provides a unique model that not only identifies whether there is a significant effect of the 5 personality traits (Five-Factor Model) on entrepreneurial intention, but also identifies whether it is a positive or negative effect. Furthermore, the implementation of multiple regression enables the addition of control variables.

Therefore, OLS multiple regression will be used in order to test the hypotheses for the purpose of answering the research question.

### **3.2.5 Ordered Logistic Regression Model**

For the purpose of this research paper, the ordered logistic regression will be conducted in order to analyze the robustness of the OLS multiple regression model. There exists multiple pseudo  $R^2$  measurements that have been created for the purpose of measuring goodness-of-fit for the ordered logistic regression model, (McKelvey & Zavoina, 1975; Cox & Snell, 1989) however the most commonly recommended one is McFadden's pseudo  $R^2$  (McFadden, 1973) due to its relative ease of use and interpretation. A value between 0.2 – 0.4 is said to indicate a strong goodness-of-fit when using McFadden's pseudo  $R^2$  (McFadden, 1977).

The robustness of the OLS multiple regression model will be established by comparing the signs of the coefficients of the independent variables in the OLS multiple regression model against those in the ordered logistic regression model. This enables us to observe whether they have the same effect on the dependent variable (whether they are positive or negative in nature). If the independent variable coefficients of the OLS multiple regression model are in the same direction as the ordered logistic regression model, the OLS multiple regression model is said to be robust in nature.

## 4. Results

In order to answer the research question of “To what extent do personality traits influence entrepreneurial intentions?”, five hypotheses were formulated; **H1:** Openness positively influences entrepreneurial intention; **H2:** Conscientiousness positively influences entrepreneurial intention; **H3:** Extraversion positively influences entrepreneurial intention; **H4:** Agreeableness negatively influences entrepreneurial intention; **H5:** Neuroticism negatively influences entrepreneurial intention. To identify the effect of personality on entrepreneurial intention, each factor of the Five-Factor Model was analyzed using both the OLS multiple regression model and the ordered logistic regression model. Therefore, a total of 10 different models were used in order to analyze the hypotheses using OLS multiple regression while testing for the robustness of this model using the ordered logistic regression model.

In order to test the first hypothesis, both OLS multiple regression analysis and ordered logistic regression analysis were conducted with ‘entrepreneurial intention’ as the dependent variable and ‘openness to experience’ as the independent variable. As previously mentioned, the control variables used are ‘level of study’, ‘entrepreneurship education’ and ‘family business’. Table 6 presents the results of both the models analyzing the effect of ‘openness to experience’ on ‘entrepreneurial intention’. The results showcase that both the models are highly significant in nature ( $\text{Prob} > F = 0.00$  &  $\text{Prob} > \text{Chi}^2 = 0.013$ ) and that the independent variables reliably predict the dependent variable (entrepreneurial intention) in both the models. Furthermore, this indicates a high level of goodness-of-fit for the OLS multiple regression model. The OLS multiple regression model has an adjusted  $R^2$  value of 0.128 implying that the model significantly explains 12.8% of the variation in entrepreneurial intention. Conversely, the pseudo  $R^2$  value for the ordered logistic regression model is only 0.024, showcasing a low level of goodness-of-fit when compared to the recommended value of 0.2 – 0.4 (McFadden, 1975). However, the goodness-of-fit affects only the coefficient values, but not the direction (sign) of the independent variable

coefficients. For the purpose of this research paper, the direction of the independent variable coefficients of the ordered logistic regression are compared against those of the OLS multiple regression model to establish robustness. Since the ordered logistic regression model is used only to check the robustness of the OLS multiple regression model, a low goodness-of-fit does not affect the analysis of this research paper.

Variable	Entrepreneurial Intention		
	OLS Multiple Regression	Ordered Logistic Regression	
Openness to Experience	0.291* (0.079)	0.513* (0.155)	
Level of Study	-0.036 (0.078)	-0.065 (0.141)	
Entrepreneurship Education	-0.172* (0.079)	-0.365* (0.147)	
Family Business	-0.185* (0.078)	-0.383* (0.146)	
F-value	6.47	LR Chi <sup>2</sup>	24.90
Prob > F	0.000	Prob > Chi <sup>2</sup>	0.000
R <sup>2</sup> (adj.)	0.128	Pseudo R <sup>2</sup>	0.024
N	150	N	150

\*p-value < 0.1

**Table 6: Effect of Openness to Experience on Entrepreneurial Intention**

In the OLS multiple regression model, 'openness to experience', 'entrepreneurship education' and 'family business' is significant at a 10% significance level. The results of the OLS multiple regression model show that an increase by 1 unit in the openness of an individual leads to an increase of 0.291 units in an individual's intention to be an entrepreneur when holding all the control variables constant. This implies that in-

dividuals who are more open to experience will tend to have a higher degree of entrepreneurial intention. The robustness of the OLS multiple regression model is reaffirmed by the results of the ordered logistic regression model. All the independent variables in both the models have the same direction (sign) and is evidence of the robustness of the OLS multiple regression model. The ordered logistic regression also shows similar significance to the OLS multiple regression model regarding the rest of the variables. This result bestows a strong level of statistical support for Hypothesis 1. Since 'openness to experience' has a significant positive effect on 'entrepreneurial intention', Hypothesis 1 is accepted.

For the purpose of testing the second hypothesis, both OLS multiple regression and ordered logistic regression models were run and analyzed with 'entrepreneurial intention' as the dependent variable and 'conscientiousness' as the independent variable. Furthermore, the same control variables of 'level of study', 'entrepreneurship education' and 'family business' are used. Table 7 presents the results of both the models analyzing the effect of 'conscientiousness on 'entrepreneurial Intention'. As shown in Table 7, both the models are significant ( $\text{Prob} > F = 0.000$  &  $\text{Prob} > \text{Chi}^2 = 0.000$ ), implying that the independent variables reliably predict the dependent variable. On the other hand, the adjusted  $R^2$  value is 0.06, implying that the OLS multiple regression model significantly explains 6.0% of the variation in entrepreneurial intention. However, the pseudo  $R^2$  value for the ordered logistic regression model is only 0.016. This implies that there is a low level of goodness-of-fit for the ordered logistic regression model when compared to the recommended values of 0.2 – 0.4 (McFadden, 1975). As the ordered logistic regression model is used only as a robustness check, a low goodness-of-fit level does not affect the analysis of this research paper.

In the OLS multiple regression model, only 'family Business' is significant at a 10% significance level whereas 'conscientiousness' is not significant at all. This implies that conscientiousness does not have any effect on entrepreneurial intention. It is observed that the independent variables in both the ordered logistic regression and

OLS multiple regression models have the same direction (sign) & are similarly significant at a 10% significance level. This serves as evidence of the robustness the OLS multiple regression model. The statistical results showcase that conscientiousness has no significant effect on entrepreneurial intention and hence, Hypothesis 2 is rejected.

Variable	Entrepreneurial Intention		
	OLS Multiple Regression	Ordered Logistic Regression	
Conscientiousness	0.126 (0.083)	0.244 (0.153)	
Level of Study	-0.080 (0.081)	-0.132 (0.141)	
Entrepreneurship Education	-0.096 (0.082)	-0.218 (0.144)	
Family Business	-0.203* (0.081)	-0.411* (0.146)	
F-value	3.39	LR Chi <sup>2</sup>	16.22
Prob > F	0.011	Prob > Chi <sup>2</sup>	0.003
R <sup>2</sup> (adj.)	0.060	Pseudo R <sup>2</sup>	0.016
N	150	N	150

\*p-value < 0.1

**Table 7: Effect of Conscientiousness on Entrepreneurial Intention**

For the purpose of testing the third hypothesis, both OLS multiple regression and ordered logistic regression were used with 'entrepreneurial intention' as the dependent variable and 'extroversion' as the independent variable. Additionally, the same control variables of 'family business', 'level of study' and 'entrepreneurship education' were used. Table 8 presents the results of both the models analyzing the effect of 'extroversion' on 'entrepreneurial intention'. The results clearly showcase that the

both the models are significant when tested at a 10% level of significance ( $\text{Prob} > F = 0.007$  &  $\text{Prob} > \text{Chi}^2 = 0.001$ ). This implies that independent variables reliably predict the dependent variable in both the models. In the case of the OLS multiple regression model, this also indicates a high level of goodness-of-fit. However, the adjusted  $R^2$  value is 0.067 indicating that the OLS multiple regression model explains 6.7% of the variance in entrepreneurial intention. On the other hand, the pseudo  $R^2$  value for the ordered logistic regression model is only 0.018, denoting a low level of goodness-of-fit for the ordered logistic regression model as the recommended value is 0.2 - 0.4 (McFadden, 1975). However, ordered logistic regression model is used only for the purpose of reaffirming the robustness of the OLS multiple regression model and therefore, a low goodness-of-fit does not affect the analysis of this research paper.

In the OLS multiple regression model, 'Extroversion' and 'Family Business' are significant at a 10% significance level. Therefore, for each unit increase of extroversion, entrepreneurial intention increases by 0.143 when holding the control variables constant. The positive and significant coefficient of extroversion is evidence that individuals that show higher levels of extroversion will tend to have a higher degree of entrepreneurial intention.

Furthermore, all the independent variables in both the models have the same direction (sign) and is evidence of the robustness of the OLS multiple regression model. The ordered logistic regression differs from the OLS multiple regression model in terms of the significance of variables here as 'entrepreneurship education' is significant in the former but not the latter. The results are indicative of a strong level of statistical support for Hypothesis 3. As 'extroversion' has been observed to have a significant positive effect on entrepreneurial intention, Hypothesis 3 is accepted.

Variable	Entrepreneurial Intention		
	OLS Multiple Regression	Ordered Logistic Regression	
Extroversion	0.143* (0.079)	0.292* (0.143)	
Level of Study	-0.070 (0.080)	-0.124 (0.142)	
Entrepreneurship Education	-0.118 (0.080)	-0.274* (0.142)	
Family Business	-0.220* (0.080)	-0.430* (0.145)	
F-value	3.66	LR Chi <sup>2</sup>	17.84
Prob > F	0.007	Prob > Chi <sup>2</sup>	0.001
R <sup>2</sup> (adj.)	0.067	Pseudo R <sup>2</sup>	0.018
N	150	N	150

\*p-value < 0.1

**Table 8: Effect of Extroversion on Entrepreneurial Intention**

In order to answer the fourth hypothesis, both OLS multiple regression and ordered logistic regression models were tested with 'entrepreneurial Intention' as the dependent variable and 'agreeableness' as the dependent variable. The control variables used for this analysis are 'level of study', 'entrepreneurship education' and 'family business'. Table 9 presents the results of both the models used to analyze the effect of 'agreeableness' on 'entrepreneurial intention'. The results clearly showcase that both the models are highly significant at a 10% level of significance. (Prob > F = 0.017 & Prob > Chi<sup>2</sup> = 0.004) This indicates that the independent variables in both the models reliably predict the dependent variable. Furthermore, the adjusted R<sup>2</sup> value is 0.054, implying that the OLS multiple regression model significantly explains 5.4% of the variation in entrepreneurial intention. However, the pseudo R<sup>2</sup> value is only 0.015, indicating a low goodness-of-fit level for the ordered logistic regression model



(McFadden, 1975). However, this stands to be irrelevant for the purpose of this research paper as the ordered logistic regression is used to check the robustness of the OLS multiple regression model.

The results of the OLS multiple regression analysis showcase that only 'family business' is significant at a 10% significance level. In addition to this, 'agreeableness' is not significant at all. This indicates that agreeableness does not have a significant effect on entrepreneurial intention and does not explain any of the variation of entrepreneurial intention in this model.

On the other hand, all the independent variables in both the models have the same direction (sign) and serves as evidence of the robustness of the OLS multiple regression model. The ordered logistic regression & OLS multiple regression model are also similar in terms of the significance of the variables. The statistical results as shown in Table 9 serves as proof that 'agreeableness' has been observed to have no effect on entrepreneurial intention. Hence, hypothesis 4 is rejected.

Variable	Entrepreneurial Intention		
	OLS Multiple Regression	Ordered Logistic Regression	
Agreeableness	-0.091 (0.080)	-0.181 (0.148)	
Level of Study	-0.065 (0.080)	-0.117 (0.141)	
Entrepreneurship Education	-0.119 (0.081)	-0.253* (0.142)	
Family Business	-0.211* (0.081)	-0.427* (0.146)	
F-value	3.12	LR Chi <sup>2</sup>	15.16
Prob > F	0.017	Prob > Chi <sup>2</sup>	0.004
R <sup>2</sup> (adj.)	0.054	Pseudo R <sup>2</sup>	0.015
N	150	N	150

\*p-value < 0.1

**Table 9: Effect of Agreeableness on Entrepreneurial Intention**

With the goal of testing the fifth hypothesis, both OLS multiple regression and ordered logistic regression models were run with 'entrepreneurial intention' as the dependent variable and 'neuroticism' as the independent variable. The same control variables of 'level of study', 'entrepreneurship education' and 'family business' are used when analyzing the effect of 'neuroticism' on entrepreneurial intention. Table 10 presents the results of both the models analyzing the effect of 'neuroticism' on 'entrepreneurial intention'. According to the results, both the models were highly significant at a 10% significance level (Prob > F = 0.013 & Prob > Chi<sup>2</sup> = 0.006) implying that the independent variables reliably predicts the dependent variable in both the models. For the OLS multiple regression model, this also indicates a high level of goodness-of-fit. However, the pseudo R<sup>2</sup> value for the ordered logistic regression model is only 0.014 which indicates a low level of goodness-of-fit (McFadden, 1975). Since the ordered

logistic regression is used only to check the robustness of the OLS multiple regression model, the low level of goodness-of-fit stands to be irrelevant for the purpose of this research paper. On the other hand, the results that the OLS multiple regression model had an adjusted  $R^2$  of 0.058, indicating that the OLS multiple regression model significantly explains 5.8% of the variation in entrepreneurial intention.

Variable	Entrepreneurial Intention	
	OLS Multiple Regression	Ordered Logistic Regression
Neuroticism	-0.114 (0.081)	-0.130 (0.150)
Level of Study	-0.081 (0.081)	-0.146 (0.145)
Entrepreneurship Education	-0.109 (0.081)	-0.244* (0.142)
Family Business	-0.230* (0.081)	-0.435* (0.144)
F-value	3.31	LR Chi <sup>2</sup> 14.44
Prob > F	0.013	Prob > Chi <sup>2</sup> 0.006
R <sup>2</sup> (adj.)	0.058	Pseudo R <sup>2</sup> 0.014
N	150	N 150

\*p-value < 0.1

**Table 10: Effect of Neuroticism on Entrepreneurial Intention**

The results of the OLS multiple regression analysis further illustrate that only 'family business' is significant at a 10% significance level. This statistical result displays that neuroticism does not have a significant effect on entrepreneurial intention and as a result, does not explain any of the variation of entrepreneurial intention in this model. On the other hand, the robustness of the OLS multiple regression model is confirmed when compared to the results of the ordered logistic regression model. All the independent variables in both the models have the same direction (sign) and is evidence

of the robustness of the OLS multiple regression model. The ordered logistic regression & OLS multiple regression model are also similar in terms of the significance of the variables with the exception of 'entrepreneurship education'. According to the statistical results, Hypothesis 5 is rejected as 'neuroticism' does not have an effect on 'entrepreneurial intention'.

## 5. Conclusion

This research paper aimed to answer the question **“To what extent do personality traits influence entrepreneurial intentions?”**. In order to answer this research question, two important realms of academia were explored: Entrepreneurship studies & Personality Traits. Using the dataset collected by Bernoster et al. (2018), this research paper showcases that a significant relationship exists between personality traits and entrepreneurial intention. Using the Five-Factor Model to measure personality traits, five hypotheses were tested using OLS multiple regression models in order to be able to successfully answer the research question. All the models used in this research paper made use of ‘entrepreneurship education’, ‘level of study’ and ‘family business’ as control variables when testing the hypotheses. These control variables were chosen as a result of them being influenced by personality while also holding an influence on entrepreneurial intention. The OLS multiple regression models used to test the hypotheses were observed to be highly significant and hence, reliably predicted the effect of the five factors of the Five-Factor Model on entrepreneurial intention. On the other hand, the ordered logistic regression models used in this research paper showcased low levels of goodness-of-fit. This implies that the independent variable coefficient values are unreliable. However, the low level of goodness-of-fit does not affect the direction of the independent variable coefficients in the ordered logistic regression model. Since the ordered logistic regression model was used to check the robustness of the OLS multiple regression model, the low goodness-of-fit level could be ignored. The analysis conducted showed all the OLS multiple regression models used in this research paper were concluded to be highly robust in nature. This was established by comparing the direction of the coefficients of the independent variables of the OLS multiple regression model against those in the ordered logistic model.

The first hypothesis was accepted and showed that an individual’s open-mindedness and curiosity does lead to the individual having more of an interest and intention

towards starting a business on their own. The results showcased that openness to experience successfully explained 12.8% of the variation in entrepreneurial intention. This result was in agreement with the findings of Zhao & Seibert (2006) showcasing that openness to experience positively influences entrepreneurial intention. The second hypothesis was rejected because it showcased that an individual's ambition, reliability and organizational skills had no influence on their intention to start a business of their own. This result is contradictory to the findings of Brandstätter (2011) who found a significant positive relationship between conscientiousness and entrepreneurial intention. The analysis conducted to test the third hypothesis showcased that there exists a significant positive relationship between an individual's tendency to be social and outgoing and the entrepreneurial intentions exhibited by said individual. Hence, the third hypothesis was accepted. The results showcased that 'extroversion' successfully explained 6.7% of the variation in entrepreneurial intention. Furthermore, this conclusion is in line with that of Zhao & Seibert (2006) where they identified a positive relationship between extroversion and entrepreneurial intention. On the other hand, the analysis conducted to test the fourth hypothesis showed that an individual's tendency to maintain only positive interpersonal relationships had no effect on an individual's intention to become an entrepreneur. Therefore, the fourth hypothesis was rejected. This result is in line with Zhao, Seibert & Lumpkin (2010) & Brandstätter (2011) where the same conclusion was reached. The analysis conducted with the purpose of testing the fifth hypothesis showed that there existed no relationship between an individual's tendency to showcase negative emotions and the entrepreneurial intention exhibited by said individual. Therefore, the fifth hypothesis was rejected. However, this result is different from the conclusion reached by Rauch & Frese (2007) that identified a significant negative relationship between neuroticism and entrepreneurial intention.

Overall, two of the five personality traits of the Five-Factor Model, namely; 'openness to experience' and 'extroversion' were found to have a significant effect on entrepreneurial intention. Both these factors are shown to have a positive influence on entrepreneurial intention with 'openness to experience' explaining 12.8% of the variation

in entrepreneurial intention and 'extroversion' explaining 6.7% of the variation in entrepreneurial intention. Since the Five-Factor Model is a measurement of general personality traits, the analysis conducted showcased that general personality traits reliably explain 19.5% of the variation in entrepreneurial intention.

As with every other study in the realm of academia, this research paper does also face its own set of limitations. First and foremost, this study used a dataset that had a fairly small sample size of 150 students, with all the students studying at Erasmus University and almost all with Dutch Nationality. As a result of this small dataset, the findings are relevant only locally and hence showcases low external validity. Additionally, the participants were all either doing their Bachelor degree or Master degree, showcasing a low variation in their level of education as well as most of the participants being of a similar age. This further showcases how there exists a low variance in the dataset leading to only a localized result. This can be improved upon by obtaining data from multiple universities in order to increase external validity of the analysis. Secondly, the BFI-K instrument used to measure the Five-Factor Model showed a relatively average level of internal reliability for one of the scales (agreeableness), due to the reduced size of the BFI-K. Here, increased detail in the survey was sacrificed for reducing the amount of time it took to complete the survey. This implies that the likert scale used to measure agreeableness would not have effectively measured it due to the low internal reliability. The use of a better instrument could have increased the significance of agreeableness and explained a higher percentage of the variation of entrepreneurial intention. For future research, a strongly recommended instrument to use over the BFI-K would be the FFPI (Five-Factor Personality Inventory) created by Hendriks, Hofstee & De Raad (1999). The FFPI showcases higher levels of internal validity and uses a slightly larger number of likert items that provides more detail without sacrificing the advantages of time efficiency and cost efficiency displayed by BFI-K (Hendriks et al., 1999). Thirdly, one of the key limitations of multiple regression is the existence of Omitted Variable Bias. This is already seen by how 'Gender' is an influential factor when it comes to determining entrepreneurial intention

as well as personality traits. Previous literature has identified that the effect of gender on entrepreneurial intention is clear and showcases how the influence of stereotypes has led to men having a higher degree of entrepreneurial intention as compared to women (Díaz-García & Jiménez-Moreno, 2010) and have also showcased how the differences in personality as a result of gender is higher in developed countries, particularly within Western culture (Costa, P.T Jr, Terracciano & McCrae, 2001; Schmitt, Realo, Voracek & Allik, 2008). This can be improved upon by using different statistical methods that are less affected by omitted variable bias. Finally, the measures used for measuring entrepreneurial intention were short of detail and contained no reversed items, which could have potentially led to a response style bias. This can be built upon by using instruments that have a higher number of likert items to shed more light on the entrepreneurial intention showcased by individuals.



## 6. References

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# 7. Appendix

## 7.1 BFI-K Instrument of Five-Factor Model

### Agreeableness - Likert Items

*I see myself as someone who...*

...is generally trusting.

...tends to find fault with others.

...can be cold and aloof.

...is sometimes rude to others.

**Table: 4-item Likert Scale measurement of Agreeableness**

### Extroversion - Likert Items

*I see myself as someone who...*

...is outgoing, sociable.

...generates a lot of enthusiasm.

...tends to be quiet.

...is reserved.

**Table: 4-item Likert Scale measurement of Extroversion**

<b>Neuroticism - Likert Items</b>
<i>I see myself as someone who...</i>
...gets nervous easily.
...worries a lot.
...is depressed, blue.
...is relaxed, handles stress well.

**Table: 4-item Likert Scale measurement of Neuroticism**

<b>Conscientiousness - Likert Items</b>
<i>I see myself as someone who...</i>
...does things efficiently.
...does a thorough job.
...makes plans and follows through with them.
...tends to be lazy.

**Table: 4-item Likert Scale measurement of Conscientiousness**

<b>Openness to Experience - Likert Items</b>
<i>I see myself as someone who...</i>
...values artistic, aesthetic experiences.

<b>Openness to Experience - Likert Items</b>
...is curious about many different things.
...has an active imagination.
...is ingenious, a deep thinker.
...has few artistic interests.

**Table: 5-item Likert Scale measurement of Openness to Experience**

## 7.2 Reverse Coding

<b>Item Factor</b>	<b>BFI-K Reversed Items</b>
<i>I see myself as someone who...</i>	
Agreeableness	...tends to find fault with others.
Agreeableness	...can be cold and aloof.
Agreeableness	...is sometimes rude to others.
Extroversion	...tends to be quiet.
Extroversion	...is reserved.
Neuroticism	...is relaxed, handles stress well.
Conscientiousness	...tends to be lazy.
Openness to Experience	...has few artistic interests.

**Table: Reverse Coded Likert Items**

As an example, the personality trait of extroversion is measured with the use of 4 different likert items, out of which two of the four items are reversed; 'I am someone

who tends to be quiet', 'I am someone who tends to be reserved'. The two other items are regular in nature; 'I am someone who is outgoing and sociable', 'I am someone who generates a lot enthusiasm'. In order to be able to measure the personality trait of extroversion, the reverse items need to be reverse coded. Reverse coding essentially reverses the likert scale for the reversed items. For example, if an individual said 'Disagree' (2) on a reversed item, after reverse coding the item to convert it to a regular item, the new score on the likert scale is calculated using the formula given below:

$$\text{ReverseCodedScore} = (\text{High} + \text{Low}) - \text{ObservedScore}$$

Considering that the likert item is scored on a 5-point scale, High = 5, Low = 1 & the observed score = 2. Plugging this into the formula above results in:

$$\text{ReverseCodedScore} = (5 + 1) - 2$$

$$\text{ReverseCodedScore} = (6) - 2$$

$$\text{ReverseCodedScore} = 4$$

The BFI-K Instrument consists of 21 items used to measure personality traits in the Five-Factor model. Out of the 21 items, 8 are reversed items. Therefore, these 8 reversed items will be reverse coded prior to the analysis.