

# **Comparative Profiling of Female and Male Entrepreneurship Using Empirical Evidence: A Meta-Analysis Examining the Relationships Between Gender, Personality Profiles, Ethics, and Successes of Entrepreneurs and Startups**

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*Are there any noticeable differences among entrepreneurs who founded small businesses and their successes or failures based on their ethical intentions, gender, personality profiles, and leadership styles? Are female entrepreneurs who founded small businesses more likely to succeed than their male counterparts? Do personality characteristics impact decisions and intentions of an individual to become an entrepreneur? Do female entrepreneurs differ from male entrepreneurs in regard to the big five personality attributes? This meta-analysis includes evidentiary support from over 50 prior research articles as well as some qualitative analyses further analyzing over twenty research articles to gain fresh insights from entrepreneurs around the world regarding their entrepreneurial successes and failures of small business startups. It concludes that female entrepreneurs are more likely to have ethical intentions in general across a variety of geographies and landscapes, and, in general, entrepreneurs with ethical intentions are more likely to succeed. The second conclusion is that personality constructs play an essential role in both the decision to become an entrepreneur and in overall entrepreneurial performance.*

*Keywords: entrepreneur, gender, intentions, leadership, personality, success, ethics, startup, business, manager, risk, agreeableness, neuroticism, openness, conscientiousness, extraversion*

## INTRODUCTION

The twenty first century is a time of technological advancement and rising male and female entrepreneurship. However, recent research shows that in the United States 50% of small business startups fail in the first 5 years (Yang, 2015). For years researchers have been analyzing the different reasons for success and failure among new startups and the specific differences in entrepreneurial traits. The literature review portion of this research paper will identify what personality profiles and business intentions state about the risk preferences, opportunities, confidence, motivations, leadership styles that will ultimately lead to the success or failure of male or female entrepreneurs and their start up organizations. With the identifications of each variable's influence on success the research will transition into answering the question: Are there changes that can be made by entrepreneurs which would ultimately result in the success of a business that would have otherwise failed?

This research further investigates the differences in male and female entrepreneurs. In the past, men have dominated the workforce and have been the face of entrepreneurship. While many may assume the second to still be true, statistics show business has changed. Today, studies show that women own 42% of the small business startups (Emrich, 2015). The motivation for furthering the research of the differences in male and female entrepreneur traits and their success or failure is to identify the areas of weakness that result in failure or reduced profit, and the areas of strength that result in success. For this research we focused on gender, leadership traits, and ethical intentions of small business startups. Results and findings of this research could benefit both male and female small business startups around the world as well as influence future entrepreneurial business startup plans. This study is an in-depth meta-analysis into the past research of entrepreneur demographics, personalities and intentions.

Research from the last twenty years, 2000 – 2020, was gathered and reviewed for this analysis. Older data was included if deemed necessary and relevant but was otherwise avoided in the attempt to review articles that examined current twenty first century entrepreneurship. Research analyzed in this report was the result of studies conducted in countries around the world and therefore this analysis is applicable to all populations. Sources of this data include many different well-known journals and worldwide universities including but not limited to the Journal of Developmental Entrepreneurship, Gonzaga University, Walden University, Journal of Business Ethics, Journal of Small Business Management, Hong Kong University Press, Johnson & Wales University. Research from the sources include in depth reviews of a variety of journal articles with information gathered from many different types of research including qualitative, quantitative, exploratory, explanatory, descriptive, longitudinal, fundamental and more. Our research aims to answer the following questions:

1. Does the leadership style and philosophy of entrepreneurs impact their overall ethical intentions? How does leadership in general impact the intentions of individuals to become entrepreneurs and their overall entrepreneurial success?
2. Does gender and personality profile impact the overall success of startups and entrepreneurial ventures founded with ethical intentions?
3. Can gender, personality, and ethical intentions determine the probability of startup success?
4. Do personality characteristics impact decisions and intentions of an individual to become an entrepreneur, and if so, which of the Big-Five Model traits can have a positive effect on becoming a successful entrepreneur?
5. Do entrepreneurs and non-entrepreneurs differ in regard to the Big Five personality factors? If so, which factors have a positive relation to becoming a successful entrepreneur?
6. Do female entrepreneurs differ from male entrepreneurs in regard to each of Big Five personality factors and if so, which factor more relate to male and which to female entrepreneurs?

## LITERATURE REVIEW

### **Gender and Startup Success**

Gender has often been cited as an influential factor that determines the success of startups (Kepler & Shane, 2007; Berger & Kuckertz, 2016; Kanze, Huang, Conley, & Higgins, 2018; Swail & Marlow, 2018; Sullivan & Meek, 2012). The role gender plays on the outcome of startup success has been widely researched. These studies have identified various influences of startup success with findings suggesting variances in motivation, startup capital, risk aversion, and industry preferences as contributors for the differences (Sullivan et al., 2012; Kepler & Shane, 2007; Kanze et al., 2018; Coleman & Robb, 2009). The differences can be expressed across multiple key performance indexes such as sales, growth, and net income (Kepler & Shane, 2007; Coleman & Robb, 2009). The combination of these gender preferences clearly identifies influence between genders and startup success but it is important to distinguish if these differences are due to gender preference or rooted in gender itself. When controlling for these gender preferences, Kepler and Shane found that gender alone does not affect startup performance and that the variances in startup performance metrics stem from gender preferences within entrepreneurial ventures (2007).

### *Entrepreneurial Motivation*

Research has shown that male and female entrepreneurs have different sources of motivation for starting their own business. Male entrepreneurs primarily seek to start their business for the prospect of financial gains whereas women are more likely to start their business for greater schedule flexibility and for increased ability to spend more time with their family (Kepler & Shane, 2007; Sullivan & Meek, 2012). Additional research into this subject has found that women are more likely than men to begin a business with social motivations (Berger & Kuckertz, 2016). The differences found in the motivation for starting a business can have a variety of implications for the structure, size, and success of the business, thus contributing to additional variances found linking gender and startup performance metrics. Motivation also has the potential to influence the size of the startup, as male startups have been found to have greater growth than female startups (Coleman & Robb, 2009). Female entrepreneurs could be less growth oriented if their motivation was not as strongly linked to financial gain.

### *Risk Preference*

Risk preference has often been cited as a clear difference between male and female entrepreneurs. Women have a greater risk aversion than men this has also been found to carry over to business decisions (Kepler & Shane, 2007; Coleman & Robb, 2009; Berger & Kuckertz, 2016). Female entrepreneurs' preference for lower risk influences their decision to seek out business opportunities that also carry lower risk. Men have been found to pursue high risk-to-return business opportunities whereas women are more likely to pursue lower risk-to-return business opportunities (Kepler & Shane, 2007, Dawson & Henley, 2018). These risk preferences can influence the approach startups by steering women toward industries that have a lower risk-to-return. This additional can impact startup growth if higher risk decisions are needed to accelerate growth. Combined with motivational preferences and risk aversion, women entrepreneurs could prefer to start smaller firms that would allow them to have more control over the business as an attempt to mitigate risk (Coleman & Robb, 2009). This would also impact their need for smaller quantities of startup capital and also influence where this startup funding originates.

### *Startup Capital*

Startup capital has substantial implications for startup success. Research has found that female entrepreneurs start businesses with notably lower amounts of startup capital than male entrepreneurs (Coleman & Robb, 2009; Kanze et al., 2018). This research has pointed to multiple contributing reasons to this difference and has been divided on if this difference is due to female entrepreneurs seeking lower amounts of startup capital than male entrepreneurs or if there are gender discrimination factors that prevent women for securing the same level of startup funding as men. Coleman and Robb found that female entrepreneurs finance their startups differently than male entrepreneurs with women securing a higher

amount of financing through personal funding sources rather than external funding sources (2009). Sources of startup funding can contribute to the difference in overall startup financing due to limitations of funding capabilities of each source. This research has also noted that women seek an overall lower quantity of funding for their startups (Coleman & Robb, 2009). This could be attributed to the industry variation in male and female startups thus requiring women to require lower levels of funding.

Research has found that when examining variations in funding allocation from women and men requesting similar amounts of capital, women will receive less capital from investors. Access to venture funding sources has been linked to gender bias found in the interview process used by investors to evaluate the startup potential and determine if and how much they would want to invest in the startup. The style of question posed in these interviews to male and female entrepreneurs is found to have substantial impacts on the quantity of financing that was offered by investors. The gender bias negatively impacts the availability of venture capital funding for women. The questions asked to female entrepreneurs during the interview process were prevention-oriented whereas the questions provided to male entrepreneurs were promotion-oriented questions thus eliciting the same orientation response. Prevention-oriented responses were found to significantly limit the quantity of funding allocated by investors. The outcome of this bias leads female entrepreneurs to receive significantly lower financing opportunities than male entrepreneurs (Kanze et al., 2018).

### *Industry Preference*

Research examining the role of gender and industry preference has noted distinct differences between men and women entrepreneurs (Kepler & Shane, 2007; Sullivan & Meek, 2012; Berger & Kuckertz, 2016; Coleman & Robb, 2009). Women led startups are more likely to be concentrated in the retail and service industries whereas male led startups are primarily concentrated in the technology, engineering and manufacturing (Kepler & Shane, 2007; Berger & Kuckertz, 2016). Industry preference can have strong impacts on business growth, success, and size. Female startups typically are less capital intensive due to the industry of their startup (Kanze et al., 2018). This can also account for the size difference of firms started by women, who typically have smaller firms. These firms are smaller in terms of sales, number of employees, and firm assets (Coleman & Robb, 2009; Kepler & Shane, 2007).

### **The Big Five Personality Factors and Entrepreneurship**

Understanding entrepreneurship and how to create new businesses has a lot to do with the personality traits of entrepreneurs. They play an important role in developing theories of the entrepreneurial process, including such areas as entrepreneurial career intentions (Zhao, Seibert, & Hills, 2005), entrepreneurial cognition and opportunity recognition (Ardichvili, Cardozo, & Ray, 2003), entrepreneurial role motivation and new venture survival (e.g., Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004).

Past research on entrepreneurial personality represents a gap in entrepreneurship literature because it failed to clearly distinguish the unique contributions of entrepreneurs as persons to the entrepreneurial process (Mitchell et al. 2002). In this study, we will try to re-examine “the people side of entrepreneurship.” Also, the literature is often unclear as to whether individuals with a given set of personality traits selected into entrepreneurship, or whether individuals developed the traits endogenously after becoming entrepreneurs. This paper intends to identify and examine the entrepreneurial traits through a literature review.

Entrepreneurship is an intentional process. Humans do not engage in entrepreneurship by accident; they do it intentionally as a result of choice (Dehkordi et al., 2012). Entrepreneurial intention is described as the efforts of a person to carry out entrepreneurial behavior, and it has proven to be a primary predictor of future entrepreneurial behavior (Rashid et al., 2012).

Prior entrepreneurial personality-based research was generally found that there was little correlation between entrepreneurship and psychological features such as the Big Five personality characteristics. According to (Baron, 1998) personality trait approach was evaluated as being unable to identify reliably a trait that would characterize entrepreneurs and distinguish them from other business-people. Besides, (Stewart et al., 1998) claimed that the role of psychological factors in entrepreneurship remains unclear.

Shaver and Scott (1991) related only one trait (achievement motivation) to new venture creation. Hatten (1997) also claimed that personality characteristics could not help predicting entrepreneurship success.

Entrepreneurship researchers also neglected the observation of the psychologists Howard and Howard (1995), who identified a pattern based on the Big Five personality characteristics. They labeled it as a sample career of the entrepreneur, who is a person who can be categorized as scoring high on Openness, Conscientiousness and Extraversion, and average on Agreeableness. Some have argued that the theories and methods used in entrepreneurship personality research may be the causes of the lack of progress seen in this research area (Robinson et al., 1991; Sexton & Bowman, 1986; Shaver & Scott, 1991; Stewart et al., 1998).

Failure to identify the relationship between traits and entrepreneurs might be driven by the fact that research mainly focused on single characteristics, like achievement motivation. The call for operating more reliable, valid, and comprehensive measures of personality in order to explain success and failure in entrepreneurship research (Johnson, 1990) was not yet answered broadly. Only a few attempts have determined the fruitfulness of the Big Five approach for entrepreneurship research. For example, Singh and De Noble (2003) investigated the relationship between the Big Five personality characteristics and student views of self-employment, and Zhao and Seibert (2006) compared entrepreneurs and managers in a meta-analytical review of the big five personality dimensions.

Personality traits can be conceptualized as a distinct set of behavioral patterns that guide the way people think, act, and feel (Junior, 2016). Recent meta-analytic research has reported a strong association between personality traits and entrepreneurship (Brandstatter, 2011). The research on entrepreneurship agrees that focusing on personality traits helps people to understand entrepreneurs better (Obschonka et al., 2017b).

This study aspires to evaluate published entrepreneurship literature reviews in order to establish clear links or relationships between personality characteristics of entrepreneurs, their behaviors, and the subsequent success of startups.

In this study, we will investigate the psychological determinants of entrepreneurial startup decisions and intentions:

- by describing the Big-Five Personality Model and its recent applications to business research
- by contrasting entrepreneurs and non-entrepreneurs as regards the Big Five personality factors; and
- by comparison of female entrepreneurs to male entrepreneurs on each of Big Five personality factors.

### *The Big Five Personality Model*

The Big Five Personality Factors and Entrepreneurship The initial classification efforts regarding personality characteristics are evidenced in the Allport and Odbert (1936) research. They classified around 4,500 dictionary words that describe personality characteristics (Ryckman, 2000). Cattell (1943) reduced this set of traits to 35 variable categories and later (Cattell, 1945) to 12 factors. Norman (1967) identified five primary factors. Goldberg (1981, 1990) found and labeled the Big Five factors: Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Intellect. The Big Five factors relabeled so that the first letters of the five factors are O+, C+, E, A-, N-, known as Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Johan & Srivastava, 1999). The Big Five model is a multidimensional approach towards defining an individual's characteristics, patterns of thinking, behavior, feeling, and how they respond to environmental changes in terms of five dimensions.

Summarized traits characteristics could be found in [Appendix A - Table 1: Overview of the Big-Five personality traits.](#)

### *The Big Five Personality Model, Its Recent Applications to Business Research, and the Impacts of Personality Characteristics on the Intention to Become an Entrepreneur*

The theories and the conclusions are generated based upon empirical findings of the Big Five Model and previous research regarding similarities among and differences between traits on the tendency to become entrepreneurs. There is one outcome for each of the five factors.

**Openness to Experience.** As opposed to closed-mindedness, this characterizes individuals who are open to innovative ideas and experiences. They also show independence in judgments, autonomy, and the tendency toward action (Woodman, Sawyer, & Griffin, 1993). Entrepreneurship includes the creation of value through innovation and the seizing of entrepreneurial opportunities and the creation of something new (Hisrich, Peters, & Shepherd, 2005). Newness and originality lie at the heart of entrepreneurship, which can be considered a behavioral phenomenon or a process of emergence (Gartner, Bird, & Starr, 1992). Entrepreneurs pursue opportunities and transform ideas into profitable businesses. Recognizing business opportunities can be considered one of the essential tasks in which entrepreneurs are engaged in the entrepreneurial process, and also the most fundamental task at the beginning of new venture creation. Therefore, opportunity recognition represents the starting point of the entrepreneurial process (Baron, 2007). (Alvarez & Barney, 2007; Baron, 2007) has stressed the importance of someone being open to new ideas, ready and receptive to the signals in order to perceive an opportunity. The discovery and exploitation of possibilities, concepts, inventions are integral parts of the entrepreneurial process (Shane & Eckhardt, 2005; Sarasvathy et al., 2005). Some people are more insightful when it comes to recognizing business opportunities and therefore have more possibilities to succeed. (Alvarez & Barney, 2007) believes that entrepreneurs differ from non-entrepreneurs in their ability to see and exploit opportunities.

Moreover, Openness drives occupational success in dyadic job-settings, which may increase the abilities of entrepreneurs to negotiate financial or supply contracts. In turn, this might be helpful for maintaining entrepreneurial status. People that are over proportionally open are comparatively better in performing decisions after the task environment changed (LePine et al. 2000). In this respect, Openness could be strongly beneficial in managing a venture if the entrepreneur has to adjust her strategy to a changing environment. Also, individuals scoring high on Openness to experience have broad intellectual interest with a personal and non-confirming way of thinking when comparing to individuals score low on Openness to experience, which prefer for familiarity and narrow intellectual focus (Migliore, 2011). Based on the above findings, we propose the following:

***Proposition 1: The openness factor positively related to entrepreneurship.***

**Conscientiousness.** This relates to socially prescribed impulse control that facilitates task and goal-orientated behavior. Typical traits of this factor are efficiency, following norms and rules, and planning, organizing, and prioritizing tasks (John & Srivastava 1999). Individuals who high on Conscientiousness take personal responsibility for their decisions, prefer decisions involving a moderate degree of risk, dislike repetitive, routine work, and are interested in actual knowledge of the results of decisions. They are more cautious and adhere strictly to their moral obligations, set clear goals, and strive for achievement (Mount & Barrick, 1995; Ryckman, 2000). Entrepreneurs must be high on Conscientiousness since they need to be organized and deliberate to achieve their goals. They also need to be persistent and put in the hard work that is necessary to overcome obstacles like obtaining financing or resolving cost overruns associated with the venturing process (Locke & Baum, 2007). Conscientiousness was found to be a strong predictor of occupational success over different professions and different success measures (Hurtz & Donovan 2000, Barrick et al 2001).

Moreover, the performance of sales-people, managers, productive teams, and dyadic job-tasks tends to be positively related to this factor (Barrick et al., 1998). Researchers have consistently verified that conscientiousness influences self-efficacy (Lee & Klein, 2002). Analogously, few empirical studies confirmed the positive association between Conscientiousness and the tendency to be a successful entrepreneur. (Zhao & Seibert, 2006) concluded that Conscientiousness has the most robust relationship to the entrepreneurship status (in comparison with the managerial status) among the Big Five personality factors. Based on the above findings, we propose the following:

***Proposition 2: The conscientiousness factor positively related to entrepreneurship.***

**Extraversion.** This indicates an energetic approach toward the social and material world. It is a useful trait for entrepreneurs because they need to spend much time communicating with investors, customers, and other stakeholders to sell all of them on the value of the business (Shane, 2003). Extraverts tend to be assertive and dominant, active, bold, and energetic. Palich and Bagby (1995) found that entrepreneurs tend to be more optimistic than non-entrepreneurs. Extraversion may facilitate the achievement of the goals of a good leader (Zadel, 2006). Howard and Howard (1995) found that the entrepreneurial-type person can be categorized as scoring high on Conscientiousness and extraversion. Empirical research states that people who score high on Extraversion and Conscientiousness are more likely than others to become entrepreneurs (Howard & Howard, 1995; Shane, 2003). Indeed, National Longitudinal Surveys of Youth in the US showed that being outgoing as a child predicts working for one's self in adulthood. (Van Praag & Ophem, 1995). Individuals who scoreless in extraversion like to be in the background and are viewed as less talkative, reserved, and less action-oriented (Migliore, 2011). Based on the above research, we propose the following:

**Proposition 3:** *The extraversion factor also positively related to entrepreneurship.*

**Agreeableness.** Compares a pro-social and communal orientation toward others with antagonism. The agreeableness factor includes traits that can be related to entrepreneurship in both directions. Concerning extrinsic career success, low Agreeableness during childhood was suggested to be beneficial across the lifespan (Judge et al.,1999), while in meta-analytical evidence, it had no influence (Salgado,1997; Barrick et al., 2001). Individuals high on Agreeableness are deemed to be good-natured, diplomatic, and considerate, while in contrast, less agreeable individuals appear to be manipulative, self-centered, and bossy. Agreeable people think about other's interests, and they will try to avoid becoming involved in conflicts. They are also likely to cooperate with others and help others in order to maintain existing relationships (Sung & Choi, 2009). Individuals scoring high on Agreeableness are more adaptive, and individuals scoring less in Agreeableness are reluctant to involve others (Migliore, 2011). Psychologists recognize the possible ambiguity in the agreeableness factor because of its duality in meaning: its content is being pleasing and/or agreeing with others (Ryckman, 2000). Less agreeable individuals tend to have a higher degree of skepticism than others, which allows them to assess business information from a more critical standpoint (Shane, 2003). Empirical research confirms that individuals that have an agreeable nature are less likely to become an entrepreneur because people with this trait are less likely to pursue their egocentrism, drive difficult bargains, or use others to achieve their objectives. (Zhao & Seibert, 2006). Based on the above findings, we propose the following:

**Proposition 4:** *The agreeableness factor negatively related to entrepreneurship.*

**Neuroticism.** This trait contrasts emotional stability and relaxedness with negative emotionality. Emotional stability may be a trait that is important for personal success (Barrick, Mount, & Judge 2001; Rauch & Frese, 2007), which may point to the possibility of a negative relationship between the neuroticism factor (the reverse of emotional stability) and entrepreneurship. People with less emotional stability avoid the situations in which they feel they will fail and lack confidence when navigating the social and task-related risks that are involved with creative attempts (Raja & Johns, 2004). Emotionally stable people have positive views about their tasks and other people, and they are relaxed (Sung & Choi, 2009). People who low on Neuroticism are more likely to start their businesses because entrepreneurs need a high tolerance to stress to cope with the hard work, significant risks, social isolation, pressure, insecurity, and personal financial difficulties that come from starting their businesses (Rauch & Freese, 2007). Besides, Neuroticism is connected to weaker psychological and physiological health (Lahey, 2009), and hence may decrease the physical ability to maintain entrepreneurial status. Entrepreneurs cannot worry excessively and need to be resilient in the face of setbacks when building an organization (Zhao & Siebert, 2006). Furthermore, they usually work in stressful and highly unstructured environments where the separation between family life and work life is often blurred. A variety of researches show that people high on Neuroticism are more likely

to engage in entrepreneurship than others (Zhao & Seibert, 2006). Research has even shown that an 11-year-old child's score on a measure of anxiety, acceptance, and hostility - two dimensions of Neuroticism - can also accurately predict the odds on whether that person will be self-employed at age 33 (Blanchflower & Oswald, 1998). Another study showed that people who had founded their own businesses were more emotionally stable than those who inherited their businesses or had taken them over through marriage (Brandstetter, 1997). Based on the above findings, we propose the following:

**Proposition 5:** *Neuroticism (the reverse of emotional stability) factor may be negatively related to entrepreneurship.*

#### *The Big Five Personality Model: Comparing Entrepreneurs and Managers*

The theories and the conclusions are generated based upon empirical findings of the Big Five Model and previous research on similarities among and differences between entrepreneurs and managers. There is one outcome for each of the five factors.

**Openness.** Entrepreneurs are more open to experience than managers. Researchers have proposed that in the context of a business venture, an entrepreneur is likely to be pulled in to constantly changing organizational environments and new obstacles. Individuals who prosper on challenges and novel environments more likely will come up with creative solutions, novel problems, innovative products, business models, or strategies, and the Openness of entrepreneurs may aid these functions. In contrast, managers are usually selected by their superiors for their skills to execute and carry on high-quality and low-variance results for a given set of directions and are less likely to pursue original solutions. Based on the above findings, we propose the following:

**Proposition 6:** *Entrepreneurs score higher than managers on Openness to experience.*

**Conscientiousness.** Several studies concluded that higher Conscientiousness represents the most significant difference between entrepreneurs and managers (Zhao & Siebert, 2006). Conscientiousness is a combination of goal accomplishment, motivation, and dependability. (Zhao & Seibert, 2006) found out that entrepreneurs and managers are similar in dependability, however, individuals who choose an entrepreneurial path are significantly higher in achievement motivation than managers do (Stewart & Roth, 2007; Collins et al., 2004) reported in their meta-analyses. Furthermore, it is frequently believed that individuals with high achievement motivation appear to seek out environments in which success is attributed to their own efforts, rather than a larger institutional setting in which the management team is responsible for the business successes, and individual effort is not generally recognized. In addition, it seems that potential partners, shareholders, and other stakeholders prefer entrepreneurs whom they judge to be dependable, for example, those who develop detailed plans and strategies and demonstrate the tendency to fulfill their commitments. Based on the above observation, we propose the following:

**Proposition 7:** *Entrepreneurs score higher than managers in all three dimensions on conscientiousness, achievement motivation, and dependability.*

**Extraversion.** On the question of whether entrepreneurs score higher than managers on extraversion, there appears to be a lack of consensus. This trait measures the extent to which an individual is dominant, energetic, active, talkative, and enthusiastic (Costa & McCrae, 1992). (Zhao & Seibert, 2006) have concluded that no positive difference or data emerge in the published literature. (Envick & Langford, 2000), who theorized that entrepreneurs were less extraverted than managers, suggested that many entrepreneurs may opt to run small enterprises from homes to be away from large bureaucracies that require a higher level of sociable interaction. In this area, the definition of "entrepreneur" now differs somewhat as self-employed individuals and growth-oriented founders tend to exhibit very different characteristics. However, most researchers believe that extraversion could be more important for entrepreneurs than managers since entrepreneur's act as advocates for their ideas to the various stakeholder's integral to ensuring these ideas



are realized. This includes investors, business partners, employees, and clients. Whether they are persuading stockholder or an investment banker to back their idea or a client to buy their product or service, entrepreneurs are often playing the role of a salesperson. Moreover, the minimal structure of a new enterprise and the lack of an HR function indicate that the entrepreneur can expect to spend substantial time in direct interpersonal interaction with their employees and partners. Because entrepreneurship appears to require even more direct social communication with external and internal constituents than does the typical role of manager, we believe that Extraversion associated more with entrepreneurs.

**Proposition 8:** *Entrepreneurs score higher than managers on Extraversion.*

**Agreeableness.** Entrepreneurs have been found to have significantly smaller amounts of Agreeableness than managers. Some researchers believe that, because most entrepreneurs eventually become the CEOs of their own enterprises, they do not need to please other people around them; on the contrary, managers must meet the expectations of the superiors. Agreeableness is negatively related to career satisfaction and a salary level in a managerial sample Seibert and Kraimer (2001). Although the adverse effects of Agreeableness appear to predominate for those performing managerial work in established organizations, we expect the negative impact to be even more detrimental for those in an entrepreneurial role. With limited resources resulting in a smaller margin of error financially, and with less access to legal protections, there is a higher likelihood that the entrepreneur will suffer from severe consequences from small bargaining disadvantages than those typically experienced by a manager. Based on the above findings, we propose the following:

**Proposition 9:** *Entrepreneurs score lower than managers on Agreeableness.*

**Neuroticism.** Entrepreneurs have been found to score lower in Neuroticism than managers. Managers work within an established business organization with work processes supported by established organizational practices and procedures. However, entrepreneurs work in a relatively unstructured environment where they have primary responsibility for all aspects of a venture. They work longer hours than do managers and often lack the level of separation between work and life spheres typical of managerial work. They also have a substantial financial and personal stake in the venture. They lack the security of benefits usually provided to middle- and upper-level managers, such as a severance package or an independently funded retirement program. Thus, the work environment, workload, work-family conflict, and financial risk of starting and running a new startup can produce psychological stress beyond that typical of managerial work. At the same time, according to Zhao and Seibert (2006), entrepreneurs are less neurotic than managers, inclining that the entrepreneurs require remarkable self-confidence to take on the risks of starting a venture and resilience in the face of stress. Based on the above findings, we propose the following:

**Proposition 10:** *Entrepreneurs score lower than managers on Neuroticism.*

#### *The Big Five Personality Model: Gender Comparison of Female Entrepreneurs to Male Entrepreneurs on Each of Personality Factors*

The theories and the conclusions are generated based upon empirical findings of the Big Five Model and previous research on similarities among and differences between female and male entrepreneurs. There is one outcome for each of the five factors.

**Openness.** Sexton and Bowman (1990) found that female entrepreneurs desired more autonomy and were more open to new experiences than male entrepreneurs. Costa (2001) found that women score higher than men on the facets of Esthetics and Feelings, whereas men tend to score higher on the Ideas facet (Feingold, 1994; Costa et al., 2001). Fagenson (1993) claimed that female entrepreneurs had a much broader vision involving their desires, including total equality and world peace. Based on the above findings, we propose the following:

**Proposition 11:** *Female entrepreneurs score higher than male entrepreneurs on the openness factor.*

**Conscientiousness (Conscientiousness Factor Determines Impulsiveness Versus Cautiousness).**

According to research theories, women score higher than men on some facets of Conscientiousness, such as dutifulness, self-discipline, and orderliness (Feingold, 1994; Costa et al., 2001). The Orderliness aspect reflects traits associated with maintaining order and organization, including perfectionism (DeYoung et al., 2007). However, these differences are not consistent across cultures, and no notable gender difference has been found in Conscientiousness at the Big Five (Costa et al., 2001). Even though Conscientiousness is associated with ‘femininity’ (Lippa, 1995), no grounds exist to hypothesize a remarkable difference in either direction. ‘Femininity’ describes both females and males. No other hypothesis suggests a difference in gender-related or business research. Based on the above findings, we propose the following:

*Proposition 12: There is no significant difference between male and female entrepreneurs regarding the Conscientiousness factor.*

**Extraversion (Sociability Factor Measures Extraversion Versus Introversion).**

Behavioral research reveals that female entrepreneurs are scoring higher in communication activities than male opponents (Envick & Langford, 1998). Other studies indicate that women are more likely to encourage participation, showing concern, share information, and have excellent interpersonal skills (Rosener, 1990; Eagly, Makhijani, & Klonsky, 1992; Offermann, & Beil, 1992). It has also been found that women score higher than men on Gregariousness, Positive Emotions, and Warmth, contrarily men score higher than women on Assertiveness and Excitement Seeking (Feingold, 1994; Costa et al., 2001). Note that while masculinity is related to extroversion, not all males are considered ‘masculine,’ while not all females are considered ‘feminine’ (Lippa, 1995). Based on the above findings, we propose the following:

*Proposition 13: Female entrepreneurs score higher than male entrepreneurs on the sociability factor.*

**Agreeableness (Agreeableness Factor Measures Team-Orientedness Versus Self-Interest).**

Women always score higher than men on Agreeableness and related measures, such as tender mindedness (Feingold, 1994; Goldberg, 1998; Costa et al., 2001). Female entrepreneurs found to be more supportive; they encourage participation and adopt a democratic style than their male opponents (Tannen, 1991; Offermann, & Beil, 1992;). Smith, Smits, and Hoy (1992) claim that female entrepreneurs actively hire female employees with whom they share similar views. Fagenson (1993) affirm that female entrepreneurs value equality more than their male counterparts. Gender difference is also associated with motivational and behavioral differences. Women tend to have more interconnected and affiliative social groups (Cross & Madson, 1997). From this, it can be drawn that women may be more motivated than men to maintain social and emotional bonds by utilizing more agreeable traits. Based on the above findings, we propose the following:

*Proposition 14: Female entrepreneurs score higher than male entrepreneurs on the agreeableness factor.*

**Neuroticism (Adjustment Factor Determines Confidence Versus Instability).**

Women scored higher than men on Neuroticism, and on most facets of Neuroticism included Withdrawal and Volatility, when measured in terms of raw scores (Costa et al., 2001). At the facet level, women showed higher levels of anxiety, depression, self-consciousness, and vulnerability than men (Costa et al., 2001). This indicates that women tend to associate more with Withdrawal than Volatility (DeYoung et al., 2007). This pattern is compatible with the fact that women are more often diagnosed with anxiety and depression than men (Weissman et al., 1996). Besides, women also score higher than men on related measures not explicitly designed to measure the Big Five, such as indices of low self-esteem (Kling et al., 1999) and anxiety (Feingold, 1994). Anger, or Angry Hostility, is the only facet of Neuroticism in which women do not always exhibit higher scores than men (Costa et al., 2001; Scherwitz et al., 1991). No previous research was found on the adjustment factor and a gender difference. Lippa (1995) found that a low adjustment score was related to ‘masculinity,’ while Marusic and Bratko (1998) found low adjustment relating to ‘femininity.’

Again, however, not all male subjects are considered ‘masculine,’ while not all female subjects are considered ‘feminine.’ Therefore, no rationale exists to hypothesize a substantial difference in either direction. Based on the above findings, we propose the following:

**Proposition 15:** *There is no significant difference between male and female entrepreneurs regarding the adjustment factor.*

#### *The Big Five Personality Factors and Effects of Traits on Entrepreneurs Intentions*

Our study based on a systematic review of prior entrepreneurial literature reviews in order to establish clear links or relationships between personality characteristics of entrepreneurs, their behaviors, and the subsequent success of their enterprises. Results evidence significant differences between entrepreneurs and managers on the four personality characteristics. Entrepreneurs scored higher on Openness, Conscientiousness, and Experience and lower on Neuroticism and Agreeableness. The personality constructs with the strongest relationship to be an entrepreneur were Conscientiousness. There was no difference between entrepreneurs and managers with respect to Extraversion. In gender difference results indicated that female entrepreneurs are notable more open than male entrepreneurs. They are also more adjusted, social and agreeable, but not to a significant degree. Male entrepreneurs are significantly more conscientious than female entrepreneurs, meaning that females are more impulsive when making decisions.

#### *Limitations of the Big Five*

In describing a coherent portrait of the entrepreneur, one should take into consideration the limitations of the Big Five Model. Big Five framework is limited by its focus on the overly general nature of these personality traits. It cannot reliably predict the situation-specific behaviors of entrepreneurs. Also, an understanding of a person’s Big Five personality may not help in understanding which personality traits impact entrepreneurial attitudes and actions (e.g., Kanfer, 1992; Rauch, 2014). Some researchers have now shifted toward creating a multidimensional personality framework that comprises other qualities like locus of control, self-efficacy, innovativeness, and need for achievement.

### **Leadership**

Before considering leadership in the context of entrepreneurship and variables such as gender, the five main personality traits and ethics, we need to lay the foundation by defining leadership and what leadership styles exist.

Oxford English Dictionary defines leadership as the action of leading a group of people or an organization (Leadership, n.d.). Based on the definition, leadership is neither a positive nor a negative concept. The main work on the study and development of the concept of leadership was done by James Burns and Bernard Bass, and their study serves as the basis for understanding leadership and its styles. There’re three leadership styles: transformational, transactional and laissez-faire.

#### *Transformational Leadership*

Transformational leadership enhances the motivation, morale and productivity of followers through various mechanisms. In this model, the leader is a role model for his followers. At the same time, the leader must identify strengths and weaknesses of his followers and set them tasks that can optimize their work (Burns, 1978). The main idea of this leadership style is that both the boss and the subordinate work together to raise each other to improve their morale and motivation. Transformational leadership includes four elements: individualized consideration, intellectual stimulation, inspirational motivation, and idolized influence. Based on these elements, the leader should individually work with each of his subordinates, stimulate and encourage creative initiatives of his followers, provide optimism to people regarding the solution of assigned tasks and instill confidence in them, and be a role model (Burns, 1978).

### *Transactional Leadership*

Transactional leadership style is a leadership style in which the leader achieves the fulfillment of the assigned tasks from his followers through the “carrot and stick” method. Leaders of this type carefully analyze the actions of their subordinates to identify errors and inaccuracies in them. This type of leadership is effective in crisis and emergency situations, as well as when the desired project must be implemented in a predetermined form (Burns, 1978). Transactional leadership includes three elements: contingent reward, active and passive management by expectations. Awards that are given for good work and positive results. Active management means that the leader constantly monitors the work of subordinates, makes changes and corrections before any mistake occurs. Passive leadership involves waiting, observing the work of subordinates from the side until some kind of trouble occurs.

### *Laissez-Faire Leadership*

Laissez-faire leadership is a leadership style characterized by minimal intervention of the leader. Contrary to what happens in other models, the leader relies on his team and allows his members to do what they consider the most suitable in each situation. With this leadership style, the main goal is to create a team that can work independently, without the need for any leadership or intervention from the boss. Therefore, it is believed that employees will act in a way that makes sense to them (Bass, 1985).

Now, we will look at the connection between entrepreneurship and leadership styles.

### *Entrepreneurship in Connection to the Leadership Styles*

In 2016, US Small Business Administration reported that predominant number of companies in U.S. are small businesses, which employ nearly half of the workers in the U.S. private sector and provide 41.2% of the of the payroll in private sector (Howard et. al, 2019). Meanwhile, about 80% of the start-ups and small business fail within a first year and a half (Howard et. al, 2019). So, why did only 2 out of 10 entrepreneurs succeed?

Hemmen et al. conducted a research, based on a sample of 43 countries, using regression analysis to investigate the relationship between innovative entrepreneurship and leadership styles (April 2015). Innovative entrepreneurship concept consists of innovations in product or market, advanced technology and novel organizational designs (Hemmen et al., April 2015). In their research, Hemmen decided that product or service don't require to be revolutionary in the context of innovative entrepreneurship and should just to be new to the market (2015).

Hemmen made a leadership style score, which includes 6 variables: autonomous, charisma, humane, participative, self-protective and team (2015). These variables belong in one way or another to three main leadership styles: transformational leadership, transactional and laissez-faire. Research by Hemmen suggests that transformational leadership might be less significant, in the context of innovation, and that autonomy and freedom play a bigger role (2015).

### **Ethical Intentions of Small Business Startups**

When creating a business plan there are many different goals that an entrepreneur can aim for including but not limited to profit, outreach, innovation, brand recognition, market share, and ethics. Entrepreneurs can decide when starting a business to create a model based on ethical intentions for their customers, their employees, or both. Ethics can be defined as morals that define right, wrong, fair, and unfair (Joyner et al., 2002). Business ethics can be defined as a unique part of ethics that deal with how a business responds to ethical problems in policies, institutions or behaviors and decide what is right or wrong based on their morals (Joyner et al., 2002). Even if it is not the main goal or focus of their business proper business ethics and decisions have become important for the success of entrepreneurs across all business categories for many reasons. One reason for the heightened importance is the increased access to academic literature has increased with the technological revolution and the capabilities of media to share news quickly and efficiently make business misconduct and immorality a potential for worldwide negative attention (Dimitropoulos et al., 2019). This has been seen many times in the last two decades with the larger corporations gaining national and world media attention, such as Enron, BP, Facebook, Wells Fargo, and

pharmaceutical companies. Smaller companies may not face the worldwide backlash, but they do face the same community backlash and negative publicity and may not be able to recover from the negative branding. While customers and branding are vital to a business success ethics have also been found to have the ability to affect employees. Employees who view their superiors as ethical are more likely to make ethical business decisions and organizational business fairness and Corporate Ethical Values (CEV) have discovered as a proven positive influence on both employee performance and commitment (Sharma et al., 2009). Another study determined that small business have the capability to be innovative and creative and this happens best when employees are in a stable and nurturing culture that supports their well-being (Payne & Joyner, 2006).

In the start of the twenty first century many different researchers studied how and if small businesses maintained their ethical standards as they grew. Many of these studies included an in- depth analysis of how the leader, who was usually the entrepreneur, spread ethical intentions throughout the company during periods of growth and whether they succeeded or failed. These studies then went into depth finding correlation between entrepreneurs and determining if there was an underlying causation from personalities or leadership profiles.

One study performed in India recognized that there was a research gap of ethical business intentions and business success or failure and addressed it with data from a study done on ethical business practices (EPB) on the very competitive environment in the Emerging and Start-up Indian Service Sector Corporates. This study by Kanda and Handa (2018) concluded that EBP boost organizational competitiveness and growth of small businesses and states that one possibility of this advantage is the creation of positive mutual relationships between the organization and customers. If customer satisfaction is absent profit is not sustainable and a small business startup in India is less likely to succeed, however, limitations to the study stated that growth and business ethics are separate variables that while are correlated one does not cause the other (Kanda & Handa, 2018). While India shows an advantage for ethics in small business startups this study should be replicated in other parts of the world to further investigate whether the relationship between ethics and business success can be stated using absolute terms and whether that relationship can be extrapolated beyond the service sector. Kanda and Handa (2019) furthered their study and found that Ethical Practices in Services (EPS) positively impact businesses and even in competitive business segments it is important to have ethical practices.

While Kanda and Handa have begun to address the question of ethical intention and success in India there is still a gap in twenty first century research addressing the ultimate success or failure of these entrepreneurs. This research gap includes the likelihood of ethical origins based on gender and personality profiles. This research aims to narrow that gap by answering the question: Is there a noticeable difference in entrepreneurs who founded small businesses with ethical intentions and their success or failure based on gender, personality profiles, and leadership style?

## **SUMMATION HYPOTHESES**

Our study will examine the relationship between gender, personality profile, leadership style, and ethical intention and their impacts on startup success. Previous studies have identified individual impacts of these variables upon the success of startups; however, research has yet to attempt to unify these variables and examine if there are favorable combinations that can predict startup success. Current research has identified gender and ethical intention as influential determinates of startup success.

***Hypothesis 1:** Gender and ethical intention have a positive and significant impact on startup success.*

Research shows that businesses with ethical intentions are more likely to experience small business startup success, and research also shows that women are more likely than men to found a business around ethical origins, therefore further data will support the hypothesis: females who found a business with ethical intentions are more likely to experience success than small business startups founded by men. As stated previously, when controlling for gender preferences, Kepler and Shane found that gender alone does not

affect startup performance and that the variances in startup performance metrics stem from gender preferences within entrepreneurial ventures (2007). Therefore, more importance is placed on the preferences of the individual entrepreneurs rather than the gender of the entrepreneurs when researching success of small business startups. These preferences are vast and include risk, startup capital, and ethics and more. Based on gender of entrepreneurs, females are more likely to start a business with ethical intentions and ethical origins compared to their male counterparts. These ethical intentions and origins can be based on many different factors including ethical business practices, ethical service practices, and ethical social practices. Each of the factors listed place business importance and consideration on the wellbeing and satisfaction of customers, employees, or the community. While these ethical origin practices may differ in terms of who is the business's priority and the impact the business intends to have whether it be internal for employees or external for customers, shareholders, society, or business partners, they will be regarded as ethical origins all the same. Research has shown that regardless of the specific ethical origin, females are more likely than males to focus on and found a small business with ethical origins. One study concluded with a significance of 1.404 that female entrepreneurs are more likely to value ethical business practices such as honesty, integrity, and responsibility, and with a significance of 0.349 they were more likely than male counterparts to value social responsibility towards staff, customers, and society (Ahmad, 2010). Also, as stated previously, businesses founded with ethical origins are more likely to succeed than businesses founded based on goals such as profit, bottom line, brand recognition, or market share. Researchers Kanda and Handa did multiple studies on success and ethical intentions and found that in India businesses were more likely to succeed if founded with ethical intentions due to the positive relationships that they were able to create with partners, employees, and customers as well as the ability to create socially responsible solutions to problems that the companies faced along the course of business (2018). The study also stated that the relationship between growth and ethical service was exponential, where the businesses which implemented more ethics among customers, employees, and business partners saw a positive rate of growth over time (Kanda and Handa 2018).

Knowing that the research states females are more likely to be founders of businesses based on ethical intentions and knowing that businesses founded on ethical intentions are more likely to succeed than those founded for profit or other goals it can be implied then that female startups based on ethical intentions are more likely to succeed compared to male startups. The data and methodology section will dive deeper into the current research done in order to compare relevant studies which will either prove or disprove the stated hypothesis.

### ***Hypothesis 2: Gender has a significant impact on both leadership style and personality traits***

Current research has found that gender and personality traits have a strong link to entrepreneurial ventures. Entrepreneurship is a complex process that involves a combination of diverse skills, traits, tools, and perspectives that anyone can potentially learn and employ. Research often frames differences in entrepreneurial career choice, profit, and success as being related to the absence or presence of certain characteristics and traits. For instance, the Big-Five personality traits that make up the "entrepreneurial personality" are often reported as being: high on Openness, Conscientiousness, Extraversion, and low: Agreeableness and Neuroticism.

Gender differences in entrepreneurial personality also play a specific role. Research shows that female entrepreneurs are significantly more open, sociable, and agreeable than male entrepreneurs. Females scored slightly higher on adjustment. However, male entrepreneurs scored substantially higher on Conscientiousness, meaning that they are more cautious and less impulsive than females. Males are also more group-centered, active, and aggressive than females. Moreover, their social world view is noticeable differing - woman's social world is a network of cooperation while men's social world is a hierarchy of power.

The ethical environment in a company is built by a leader as they are an influential role model in their organization, and they also have an influence in developing his company's values. To ensure the long-term success of their organization, the entrepreneur must be an ethical and effective leader. Ethical leaders know

how to do the ‘right’ thing. It could be challenging to define what ‘right’ is, however, an ethical leader is not afraid to do what they genuinely believe to be right – even if it is unpopular, less profitable, or inconvenient.

Leadership is a process of social impact, which maximizes the efforts of others, toward the achievement of a common goal, in the case of entrepreneurship, it is a business success. Leadership is also a complex skill and is not typically inherent in all people. It is traditionally said that good leaders are born and not made; nonetheless, we believe that good leaders are those who are aware of their personality characteristics and also of their followers. They know which leadership style is to adopt in a specific situation and on which traits they need to work.

To be successful in entrepreneurship, individuals must have excellent negotiating skills as they are dealing daily with suppliers, employees, and customers. This high level of interaction, in many ways beyond what most leaders experience, provides opportunities for the ethically minded business leader to bring benefit to themselves in the form of personal growth as well as contributing to the success of their business.

Several studies have linked personality traits and ethical leadership, providing substantial evidence that personality traits do matter in the prediction of ethical leadership (Kalshoven et al., 2010; Walumbwa & Schaubroeck, 2009). Research agrees that three of the Big Five personality traits, leaders’ Agreeableness, Conscientiousness, and Openness to experience, are positively related to subordinate perceptions of ethical leadership. However, there is no significant relationship between Extraversion and ethical leadership and a negative correlation with the Neuroticism trait.

A recent meta-analysis on the leadership styles of both female and male leaders confirmed that overall, both genders are equally effective. However, there are gender differences such that each gender is more effective in leadership roles that are congruent with their gender. Consequently, women are less effective to the extent that the leadership role is usually masculinized, and they more likely to receive – counteraction for adopting masculine traits. Because of that, women, for example, considered are less effective than men in services providing industries such as military positions but more effective in education, and social service organizations. Additionally, women are substantially more effective in middle management, where interpersonal and mentoring skills are highly valued. In these roles, women are also more likely to utilize Transformational Leadership Style – tying employee self-interest to the goals of the company. While men prefer Transactional Leadership Style – where job performance viewed as a series of transactions to be rewarded or disciplined. Also, women are more cooperative and prefer flat structure; however, men more competitive and prefer hierarchical structure. They also have different focus preferences such that women typically focus on relationships, and men focus on performance.

Few studies found out top competencies desired for effective and ethical leaders, most of them viewed as feminine such as expressiveness, reasonable, loyal, flexible, patient, intuitive, mentor, collaborative, and only a few are viewed as masculine – decisive, confident and resilient.

There is a mismatch between female qualities and the perception of what a leader is. If women are assertive /confident, they are seen as abrasive or arrogant. If women act traditional feminine, they are liked but not respected, deemed too emotional, and soft to be influential leaders.

## **DATA & METHODOLOGY**

### **Methodology**

The theoretical literature proposes several determinants of entrepreneurship selection and performance. The study first summarizes the economic theory on the relationship between entrepreneurship, performance, and variables that affect it, such as ethics, leadership, and personality traits. It then describes the data gathering and the characteristics of the database. The results from the meta-analysis on performance are then compared with the findings for developed economies, and the relationships between entrepreneurship and variables selection are examined.

For our current research, we collected the data from the previous scholarly papers. Prior research explored and studied the relationship between ethical intentions and startup success, the relationship between gender and success on an entrepreneur, impacts of personality characteristics on the intention to

become an entrepreneur, and the relationship between leadership styles and innovative entrepreneurship. The wording was different (e.g., startup, small business, entrepreneur, etc.) but the core idea was the same - find what makes entrepreneurs and startups successful, when there's such a high failure rate among new small businesses and entrepreneurs.

Previous researchers found that ethics, gender, leadership style, and personality traits have an impact on entrepreneurs and startups. In their papers, the scholars used these elements as independent variables, and entrepreneurship or startup success was used as a dependent variable. However, these independent variables were used in silos with the entrepreneurial and startup success (i.e., the relationship between gender and startup success, leadership styles and entrepreneurial success, and etc.), and as a result, the importance of each of them, in combination with each other on startup success, wasn't studied.

This description of the studies in the database considers such facets as the definition of the primary variables of interest (entrepreneurial outcomes and success/gender), the type of data used, and the analytical techniques. A subsequent section focuses more explicitly on the evidence of the relationship between entrepreneurial outcomes, gender, and key variables such as ethics, leadership, and personality traits. In our research, we used entrepreneurial success as a dependent variable or as a variable of interest and ethics, gender, personality traits, and leadership style as independent variables to find out which variables are more important (i.e., statistically significant) in terms of entrepreneur or startup becoming successful.

For our research, we decided to use meta-analysis. As a contemporary scientific method, meta-analysis is a statistical and quantitative procedure that synthesizes the results from multiple independent empirical studies to produce an estimate of the overall magnitude of a relationship or impact of an intervention and determines the best estimate of the population effect size (Borenstein et al., 2009). In a meta-analysis, effect sizes and variances are computed for each study and then compared with weighted means. This process works directly with the effect size from each study instead of the  $\rho$  value. Summary effects are computed and tested, allowing for assessing the dispersion of the impact.

The analytical techniques include: entering fully replicated studies if they were from independent group samples, using averaged measures for effect size if multiple indicators existed for the same construct, correcting each primary correlation due to measurement error in predictor and criterion. Calculating sample weighted means as the estimated population correlation, using the mean of reliabilities if not reported in tables, correcting firm performance measures only if multi-item construct with reliability reported; and indicating 90% confidence based on the uncorrected standard error of mean effect size and 80% credibility intervals based on corrected standard deviation providing an estimate of the variability of individual effect size.

This is one of the most reliable and consistent methods, in the context of a current research paper, due to a few reasons. First, we studied multiple scholar papers, where each of the variables of our interest (ethics, gender, leadership style, and personality traits) was reviewed in at least a few research papers. Second, previous researchers used surveys as their preferred method for collecting the data. Third, across all the papers, the dependent variable was the success of an entrepreneur. Taking into consideration all these facts, the data collection process was unified, and the data from different research papers was appropriate for comparison.

One of the challenges in performing the meta-analysis is that researchers on entrepreneurship defined key variables of interest in this study (Entrepreneurship, Performance, Gender, Ethics, Leadership styles, and Personality traits of Big-Five) in different ways. Such variation in definitions demands great care in the design of the conceptual framework that synthesizes the available evidence in this field of research.

## **Data**

Data used for the study were retrieved from a variety of electronic databases. Journal articles and research were extracted from Google Scholar, UAA Consortium Library website, ProQuest, PsychInfo, EBSCO, ABI (Inform Global Business Index), Business Source Complete, Education Full Text, PsycINFO, JSTOR and Scholars Portal, among others. The data search included research from the Journal of Applied Psychology, Academy of Management Review, Academy of Management Journal, Journal of Applied Behavioral Science, Journal of Management, Journal of Organizational Behavior, Personnel Psychology,



Personnel, Training, and Development Journal. Several entrepreneurship-related publications were also evaluated, including Entrepreneurship Theory and Practice, Frontiers and Entrepreneurship Research, Journal of Small Business Management, Journal of Business Venturing. Working papers and other unpublished papers are included because that was the only way of incorporating the most recent research output, and it enlarges the sample.

Additional research was found by examining the reference lists of fundamental research papers found. For Leadership styles. Search terms used to retrieve the journal articles focused on five areas: a) for personality: personality, trait motivation, need, psychology, individual difference cognition, attitude, and entrepreneurship; b) for entrepreneurial Intention: entrepreneurship, intention, aspiration, orientation, gender, inclination; c) for entrepreneurial performance: gender, performance, success, growth, failure, and firm survival; d) for ethical intention ethics, ethical intention, gender, leadership, success. We checked all the references that might be related to our work in previous reviews of the outcomes of entrepreneurship success and our key variables. Finally, reference lists of all articles were reviewed for relevant content.

A total of 46 studies were examined for inclusion (See Table 1). The selection criteria used to identify potential data sources included screening for relevant studies by using the title and abstract for the initial review. A full review of the potential data sources was conducted after the studies were initially screened and accepted. Studies included in the data review screening were required to include data involving gender, success, leadership style, personality profile, or ethical intention of entrepreneurs. Studies published before the year 2000 were removed in order to include the most recent data for analysis. International studies were included. A total of 25 studies were included after the review screening. A total of 68% of the included studies contained data pertaining to the first hypothesis. A total of 56% of the included studies contained data pertaining to the second hypothesis. 24% of the total studies included data pertaining to both hypothesis 1 and hypothesis 2.

**TABLE 1**  
**STUDIES CONSIDERED FOR INCLUSION**

<b>Title</b>	<b>Authors</b>	<b>Year</b>	<b>Published</b>	<b>Country</b>	<b>Source Size</b>	<b>Included</b>
1. Who Is Willing to Sacrifice Ethical Values for Money and Social Status?; Gender Difference in Reactions to Ethical Compromises	Jessica A. Kennedy, Laura J. Kray	2014	Yes	USA	103	1
2. The Importance of Gender across Cultures in Ethical Decision-Making	Maria L. Roxas, Jane Y. Stoneback	2004	Yes	USA	750	1
3. Ethical Perceptions of business students in a New Zealand university: do gender, age and work experience matter?	Gabriel Eweje, Margaret Brunton	2010	Yes	New Zealand	655	1
4. Gender variations in ethical and socially responsible considerations among SME entrepreneurs in Malaysia	Noor Hazlina Ahmad, Pi-Shen Seet	2010	Yes	Malaysia	222	1
5. Successful U.S. Entrepreneurs: Identifying Ethical Decision-making and Social Responsibility Behaviors	Dinah Payne, Brenda E. Joyner	2006	Yes	USA	10	0
6. The influence of sustainability orientation on entrepreneurial intentions – Investigating the role of business experience	Andreas Kuckertz, Marcus Wagner	2010	Yes	Germany	519	0
7. When Ethics Matters – Interpreting the Ethical Discourse of Small Nature-Based Entrepreneurs	M. Lahdesmaki	2005	Yes	Finland	4	0
8. Service Ethics in Startup and Emerging Enterprises Across Industries & It's Impact on the Competitiveness	Rohit Kanda, Harish Handa, Pushpkant Shaktwipsee	2019	Yes	India	203	0
9. The Impact of Service Ethics on Organization Competitiveness in India – A Primary Approach to the Startup and Emerging Service Enterprises	Rohit Kanda, Harish Handa	2018	Yes	India	60	0

10.	Building Values, Business Ethics and Corporate Social Responsibility Into The Developing Organization	Brenda E. Joyner, Dinah Payne, Cecily A. Raiborn	2002	Yes	USA	10	0
11.	Gender, formality, and entrepreneurial success	Lars Ivar Oppedal Berge, Armando Jose Garcia Pieres	2019	Yes	Norway	644	1
12.	Why Some Leaders Can Build New Organizations: Leadership, Individual Differences, and Gender in Entrepreneurship	Johanna E. Johnson	2011	No	USA	16	1
13.	Survival of entrepreneurship in Spain	Bernardi Cabrer-Borras, Paz Rico Belda	2017	Yes	Spain	49,130	1
14.	Gender, entrepreneurial characteristics, and success: Evidence from Ethiopia	Tigineh Mersha, Ven Sriram	2019	Yes	USA	157	1
15.	Gender Differences in Propensity Entrepreneurial	Phillip Koellinger, Maria Minniti, Christian Schade	2013	Yes	The Netherlands	108,919	1
16.	Gender Differences in Business Performance: Evidence from the Characteristics of Business Owners Survey	Robert W. Fairlie, Alicia M. Robb	2009	Yes	USA	38,020	1
17.	Assessing Entrepreneurship and African American Women: Factors of Success	Carolyn Coleman Edwards	2008	No	USA	10	0
18.	Entrepreneurial Potential and Success in Business: A Study on Elements of Convergence and Explanation	Gustavo Henrique Silva De Souza, Paulo Da Cruz Friere Dos Santos, Nilton Cesar Lima, Nicholas Joseph Tavares Da Cruz, Alvaro Guillermo Rojas Lezana	2016	Yes	Brazil	100	0
19.	What's the Difference?! Gender, Personality, and the Propensity to Start a Business	Marina Furdas, Karsten Kohn	2010	No	Germany	797	1

20.	The Big-Five Personality Model: Comparing Male and Female Entrepreneurs	Brooke R. Envic, Margaret Langford	2003	Yes	USA	119	1
21.	Gender Differences in Personality across the Ten Aspects of the Big Five	Yanna J. Weisberg, Colin G. DeYoung, Jacob B. Hirsh	2011	Yes	USA	2643	1
22.	Which Big-Five personality traits drive entrepreneurial failure in highly innovative firms?	Uwe Cantner, Rainer K. Silbereisen	2011	No	Denmark	639	1
23.	The Big Five Personality Dimensions and Entrepreneurial Status: A Meta-Analytical Review	Hao Zhao, Scott E. Siebert	2006	Yes	USA	47 (studies)	0
24.	The Big Five Personality – Entrepreneurship Relationship: Evidence from Slovenia	Bostjan Antoncic, Tina Bratkovic Kregar, Gangaram Singh, Alex F. DeNoble	2014	Yes	USA/Slovenia	546	1
25.	Relationships of Big Five Personality Traits and Locus of Control on Entrepreneurship Intentions among Students in Higher Learning Institutions	Bibi Noraini Mohd Yusuf, Syahida Kamil	2015	Yes	Malaysia	200	0
26.	Gender and organizational performance in business succession	Christian Soost, Petra Moog	2019	Yes	Germany	633	1
27.	Gender and Leadership Style: A Meta-Analysis	Alice H. Eagly, Blair T. Johnson	1990	Yes	USA	162 (studies)	0
28.	Entrepreneurial Women and Men: Two Different Species?	Marc Cowling, Mark Taylor	2001	Yes	USA	5380	0
29.	A Gender-Aware Study of Self-Leadership Strategies among High-Growth Entrepreneurs	Bari L. Bendell, Diane M. Sullivan, Matthew R. Marvel	2019	Yes	USA	383	0
30.	Analysis on Entrepreneurial Intention, Motivation and Personality Traits: Study at Universitas Indonesia	Razanah Mahdi M., Eko Sakapurnama	2019	Yes	Indonesia	150	0
31.	The contribution of self-efficacy to the relationship between personality traits and entrepreneurial intention	Jiun-Hao Wang, Chi-Cheng Chang, Shu-Nung Yao, Chaoyun Liang	2016	Yes	Taiwan	295	0

32.	Gender Differences in Leadership Styles: Who Leads More Destructively?	Jolanta Babiak, Beata Bajcar	2019	No	Poland	1956	1
33.	Innovative Female-Led Startups. Do Women In Business Underperform?	Paola Demartini	2018	No	Italy	227	1
34.	Gender-specifics in start-up strategies and the role of the entrepreneurial ecosystem	Sonja Sperber, Christian Linder	2017	Yes	UK	987	0
35.	The Influence of the Big Five Personality Traits and Risk Aversion on Entrepreneurial Intention	Alexandros G. Sahinidis, Panagiotis A. Tsaknis, Eleni Gkika, Dimitris Stavroulakis	2020	No	Greece	422	0
36.	The Role of Personality in Leadership: Five Factor Personality Traits and Ethical Leadership	Gönül Kaya Özbağ	2016	Yes	Turkey	144	1
37.	Gender Differences in Entrepreneurship: A Study of Entrepreneurs in Two Midwestern Counties	Tonia Y. Collins	2007	No	USA	110	1
38.	Understanding and Measuring Entrepreneurial Leadership Style	Maija Renko, Ayman El Tarabishy, Alan L. Carsrud, Malin Brannback	2015	Yes	USA	575	0
39.	Leadership Styles of Small Business Owners: Linking Theory to Application	Terry L. Howard, Gregory W. Ulferts, John Hannon	2019	Yes	USA	n/a	0
40.	The Role of Competencies in Shaping the Leadership Styles of Female Entrepreneurs: The Case of North West of England, Yorkshire, and North Wales	Vassiliki Bamiatzi, Sally Jones, Siwan Mitchellmore, Konstantinos Nikolopoulos	2015	Yes	UK	58	1
41.	The communality-bonus effect for male transformational leaders – leadership style, gender, and promotability	Tanja Hentschel, Susanne Braun, Claudia Peus, Dieter Frey	2018	Yes	UK	344	1

42.	Entrepreneur's paternalistic leadership style and creativity: The mediating role of employee voice	Alisher Tohirovich Dedahanov, Do Hyung Lee, Jaehoon Rhee, Junghyun Yoon	2016	Yes	South Korea	387	0
43.	Leadership Styles and Innovative Entrepreneurship: An International Study	Stefan van Hemmen, Claudia Alvarez, Marta Peris-Ortiz, David Urbano	2015	Yes	Spain	43	0
44.	The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review	Zhao, H., Seibert, S.E., Lumpkin, G.T.	2010	Yes	USA	15,423	1
45.	Pathways to successful entrepreneurship: parenting, personality, early entrepreneurial competence, and interests	Schmitt-Rodermund, E.	2004	Yes	Germany	144,117	1
46.	The general factor of personality: A meta-analysis of Big Five inter-correlations and a criterion-related validity study.	Van der Linden, D., Nijenhuis, J., Bakker, A.B.	2010	Yes	Germany	139	1

*1 = meets meta-analysis inclusion criteria, 0 = has not meet meta-analysis inclusion criteria*

Each study had a sample size between 16 and 108,919 subjects. The study's independent variables are gender, big five personality profile, ethical intention, leadership style. The study's dependent variables are a success (measured by key performance indicators [KPIs] such as profitability, sales, and longevity of the business), leadership style, and personality profile (Big 5 Personality). The primary outcome measures are the success of the venture and the impact on leadership style and personality. The secondary outcome measure is the correlation between personality profile, leadership style, and gender.

There is little homogeneity among the studies. Similarly, the literature has not yet converged on standard definitions of performance achievement. Of the 129 observations on performance, 70 (54 percent) focus on self-employment earnings defined in various ways, 16 percent on inputs (typically employment) as a measure of size or growth, and 15 percent on duration or survival. (need to count) Lack of uniformity in measures of key variables of interest may generate additional problems for a quantified meta-analysis of the relationship between variables and entrepreneurship. Additional complexity arises from the use of different estimation strategies. The meta-analysis distinguishes structural studies from reduced-form studies of the same relationship. Twenty-four of the 129 performance observations (14 percent) are structural. Almost none of the stock and entry studies are structural.

Europe dominates the geographical distribution of studies of entrepreneurship entry and performance, contributing 9 of 25 studies (40.90 percent). This is followed by the USA (36.35 percent), UK (9.1 percent), Asia (9.1 percent), and New Zealand (4.55 percent).

In researching entrepreneurship choice and performance, there are good reasons for studying men and women separately because they face different constraints and act on various opportunities.

**TABLE 2**  
**DESCRIPTIVE DATA**

	Title	Authors	Published	Country	Variables Metanalysis	Hypothesis
1	Who Is Willing to Sacrifice Ethical Values for Money and Social Status?; Gender Difference in Reactions to Ethical Compromises	Jessica A. Kennedy, Laura J. Kray	Yes	USA	v1 ← v2, v3	H1
2	The Importance of Gender across Cultures in Ethical Decision-Making	Maria L. Roxas, Jane Y. Stoneback	Yes	USA	v1 ← v2, v3	H1
3	Ethical Perceptions of business students in a New Zealand university: do gender, age and work experience matter?	Gabriel Eweje, Margaret Brunton	Yes	New Zealand	v1 ← v2, v3	H1
4	Gender variations in ethical and socially responsible considerations among	Noor Hazlina Ahmad, Pi-Shen Seet	Yes	Malaysia	v1 ← v2, v3	H1

	SME entrepreneurs in Malaysia					
5	Gender, formality, and entrepreneurial success	Lars Ivar Oppedal Berge, Armando Jose Garcia Pieres	Yes	Norway	v1 ← v2, v4	H1
6	Why Some Leaders Can Build New Organizations: Leadership, Individual Differences, and Gender in Entrepreneurship	Johanna E. Johnson	No	USA	v1 ← v2, v4, v5	H1, H2
7	Survival of entrepreneurship in Spain	Bernardi Cabrer-Borras, Paz Rico Belda	Yes	Spain	v1 ← v2, v4	H1
8	Gender, entrepreneurial characteristics, and success: Evidence from Ethiopia	Tigineh Mersha, Ven Sriram	Yes	USA	v1 ← v2, v4	H1
9	Gender Differences in Entrepreneurial Propensity	Phillip Koellinger, Maria Minniti, Christian Schade	Yes	The Netherlands	v1 ← v2, v4	H1
10	Gender Differences in Business Performance: Evidence from the Characteristics of Business Owners Survey	Robert W. Fairlie, Alicia M. Robb	Yes	USA	v1 ← v2, v4	H1
11	What's the Difference?! Gender, Personality, and the Propensity to Start a Business	Marina Furdas, Karsten Kohn	No	Germany	v1 ← v2, v6	H2
12	The Big-Five Personality Model: Comparing Male and Female Entrepreneurs	Brooke R. Envick, Margaret Langford	Yes	USA	v1 ← v2, v6	H2



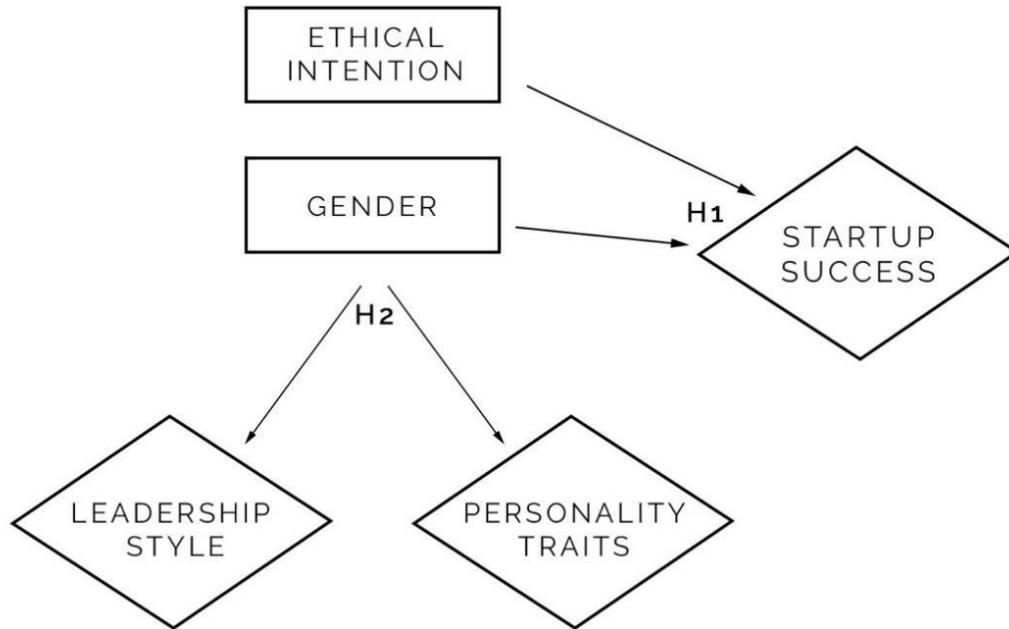
13	Gender Differences in Personality across the Ten Aspects of the Big Five	Yanna J. Weisberg, Colin G. DeYoung, Jacob B. Hirsh	Yes	USA	v1 ← v2, v6	H2
14	Which Big-Five personality traits drive entrepreneurial failure in highly innovative firms?	Uwe Cantner, Rainer K. Silbereisen	No	Denmark	v1 ← v4, v6	H2, H1
15	The Big Five Personality – Entrepreneurship Relationship: Evidence from Slovenia	Bostjan Antoncic, Tina Bratkovic Kregar, Gangaram Singh, Alex F. DeNoble	Yes	USA/Slovenia	v1 ← v4, v6	H2, H1
16	Gender and organizational performance in business succession	Christian Soost, Petra Moog	Yes	Germany	v1 ← v2, v4	H1
17	Gender Differences in Leadership Styles: Who Leads More Destructively?	Jolanta Babiak, Beata Bajcar	No	Poland	v1 ← v2, v5	H2
18	Innovative Female-Led Startups. Do Women In Business Underperform?	Paola Demartini	No	Italy	v1 ← v2, v4	H1
19	The Role of Personality in Leadership: Five Factor Personality Traits and Ethical Leadership	Gönül Kaya Özbağ	Yes	Turkey	v1 ← v3, v6	H2
20	Gender Differences in Entrepreneurship: A Study of Entrepreneurs in Two Midwestern Counties	Tonia Y. Collins	No	USA	v1 ← v2, v4	H1
21	The Role of Competencies in Shaping the Leadership Styles of Female	Vassiliki Bamiatzi, Sally Jones, Siwan	Yes	UK	v1 ← v2, v5	H2

	Entrepreneurs: The Case of North West of England, Yorkshire, and North Wales	Mitchelmore, Konstantinos Nikolopoulos				
22	The communality-bonus effect for male transformational leaders – leadership style, gender, and promotability	Tanja Hentschel, Susanne Braun, Claudia Peus, Dieter Frey	Yes	UK	v1 ← v2, v5	H2
23	The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review	Zhao, H., Seibert, S.E., Lumpkin, G.T.	Yes	USA	v1 ← v4, v6	H2, H1
24	Pathways to successful entrepreneurship: parenting, personality, early entrepreneurial competence, and interests	Schmitt-Rodermund, E.	Yes	Germany	v1 ← v4, v6	H2, H1
25	The general factor of personality: A meta-analysis of Big Five inter-correlations and a criterion-related validity study	Van der Linden, D., Nijenhuis, J., Bakker, A.B.	Yes	Germany	v1 ← v4, v6	H2, H1

v1 = Entrepreneurship, v2 = Gender, v3 = Ethical Intention, v4 = Startup Success, v5 = Leadership Styles, v6 = Personality Traits, H1 - Gender and ethical intention have a positive and significant impact on startup success, H2 - Gender has a significant impact on both leadership style and personality traits

## CONCEPTUAL RESEARCH DIAGRAM

**FIGURE 1**  
**RESEARCH DIAGRAM**



## RESULTS

*Hypothesis 1: Gender and ethical intention have a positive and significant impact on startup success.*

The primary results examining the relationship between gender and entrepreneurial success rates find that gender has a positive and significant impact on startup success. 71% of the studies examined demonstrated a positive correlation between gender and success variables (longevity and profitability), with one studying finding no such correlation (Demartini, 2018) and an additional study (Koellinger et al., 2013) found the gender differences inconclusive. Possible reasons for the study showing no correlation are such that the study had a disproportionate sample size of male entrepreneurs (131) to female entrepreneurs (26). Studies found that male entrepreneurs have greater success rates than female entrepreneurs. All studies included respondents that were all entrepreneurs. The longevity variable used for the included studies was the lifespan of the startup (Cabrer-Borras, 2017; Koellinger, 2013). 29% of the studies examined utilized the longevity variable as the measurement of entrepreneurial success. Data included using the longevity variable measurement ranged in sample size from 49,130 to 108,919.

Profitability variables used for the included studies were sales, sales growth, and profits. 71% of the studies examined utilized profitability variables for the measurement of entrepreneurial success (Berge et al., 2019; Mersha et al., 2019; Fairlie et al., 2009; Soost et al, 2019, Demartini, 2018; Collins, 2007). Data included using profitability measurements ranged in sample size from 110 participants to 38,030 participants. Each of the studies further examined secondary variables to determine potential sources for the gender discrepancy. Secondary results of the study suggest notable gender differences in additional facets that could impact startup success such as startup funding, sector, entrepreneurial motivation, entrepreneurial propensity, and weekly hours dedicated to the startup.

Studies that examined entrepreneurial propensity as a variable contributing to overall gender discrepancies in the realm of entrepreneurial ventures found that, overall, females are significantly less likely to found startups than males (Collins, 2017; Koellinger et al., 2013). The additional secondary variables considered in the studies not only indicate potential reasons for gender variances in success measurements, but also demonstrate great potential to act as barriers for female entrepreneurs.

Startup funding was also found to have a positive impact on success of a startup with study data supporting that male entrepreneurs have greater access to more startup funding than female entrepreneurs, thus potentially contributing to the gender gap in startup success (Oppedal et al., 2019; Demartini, 2019). Funding access can not only limit the growth of startups but also act as a potential deterrent for female entrepreneurial propensity. If females have a hard time identifying external funding sources, this barrier could prevent women from considering entrepreneurial ventures as a viable alternative to existing career opportunities.

Motivation and business sector differences have also been attributed to the gender and success rate discrepancy as a selection of the included studies have controlled for these variables and noted significant impacts between gender and motivation and startup business sector. Motivation has been an additional variable frequently linked to gender differences in startups with men and women entrepreneurs noting different reasons for starting a business (Koellinger et al., 2013; Oppedal et al., 2019; Mersha et al., 2019). This difference could help account for the gender variation in entrepreneurial propensity, startup business sector, and weekly work hours. Female entrepreneurs have a greater likelihood of starting businesses in the service sector than males do, thus potentially impacting the level of startup funding received and accounting for variances in key performance indicators. Gender differences in motivation have indicated that women are more likely to begin a business with the intent of reducing overall hours dedicated to work (Oppedal et al., 2019; Fairlie et al., 2009) while providing additional time for family and household activities. This could be an additional reason that women average less hours dedicated to the startup in a week. Male entrepreneurs tend to work greater hours and are significantly less likely to cite more time for household and familial activities as a contributing reason for founding a business and tend to cite money and greater control as drivers for entrepreneurship.

Four studies performed from 2004 to 2019 were analyzed to determine whether women were more ethical than men. Each study had 103 to 750 participants and measured ethics in terms of moral outrage, ethical decision making, ethical responses, ethical practices, or socially responsible practices. These studies used data collection methods such as Amazon Mechanical Turk, analysis of variance (ANOVA's), vignettes, questionnaires, and semi-structured interviews. These studies included ethical questions such as "I believe Jim should make discrete inquiries about the personal consequences of admitting the truth before going to his superiors" or in the format of "Is the action ethical?", "Would your peers do it?", "Would you do this yourself?", "Is the action morally right or wrong?" as well as many others, see Appendix F (Eweje & Brunton, 2010; Roxas & Stoneback, 2004). The studies were based not just in the United States but across the world, sampling men and women from Malaysia, Canada, Australia, China, the Philippines, Thailand, Germany, and Ukraine. Respondents included business founder-owners, business students, as well as junior and senior accounting students. While more evidence is needed, these four studies show significant evidence that women are more ethical than men when making business decisions and developing business practices in cultures across the world.

The four studies split up participants into two groups depending on their sex, female or male, differences in gender were not taken into consideration. Then they tested which gender was more ethical using many different types of testing methods. All 4 studies came to the same conclusion that women are more ethical than men or view ethical decisions as more important than men.

Women not only tend to be more ethical in their decision making, but they also tend to have a greater sense of moral outrage when faced with ethical compromises compared to their male counterparts (Kennedy & Kray, 2014). It did not matter whether the ethical compromise was for the gain of social status or for a monetary gain, the studies showed men were less morally outraged (Kennedy & Kray, 2014). Work-related ethical issues specifically also showed a more ethical response from women, see Appendix F (Eweje & Brunton, 2010). Across different countries Ukraine had the largest difference between male and female

ethicality, with women being more ethical, and China with a significance level of 0.025, was the only country where women tended to be less ethical than their male counterparts (Roxas & Stoneback, 2004). Social responsibility is an ethical idea that one is responsible for the society as well as themselves. In addition to ethics, with a significance level of 0.349, the studies showed that socially responsible practices were more likely to be valued and upheld by women as well, see Appendix J (Ahmad & Seet, 2010). While not as strong as females, males also seemed to agree that social and ethical practices were important specifically in business settings, and both groups did not see bending the rules as acceptable in business practices, while society may perceive them to (Ahmad & Seet 2010). The studies showed that both women and men were more likely to value ethical and socially acceptable practices at smaller business firms rather than larger business firms (Ahmad & Seet, 2010).

Overall, the four studies used in this qualitative analysis showed that women are more ethical than men in regular and business settings as well as more likely to have a greater sense of moral outrage when confronted with ethical dilemmas. There is one country where this is untrue and men have been found to be more ethical than women, that country is China. More research is needed to confirm the hypothesis that throughout the world women are more ethical than men and if this directly contributes to the success of a business, however, this research is a basis point for the understanding that across cultures and around the globe, women are the more ethical sex.

***Hypothesis 2: Gender has a significant impact on both leadership style and personality traits.***

To evaluate the relationships between the predictive power of the Big Five personality traits, Gender, and the Entrepreneurial outcomes (EI -decision to choose entrepreneurship as a career and performance - firm survival or sustainability). We applied the meta-analysis used to build a correlation matrix that is descriptive of the size of relationships found among all constructs of interest in prior empirical research (Hunter & Schmidt, 2004).

We created the meta-analytically derived correlation matrix using four sources of secondary data, including existing meta-analyses for a relationship between Big-Five and Entrepreneurial Performance: The first study: Zhao, Siebert, & Lumpkin's (2010). Sixty primary studies with 15,423 individuals and 66 independent samples were selected for the meta-analysis. Findings revealed that Conscientiousness, Openness to experience, emotional stability, and extraversion are each positively related to entrepreneurial firm performance, Appendix B, Table 1. The largest effect size was for Openness to experience ( $\rho^{\hat{}} = 0.21$ ), followed by Conscientiousness ( $\rho^{\hat{}} = 0.19$ ) and Emotional stability ( $\rho^{\hat{}} = 0.18$ ). Agreeableness related to Entrepreneurial Performance ( $\rho^{\hat{}} = -0.06$ ), implying that entrepreneurs were less agreeable than non-entrepreneurs, which is consistent with Zhao & Siebert's (2006) study comparing entrepreneurs and non-entrepreneurs. The multiple regression results are shown in Appendix B, Table 2.

In the second study: Van der Linden, Nijenhuis, & Bakker (2010), a meta-analysis combined two studies to evaluate the inter-correlation of each of the Big Five personality dimensions. The first study had  $k=212$  samples with total participants ( $n=144,117$ ) they represented a very extensive cross-section of the population. In the second study, the participants ( $n=144$ ) came from a cross-section of industries. Findings confirmed that the Big Five personality traits contributed to the generalized factor of personality, also traits results were consistent with previous studies.

The third study: The Schmitt-Rodermund (2004). The data was gathered through semi-structured surveys ( $n=139$ ) issued in 1997, with a follow-up in 2001 in Germany. This study provided correlation between Entrepreneurial Intention and Performance. The results showed that 71% of the small business participants had survived in business for anywhere from 3 to 7 years. The 0.52 correlation is consistent with results in the literature measuring the impact of intention on performance.

The fourth study: Sebastian Wilfling, Uwe Cantner, Rainer K. Silbereisen (2011) measured which Big-Five personality traits drive entrepreneurial failure. Data of this study ( $n=373$ ) collected from the Thuringian Founder Survey, which is an interdisciplinary project on the success and discontinuance of entrepreneurs in Germany. Cox-model and an augmentation of it to estimate respective hazard rate-models were used. The Big-Five personality traits were quantified in a standardized way with the help of 45 items.

Each of the Big-Five personality factors was measured by 9 German bipolar adjective pairs on a six-point Likert scale (0-5). The results showed that a relatively higher degree of Agreeableness decreases the hazard rate for entrepreneurial failure. Moreover, Conscientiousness drives entrepreneurial failure positively at the time of starting entrepreneurial activities, while this effect decreases over time.

We also created a correlation matrix using data from three studies for relationship between Big- Five personality traits and Gender differences of entrepreneurs:

The first study: Envick, Brooke R.; Langford, Margaret (2003) *The Big-Five Personality Model: comparing male and female entrepreneurs*. The Chamber of Commerce generated a list of entrepreneurs (n = 119), m = 86 and f = 33 to participate in the questionnaire developed by Howard, Medina, and Howard (1996). The results showed that female entrepreneurs scoring higher (M=18.061) than males (M=16.977) on the sociability factor. No substantial difference exists between males and females regarding adjustment. Females (M=16.333) are notable more open [F(1,118) = 1.950; p<.01] than males (M=14.407). Males (M=19.093) scored considerable higher on the conscientiousness factor [F(1,118) = 3.262; p<.05] than females (M=17.455). Females score higher on the agreeableness factor (M=19.667) than males (M=18.884). Table 1 in Appendix D presents the all means, standard deviations, and p-values.

The second study: Bostjan Antoncic, Tina Bratkovic Kregar, Gangaram Singh, and Alex F. DeNoble (2015). Data collected via face-to-face structured interviews with people in employment in Slovenia (n = 546), male 280 and female 266, hypotheses tested by multi- nominal logistic regression (supplemented by MANOVA). Respondents reported the accuracy of the 40 adjectives with respect to themselves on a Likert (0-5), Appendix C, Table 1. The results indicate (Appendix C, Figure 1-5) Openness and Extraversion significantly differ (0.05) in the means between entrepreneurs and non-entrepreneurs, Agreeableness slightly different (0.10), and Conscientiousness and Neuroticism were not found to significantly differ. Results for gender variable on multi-nominal logistic regression showed that four personality factors were found to be significantly different between men and women (Openness—higher for men, sig. .041; Conscientiousness —higher for women, sig. .001; Extraversion—higher for women, sig. .009; Agreeableness —higher for women, sig. .000) while one was not found to be significantly different (Neuroticism). Effect sizes for each personality were small, although the multivariate relationship for the full set of personality variables was moderate (0.37). Considerable heterogeneity existed for all the personality variables except Agreeableness.

The third study: Marina Furdas, Karsten Kohn (2010), Data were collected from the KfW Start-up Monitor, a large-scale population survey (n = 40,797) on start-up activity in Germany. The data combined socio-demographic characteristics, entrepreneurship-related attitudes, and personality traits of both men and women, distinguished by their entrepreneurial status. Binary choice model's estimates and decomposition techniques indicated that gender differences in socio-demographics in favor of higher start-up rates among women (-19%). At the same time, the distribution of personality traits is less favorable for business start-ups among women. Men opted for a start-up more often, even given identical human capital and related endowments. The share of male or female business starters was 2.1% among males and 1.3% among females. See Appendix E (Tables 1-5, Figure 1).

Overall, the results of our meta-analysis confirmed that the Big Five personality traits are related to both EI (decision to be an entrepreneur) and Entrepreneurial Performance (measured by firm survival). In a sub-level entrepreneurs and non-entrepreneurs differ significantly on the four personality characteristics. Entrepreneurs scored higher on Openness, Conscientiousness, and Experience and lower on Neuroticism and Agreeableness. In gender difference results indicated that female entrepreneurs are significantly more open than male entrepreneurs. Male entrepreneurs are significantly more conscientious.

To examine and measure the variable leadership and its relationship between gender and entrepreneurial success, we used the studies of Johnson "Why Some Leaders Can Build New Organizations: Leadership, Individual Differences, and Gender in Entrepreneurship" and Bobiak & Bajcar "Gender differences in leadership styles: Who leads more destructively?"

Johnson studied a direct relationship between leadership and venture success and used it as one of her hypotheses for the paper. This research hypothesized that entrepreneurship would be a contextual situation where, despite being generally most popular, charismatic leadership would not be most common nor show

strong links to venture success. Leadership was assessed using two measures: three-factor measure developed by Yukl and colleagues and CIP model developed by Mumford and colleagues (Johnson, 2011).

The study indicated that there were no statistically notable differences between the means, relationship-oriented behavior was significantly correlated with the overall success of the enterprise according to entrepreneurs (Johnson, 2011). Contrary to what was suggested, charismatic leadership was actually the most common leadership style. Ideological leadership was reported less frequently, and pragmatic leadership was reported at a moderately high level. Pragmatic leadership was also positively associated with success, measured by the number of employees (Johnson, 2011). In general, entrepreneurs above in all three leadership styles tended to be highly self-efficacious and realized that more of their previous businesses were successful. Entrepreneurs categorized with high levels of charismatic leadership were typically in the newer organization. More charismatic entrepreneurs also tended to have higher levels of a range of individual differences, such as empowerment, the pursuit of achievement and a very strong internal locus of control, as well as elements of entrepreneurial orientation such as innovation and proactivity (Johnson, 2011). Bobiak and Bajcar conducted a research aimed at investigating gender differences in leadership styles, in which entrepreneurs rated their own leadership styles as structuring, autocratic, participative, etc.

The results of a one-way ANOVA analysis showed significant differences between men and women for all destructive leadership factors. These results showed that male leaders are perceived to be significantly more destructive than female leaders (Bobiak & Bajcar, 2019).

Significant differences were found in structure between males and females. The results showed that women as leaders are less Machiavellian, less distant and more structured and goal-oriented than men. Minor differences between men and women were found in autocratic, active and encouraging styles. Both women and men demonstrate these styles equally (Bobiak & Bajcar, 2019). No considerable differences between men and women were found only in relation to incompetence in working with new technologies. This aspect of the leader's behavior does not seem to be directly related to the organization's leadership, but if the manager is perceived as ignorant of the basic technological achievements, it is not beneficial for her overall reputation (Bobiak and Bajcar, 2019).

## CONCLUSIONS

Entrepreneurship plays a vital role in a modern economy. Failure as an businessowner can be costly to society in conditions of missed opportunities and lost resources. Moreover, it can be disastrous to the individual entrepreneur in terms of its psychological and financial impacts. Hence, developing a better understanding of entrepreneurial processes and the variables that attract people to entrepreneurship and that assist success in an entrepreneurial role is a significant undertaking.

We presume that this is the first qualitative meta-analytic examination of the existing entrepreneurial literature on entrepreneurship in a multitude of contexts. It includes the investigation of the determinants of career choice (Big-Five personality traits), gender, the evaluation of the effects of entrepreneurship policies, leadership styles, and ethical intention as the predictors of entrepreneurial success.

For the Big Five variable, our finding proved that personality traits could be used for predicting entrepreneurial start-ups (Openness) and EI (Extraversion and Agreeableness). Female entrepreneurs are notable, more open (Openness) than male entrepreneurs. Male entrepreneurs are substantially more meticulous (Conscientiousness). Results also supported the notion that the entrepreneurs differ from those in managerial positions on four of the five fundamental dimensions of personality. Overall, personality constructs play an essential role in both EI (decision to become an entrepreneur) and Entrepreneurial Performance (measured by firm survival).

Gender plays a key role in entrepreneurial success. Discrepancy between male and female startup success appears to be a global phenomenon with research findings supporting the hypothesis that male entrepreneurs are typically more successful than female entrepreneurs. Reasons for these gender variations have been attributed to a wide variety of variables that perpetuate these discrepancies and are reflected in entrepreneurial success outcomes. Examples of variables influenced by gender include motivation,

personality, ethicality, funding access, and time dedicated to the startup. The review of these results can help identify areas of support for business development programs by focusing assistance to clients on areas prone to variation by gender in order to reduce potential barriers to entrepreneurial success.

An analysis of previous work on leadership and its relation to ethics, gender, and entrepreneurial success shows that leadership styles may vary. Successful entrepreneurs use a wide range of leadership styles from Laissez-faire to transform leadership or any combination of different styles. This depends on entrepreneur's personal traits and employees' preferences and culture. One component that was recognized as common to all successful entrepreneurs was a clear goal.

New research shows ethical business intentions are positively related to success. Female entrepreneurs tend to be more ethical than their male counterparts. Not only do women tend to be more ethical, they also tend to have a greater sense of moral outrage when presented with ethical dilemmas. Therefore female entrepreneurs with ethical intentions are more likely to succeed when founding small businesses. This research has been gathered from countries and studied entrepreneurs around the world.

## **FUTURE RESEARCH**

We suggest future researchers to carefully select the personality variables they include within the basic framework and accumulated findings from previous studies. Entrepreneurs are a heterogeneous population, and so it is not surprising that studies of their personalities are mixed. Therefore, it may be beneficial to distinguish between those who voluntarily choose to become entrepreneur and those who are forced into this because there is no other option available. The literature is often unclear as to whether individuals with a given set of personality traits selected into entrepreneurship, or whether individuals developed the traits endogenously after becoming entrepreneurs. We encourage more empirical studies reporting the venture stages of their samples and using a longitudinal approach so that this moderation hypothesis can be tested in future research. Secondly, for future research on entrepreneurs' personality is the mechanism through which entrepreneurs' personality affects firm outcome in the post-launch stage. Potential settling variables include organizational culture/climate and strategy.

The relationship between gender and entrepreneurial success has been a global topic of interest. Much of this research focuses on gender differences on an individual level rather than identifying any trends on a larger scale. Future research into this relationship could broaden the focus outside of individual entrepreneurial trait analysis and examine how this relationship is affected on a larger scale by examining impacts of culture, existing wage gaps, and women's rights. An additional consideration would be to include a multitude of success measurement variables in a single study rather than focusing on a few. This could help identify gender biases in measurements of entrepreneurial success.

From the data it is suggested that ethical intentions have a positive correlation with entrepreneurial success in businesses in communities around the world. The data shows females to be more ethically minded than males. Future research could aim to determine ethicality in different sections of business and then determine in each sector of business if males or females were more ethical. The current meta-analysis compared males and females but did not account for the different sectors of business the males and females were in, future research could give further insights into gender and ethical intentions.

This analysis highlights places where empirical findings are consistent, while also embracing the heterogeneity where it is evident. Some of this variance appears due to small sample sizes and selected subgroups, and so more extensive studies and meta-analyses will likely yield a more precise picture in the long-term. The multi-disciplinary nature of the entrepreneurial characteristics and personality literature also means that the terminology is not well standardized, and the research dialogue does not easily lend itself to learning from past research and making incremental progress as a field. The sheer number of journals publishing research related to entrepreneurial characteristics, as well as the vast differences across them in terms of academic field and quality, also complicates the ability to have a direct, chronologically progressive research dialogue. However, this challenge is likely to diminish with time.



## DISCUSSION

As entrepreneurship continues to increase, success in startups will continue to be a challenge. The risk of failure is high in entrepreneurial ventures and mitigating this risk can prevent a greater number of businesses from failing. Research can identify key performance predictors for entrepreneurs and allow for them to focus more time on developing areas of the business prone to greater risk. Additionally, this research can further expand into socio-cultural areas to determine if trait variations are on the individual or group level.

We encourage future researchers to collect multiple indicators of firm performance and to pay more explicit attention to the type of firm performance measures for which they develop hypotheses.

## LIMITATIONS

The limitations of this study flow from the boundaries of the initial studies on which our meta-analysis is based. Nearly 75% of the performance articles and all primary studies covered in our analysis are cross-sectional in nature. In addition our results for company performance are based on people who have decided to become entrepreneurs. To the extent that personality traits influences the choice to become an entrepreneur, the entrepreneurial population understudy for company performance effects will be based on a restricted range of personality. Because we have limited information to estimate the extent of range restriction, we choose not to correct it. However, it is essential to note that any bias introduced by scope limitations is conservative and that the evaluations are accurate when generalized only to entrepreneurial populations. The third limitation is that the number of primary studies was small for some variables; thus, the results of such analyses should be interpreted with caution.

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## APPENDIX A

**TABLE 1**  
**OVERVIEW OF THE BIG-FIVE PERSONALITY TRAITS**

Big-Five	trait characteristics	general description
Openness	Factor O refers to Openness, originality, open-mindedness, defined by traits that relate to, for example, artistic (+), insightful (+), intelligent (+), commonplace (–), narrow interests (–), shallow (–).	Disposition to intellectual philosophical and intellectual) and unconventionality (imaginative, autonomous, and nonconforming).
Conscientiousness	Factor C refers to Conscientiousness, control, constraint, defined by traits that relate to, for example, deliberate (+), efficient (+), precise (+), careless (–), frivolous (–), irresponsible (–).	an inclination to achievement orientation (hardworking and persistent), dependability (responsible and careful), and orderliness (planful and organized)
Extraversion	Factor E refers to extraversion, energy, enthusiasm; defined by traits	A propensity for social orientation (outgoing and gregarious), to be surgent
	that refer to, for example, adventurous (+), assertive (+), dominant (+), sociable (+), quiet (–), reserved (–), retiring (–), shy (–).	(dominant and ambitious) and active (adventuresome and assertive)

Agreeableness	Factor A refers to Agreeableness, altruism, affection, defined by traits that relate to, for example, cooperative (+), generous (+), sympathetic (+), cruel (-), quarrelsome (-), unfriendly (-).	The propensity to be cooperative (trusting of others and caring) as well as likable (good-natured, cheerful, and gentle).
Neuroticism	Factor N refers to Neuroticism, negative affectivity, nervousness, defined by traits that relate to, for example, anxious (+), self-pitying (+), temperamental (+), calm (-), contented (-), stable (-).	tendency to render a lack of positive psychological adjustment and emotional stability

**APPENDIX B: ZHAO, SIEBERT, & LUMPKIN'S (2010) META-ANALYSIS OF THE RELATIONSHIP BETWEEN THE BIG FIVE PERSONALITY DIMENSIONS AND ENTREPRENEURIAL INTENTION AND ENTREPRENEURIAL PERFORMANCE**

**Table 1**  
Results of Meta-Analysis

Predictor	Criterion	k	N	$\bar{r}$	$\hat{\rho}$	SD <sub>p</sub>	90% CI		80% CRI	
							Lower	Upper	Lower	Upper
C	Intention	12	3,804	.16	0.19	0.15	0.11	0.27	0.00	0.37
	Performance	24	3,193	.15	0.19	0.28	0.09	0.29	-0.17	0.55
	Growth	13	1,554	.23	0.28	0.23	0.16	0.40	-0.02	0.58
O	Profitability/operations	14	1,801	.09	0.11	0.29	-0.03	0.25	-0.26	0.48
	Intention	11	3,017	.20	0.24	0.21	0.14	0.36	-0.02	0.51
	Performance	15	2,461	.15	0.21	0.20	0.10	0.30	-0.05	0.46
ES	Growth	9	1,406	.16	0.23	0.01	0.15	0.30	0.21	0.24
	Profitability/operations	6	998	.12	0.17	0.33	-0.10	0.43	-0.26	0.59
	Intention	12	3,938	.19	0.22	0.14	0.15	0.30	0.04	0.40
E	Performance	29	4,446	.14	0.18	0.12	0.13	0.23	0.02	0.34
	Growth	8	1,588	.11	0.13	0.12	0.03	0.22	-0.03	0.29
	Profitability/operations	22	2,845	.13	0.17	0.11	0.12	0.23	-0.03	0.31
A	Intention	7	2,020	.14	0.16	0.12	0.07	0.25	0.01	0.32
	Performance	9	1,476	.08	0.09	0.13	0.01	0.19	-0.07	0.26
R	Intention	6	1,889	.03	0.04	0.16	-0.08	0.16	-0.16	0.24
	Performance	4	931	.04	0.05	0.15	-0.11	0.20	-0.14	0.24
R	Intention	7	2,283	.30	0.40	0.15	0.30	0.51	0.21	0.59
	Performance	15	2,494	-.02	-0.02	0.20	-0.12	0.08	-0.27	0.23
	Growth	7	1,166	.03	0.03	0.27	-0.15	0.22	-0.32	0.38
	Profitability/operations	5	910	-.05	-0.05	0	-0.14	0.03	-0.05	-0.05

Note:  $\bar{r}$  = sample weighted average observed effect size;  $\hat{\rho}$  = estimated population effect size, after correcting for measurement error in both the predictor and the criterion; SD<sub>p</sub> = the standard deviation of population effect size; k = number of studies; N = total sample size; CI = confidence interval; CRI = credibility interval. C = conscientiousness, O = openness to experience, ES = emotional stability, E = extraversion, A = agreeableness, R = risk propensity. Extraversion and agreeableness do not have sufficient studies for performance subcategories.

**Table 2**  
Multiple Regression Results

Trait	Intentions			Performance		
	$\beta/R^a$	SE	t	$\beta/R^a$	SE	t
C	0.18	0.02	9.47*	0.19	0.02	8.39*
O	0.22	0.02	12.17*	0.21	0.02	9.32*
ES	0.14	0.02	6.90*	0.09	0.02	3.83*
E	0.11	0.02	5.84*	0.05	0.02	2.04*
A	-0.09	0.02	4.30*	-0.06	0.02	2.33*
Multiple R	0.36	0.02	19.89*	0.31	0.02	14.14*

Note: C = conscientiousness, O = openness to experience, ES = emotional stability, E = extraversion, A = agreeableness.

a. With the exception of the multiple R estimate in the last row, all estimates in the  $\beta/R$  column are standardized regression coefficients.

\* $p < .01$ .



**APPENDIX C: THE RESULTS ON THE HYPOTHESES BASED UPON EMPIRICAL FINDINGS ON THE BIG FIVE MODEL AND PREVIOUS RESEARCH REGARDING SIMILARITIES AMONG AND DIFFERENCES BETWEEN FEMALE AND MALE ENTREPRENEURS**

**The Big Five Personality–Entrepreneurship Relationship: Evidence from Slovenia. Bostjan Antoncic, Tina Bratkovic Kregar, Gangaram Singh, and Alex F. DeNoble, 2015**

**TABLE 1  
RESULTS OF MULTI-NOMINAL LOGISTIC REGRESSION (LIKELIHOOD RATIO TESTS)**

Model/Effect	-2 Log Likelihood	Chi-Square	df	Sig.
Model				
Intercept Only	615.38			
Final	520.48	94.90	45	0.000
Effect				
Intercept	520.48	0.00	0	
Openness	557.68	37.20	9	0.000
Conscientiousness	522.75	2.28	6	0.892
Extraversion	546.55	26.07	9	0.002
Agreeableness	540.74	20.26	9	0.016
Neuroticism	529.22	8.74	12	0.725

Goodness-of-fit: Pearson chi-square 366.89, 360 *df*, sig. .390, Deviance chi-square 319.35, 360 *df*, sig. .940.

Pseudo R-square: Cox and Snell .16, Nagelkerke .17, McFadden .07.

**TABLE 2  
SAMPLE CHARACTERISTICS**

Characteristics	Sample		Database Population		Difference
	Number	Percent	Number	Percent	Chi-Square Test
Classification					
Non-entrepreneur	72	13.19			
Maybe-Entrepreneur	255	46.70			
Potential-Entrepreneur	54	9.89			
Practicing-Entrepreneur	165	30.22			
Total	546	100.00			
Age					
20 years or less	2	0.37			
More than 20 to 30	225	41.21			
More than 30 to 40	195	35.71			
More than 40 to 50	111	20.33			
More than 50	13	2.38			
Total	546	100.00			
Gender					
Male	280	51.28	551,000	54.77	$\chi^2 = 2.713$
Female	266	48.72	455,000	45.23	$df = 1$
Total	546	100.00	1,006,000	100.00	$p = 0.10$
Main industry					
Services	318	67.95	22,970	71.94	$\chi^2 = 19.2$
Manufacturing	114	24.36	5,509	17.26	$df = 2$
Construction	36	7.69	3,449	10.80	$p = 0.00$
Total	468	100.00	31,928	100.00	

## APPENDIX D

The results on the hypotheses based upon empirical findings on the Big Five Model and previous research regarding similarities among and differences between female and male entrepreneurs. *The Big-Five Personality Model: comparing male and female entrepreneurs. Envick, Brooke R.; Langford, Margaret, 2003*

**TABLE 1**  
**THE FIVE FACTOR MODEL: MEANS, STANDARD DEVIATIONS, AND P-VALUES**

Factor	Group	Mean	SD	p-value
Sociability	Males	16.977	3.045	0.11750
	Females	18.061	3.808	
Adjustment	Males	13.384	2.46	0.46840
	Females	13.788	3.334	
Openness	Males	14.407	3.948	0.0099**
	Females	16.333	3.723	
Conscientiousness	Males	19.093	4.126	0.0380*
	Females			
Agreeableness	Males	18.884	3.756	0.28110
	Females	19.667	3.385	

\* Significant @ .05  
\*\* Significant @ .01

## APPENDIX E

The results on the hypotheses based upon empirical findings on the Big Five Model and previous research regarding similarities among and differences between female and male entrepreneurs. *What's the Difference?! Gender, Personality, and the Propensity to Start a Business. Marina Furdas, Karsten Kohn, 2010*

**TABLE 1**  
**DEFINITION OF VARIABLES**

Variable [number of regressors]	Definition
entrepreneur	dummy with 1 = persons who started (full-time or part-time) self-employment within the last 12 months
gender [1]	dummy with 1 = female
age [5]	dummies for age groups: 18-24, 25-34, 35-44, 45-54, 55-64 years
education [7]	dummies for: no formal degree, vocational training degree ( <i>Lehrabschluss</i> ), vocational school graduation ( <i>Berufsfachschulabschluss</i> ), technical school graduation ( <i>Fachschule/Meisterschule</i> ), technical college degree ( <i>Fachhochschulabschluss</i> ), university degree, other degree (civil service education, other unspecified degrees)
professional status [9]	dummies for: chief executive officer, executive employee, other white-collar employee, civil servant, skilled blue-collar worker, other blue-collar worker, self-employed, unemployed, out of labor force
city size [5]	dummies for: up to 5,000, > 5,000–20,000, > 20,000–100,000, > 100,000–500,000, > 500,000 inhabitants
region [1]	dummy with 1 = living in Eastern Germany
foreigner [1]	dummy with 1 = origin in foreign country
household size[5]	dummies for: one-/two-/three-/four-/five-person household
head of household [1]	dummy with 1 = person running the household
children aged 14 or under [1]	dummy with 1 = at least one child aged 14 or younger living in the household
personality traits [8]	see Table B.2
attitudes towards entrepreneurship [5]	see Table B.2

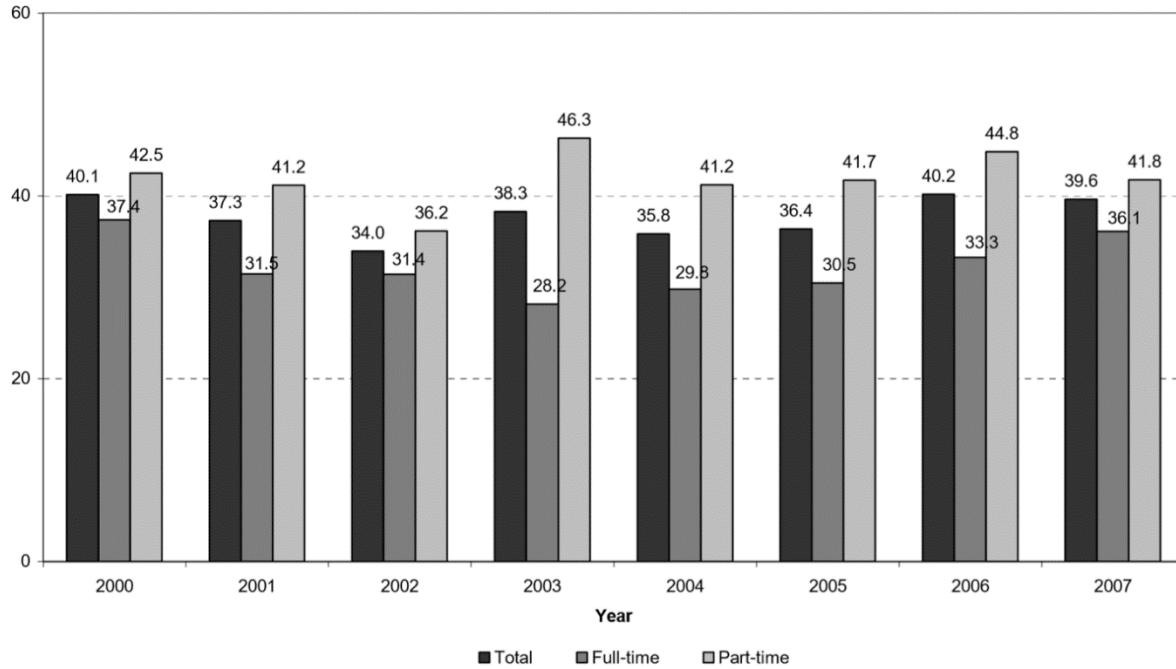
Data source: KfW Start-up Monitor, 2007.

**TABLE 2**  
**PERSONALITY TRAITS AND ATTITUDES TOWARDS ENTREPRENEURSHIP**

Item	Statement	Variable
<b>A: Personality Traits</b>		
(1)	“Financial security is of central importance to me.”	risk tolerance
(2)	“I feel most comfortable if life happens in due process.”	openness
(3)	“I quickly comprehend complex or complicated issues.”	cognitive skills
(4)	“I am willing to put extraordinary efforts in my personal and professional advancement.”	need for achievement
(5)	“Awkward dispositions and personal conflicts and have a negative impact on my personal achievement potential.”	emotional stability
(6)	“Expressing my views and ideas to my environment is difficult for me.”	persuasiveness
(7)	“I often develop and implement new ideas.”	creativity
(8)	“If something goes wrong, I say to myself: ‘Now more than ever!’”	determination
<b>B: Attitudes towards Entrepreneurship</b>		
(9)	“Starting a business is an attractive opportunity for my personal career development.”	desirability of self-employment
(10)	“Current economic and political conditions offer good opportunities for starting a business.”	suitability of current economic conditions
(11)	“An entrepreneur enjoys a good reputation.”	reputation of entrepreneurs
(12)	“My current life circumstances are well suited for starting a business.”	suitability of personal live circumstances
(13)	“I have the personal and professional skills necessary for a successful business start-up.”	entrepreneurial aptitude

Persons assessed the above statements on a Likert scale ranging from one (‘I fully agree’) to five (‘I fully disagree’). We rescaled the answers by means of linear transformation to range from 0 (minimum approval) to 100 (maximum approval of the respective notion). The transformation is  $y = (125 - 25x)$  for items (1), (2), (5), and (6), and  $y = (-25 + 25x)$  for all other items. Data source: KfW Start-up Monitor, 2007.

**FIGURE 1**  
**SHARE OF FEMALE ENTREPRENEURS**



Female entrepreneurs (total/full-time/part-time) as percentage of all entrepreneurs (total/full-time/part-time), population-weighted.  
Data source: KfW Start-up Monitor, 2007.

**TABLE 3**  
**CHARACTERISTICS OF ENTREPRENEURS AND NON-ENTREPRENEURS, BY GENDER**

	entrepreneurs			non-entrepreneurs		
	(1) males	(2) females	(3) significance (1)-(2)	(4) males	(5) females	(6) significance (4)-(5)
<b>age</b>						
18 to 24 years	19.61	15.11	*	13.19	11.64	**
25 to 34 years	30.81	26.78		18.43	16.85	*
35 to 44 years	27.18	33.44	*	27.73	24.53	***
45 to 54 years	13.41	17.93	*	22.09	25.36	***
55 to 64 years	8.99	6.74		18.56	21.62	***
<b>education</b>						
no degree	14.84	15.16		13.62	16.02	***
vocational training	37.88	38.13		47.04	51.34	***
vocational school	7.17	9.74		7.69	11.13	***
technical school	13.22	8.15	**	13.11	6.73	***
technical college	10.38	11.35		7.63	5.98	***
university	14.34	14.42		7.88	6.52	**
other degree	2.16	3.05		3.04	2.29	**
<b>professional status</b>						
chief executive officer	0.56	0.06		1.18	1.07	
executive employee	11.18	6.50	**	14.53	8.08	***
other white-collar employee	9.65	23.90	***	19.19	32.53	***
civil servant	3.61	2.01		5.56	3.27	***
skilled blue-collar worker	5.71	0.98	***	16.15	2.35	***
other blue-collar worker	1.97	3.06		6.39	6.34	
self-employed	44.69	34.76	***	9.82	3.17	***
unemployed	6.59	3.57	*	9.31	7.80	**
out of labor force	16.04	25.17	***	17.87	35.38	***
<b>city size</b>						
up to 5,000 inhabitants	12.74	20.32	***	18.82	18.94	
> 5,000 to 20,000 inhabitants	26.94	24.64		26.02	27.85	*
> 20,000 to 100,000 inhabitants	23.49	20.86		25.80	26.02	
> 100,000 to 500,000 inhabitants	17.56	17.54		17.03	14.44	***

**TABLE 4**  
**DETERMINANTS OF THE START-UP DECISION, POOLED PROBIT ESTIMATIONS**

	(1) gender dummy [full sample]		(2) gender dummy [estimation sample]		(3) plus socio-demographics		(4) plus personality traits		
	dP/dX	std. error	dP/dX	std. error	dP/dX	std. error	dP/dX	std. error	
<b>gender</b> (= female)	-0.0090	*** (0.0015)	-0.0342	*** (0.0063)	-0.0284	*** (0.0065)	-0.0257	*** (0.0064)	
<b>age</b> (ref.: 35 to 44 years)									
18 to 24 years					0.0074	(0.0130)	-0.0037	(0.0126)	
25 to 34 years					0.0286	*** (0.0043)	0.0240	*** (0.0095)	
45 to 54 years					-0.0247	*** (0.0099)	-0.0213	*** (0.0084)	
55 to 64 years					-0.0483	*** (0.0084)	-0.0422	*** (0.0100)	
<b>education</b> (ref.: vocational training)									
no degree					0.0148	(0.0124)	0.0112	(0.0120)	
vocational school					0.0103	(0.0137)	0.0058	(0.0130)	
technical school					0.0428	*** (0.0155)	0.0321	** (0.0144)	
technical college					0.0645	*** (0.0151)	0.0506	*** (0.0140)	
university					0.0854	*** (0.0153)	0.0585	*** (0.0137)	
other degree					0.0860	*** (0.0311)	0.0678	*** (0.0294)	
<b>professional status</b> (ref.: other w.-c. empl.)									
chief executive officer					0.0127	(0.0255)	-0.0074	(0.0208)	
executive employee					0.0116	(0.0107)	-0.0044	(0.0097)	
civil servant					-0.0458	*** (0.0118)	-0.0428	*** (0.0117)	
skilled blue-collar worker					-0.0251	*	(0.0131)	-0.0240	*
other blue-collar worker					-0.0282	*	(0.0146)	-0.0172	(0.0157)
self-employed					0.0239	*	(0.0150)	-0.0010	(0.0127)
unemployed					0.0986	*** (0.0195)	0.0958	*** (0.0195)	
out of labor force					0.0243	** (0.0106)	0.0251	** (0.0107)	
<b>city size</b> (ref.: > 500,000 inhabitants)									
up to 5,000 inhabitants					-0.0117	(0.0105)	-0.0091	(0.0104)	
> 5,000 to 20,000 inhabitants					-0.0117	(0.0096)	-0.0002	(0.0096)	
> 20,000 to 100,000 inhabitants					-0.0091	(0.0093)	-0.0085	(0.0093)	
> 100,000 to 500,000 inhabitants					-0.0087	(0.0099)	-0.0109	(0.0097)	
<b>region</b> (= Eastern Germany)					-0.0233	*** (0.0075)	-0.0199	*	
<b>foreign origin</b>					0.0120	(0.0118)	0.0186	(0.0126)	
<b>household size</b> (ref.: one-person household)									
two-person household					0.0055	(0.0096)	0.0038	(0.0093)	
three-person household					0.0001	(0.0110)	0.0023	(0.0109)	
four-person household					0.0049	(0.0120)	0.0020	(0.0116)	
five-person household					-0.0051	(0.0136)	-0.0073	(0.0131)	
<b>running the household</b>					0.0023	(0.0077)	0.0044	(0.0076)	
<b>children aged 14 or under</b>					0.0021	(0.0086)	0.0062	(0.0090)	
<b>personality traits</b>									
risk tolerance							0.0047	(0.0031)	
openness							0.0110	*** (0.0033)	
cognitive skills							0.0015	(0.0035)	
need for achievement							0.0185	*** (0.0041)	
emotional stability							-0.0041	(0.0030)	
persuasiveness							0.0053	*	
creativity							0.0273	*** (0.0040)	
determination							0.0016	(0.0033)	
number of observations	37,620		8,717		8,395		8,273		
observed probability	0.0212		0.0914		0.0883		0.0885		
estimated probability of reference person	0.0263		0.1104		0.0798		0.0764		
pseudo R <sup>2</sup>	0.005		0.006		0.060		0.085		
log likelihood	-3,842.5		-2,650.9		-2,356.6		-2,264.2		

\*\*\* significant at 10%, 5%, 1% level, heteroscedasticity-consistent standard errors in parentheses.

Coefficients report ceteris paribus effects of changes from 0 to 1 (dummy variables) or increases by one standard deviation (personality traits), respectively. The reference person has (full-sample) mean personality traits (specification (4)).

Data source: KfW Start-up Monitor, 2007.

## DECOMPOSITION ANALYSIS I CHARACTERISTICS AND COEFFICIENTS EFFECTS

	(A) only socio-demographics		(B) including personality traits	
Predicted start-up propensity				
males		0.1083		0.1085
females		0.0722		0.0723
difference		0.0360		0.0362
Counterfactual situation: equation	(A4)	(A5)	(A4)	(A5)
characteristics effect	0.0006 (0.0053) 1.7%	0.0040 (0.0045) 11.1%	0.0079 (0.0052) 21.9%	0.0039 (0.0043) 10.8%
coefficients effect	0.0355 (0.0082) 98.3%	0.0320 (0.0080) 88.9%	0.0282 (0.0074) 78.1%	0.0323 (0.0076) 89.2%

Bootstrap standard errors (100 replications) in parentheses.  
Data source: KfW Start-up Monitor, 2007.

**TABLE 5**  
**DECOMPOSITION ANALYSIS II: RELATIVE IMPORTANCE OF SOCIO-ECONOMICS,  
PERSONALITY TRAITS, AND A BASE EFFECT**

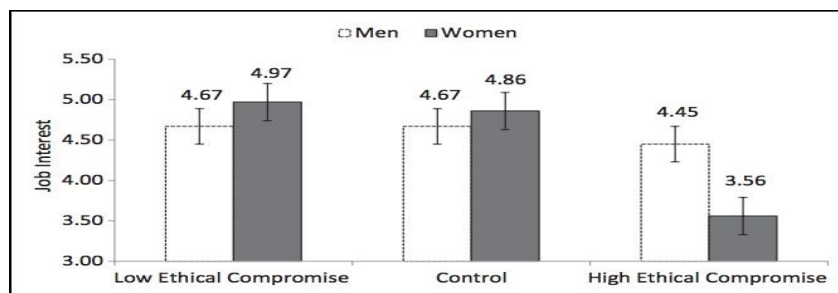
Gender Difference $\hat{\gamma}^m - \hat{\gamma}^f$	Characteristics Effect		Base Effect	Coefficients Effect	
	Socio-demographics $\Delta 1$	Personality $\Delta 2$	$\Delta 3$	Personality $\Delta 4$	Socio-demographics $\Delta 5$
0.0362	-0.0070 (0.0044)	0.0108 (0.0018)	-0.0195 (0.0367)	0.0103 (0.0296)	0.0415 (0.0243)
100.0%	-19.3%	29.9%	-53.9%	28.4%	114.8%

Results of the preferred model with socio-demographics and personality traits.  
Bootstrap standard errors (100 replications).  
Data source: KfW Start-up Monitor, 2007.

## APPENDIX F

Job Interest by gender and ethical compromise conditions.

Kennedy, J. A., & Kray, L. J. (2014). Who is willing to sacrifice ethical values for money and social status?: Gender differences in reactions to ethical compromises. *Social Psychological and Personality Science*, 5(1), 52-59. doi:10.1177/1948550613482987



**Figure 1.** Job interest by gender and ethical compromise conditions in Study 2.

**APPENDIX G**

Table III presents the mean responses to each question for all the respondents, broken down by groupings of companies and each country; and, by gender.

Roxas, M. L., & Stoneback, J. Y. (2004). *The importance of gender across cultures in ethical decision-making*. *Journal of Business Ethics*, 50(2), 149-165.  
doi:10.1023/B:BUSI.0000022127.51047.ef

**TABLE III**  
Mean responses

	1 — 2 — 3		4 — 5 — 6		7			
	Strongly disagree		Neutral		Strongly agree			
	Male	Female	Male	Female	Male	Female		
1. I believe that Jim should say nothing at the moment, but be prepared to admit his mistake if questioned by his superiors.								
Overall	3.37		USA	3.38	2.77	PHI	2.79	2.86
All	3.46	3.22	CAN	3.55	3.43	THA	2.97	3.65
USA, CAN, AUS	3.31	2.93	AUS	2.67	2.23	GER	2.87	2.93
CHI, PHI, THA	2.91	3.15	CHI	2.98	3.11	UKR	5.24	4.82
2. I believe that Jim should say nothing at the moment, but prepare a report to cover his mistake in case he is ever questioned by his superiors.								
Overall	2.74		USA	3.38	2.77	PHI	2.60	2.38
All	2.96	2.53	CAN	3.55	3.40	THA	1.66	1.57
USA, CAN, AUS	3.31	2.93	AUS	2.00	1.46	GER	1.93	1.57
CHI, PHI, THA	2.91	3.15	CHI	2.57	3.22	UKR	5.01	3.31
3. I believe that Jim should attempt to divert attention away from the forecast error and attempt to impress his superiors with his positive qualities.								
Overall	3.01		USA	2.68	2.62	PHI	2.60	2.93
All	2.99	3.00	CAN	3.02	2.48	THA	2.86	2.90
USA, CAN, AUS	2.74	2.81	AUS	2.33	1.77	GER	2.60	1.71
CHI, PHI, THA	2.94	3.15	CHI	3.32	3.97	UKR	3.83	3.55
4. I believe Jim should make discrete inquiries about the personal consequences of admitting the truth before going to his superiors.								
Overall	4.52		USA	3.54	3.22	PHI	4.52	4.15
All	4.62	4.37	CAN	4.18	4.54	THA	5.86	5.51
USA, CAN, AUS	3.91	3.78	AUS	4.25	4.54	GER	3.47	3.21
CHI, PHI, THA	5.46	4.86	CHI	6.00	5.54	UKR	5.31	4.67
5. I believe Jim should indicate to his superiors the fact that actual project outcomes may not be as high as predicted outcomes, without actually admitting any fault.								
Overall	4.05		USA	4.34	4.36	PHI	3.93	3.96
All	4.07	4.04	CAN	4.55	4.38	THA	3.28	3.47
USA, CAN, AUS	4.43	4.29	AUS	4.38	3.62	GER	3.78	4.29
CHI, PHI, THA	3.77	3.80	CHI	4.00	3.86	UKR	4.19	4.21
6. I believe that Jim should immediately tell his superiors about the error he has made regardless of personal consequence.								
Overall	4.71		USA	4.93	5.34	PHI	4.86	5.19
All	4.71	4.86	CAN	4.71	4.76	THA	3.72	4.16
USA, CAN, AUS	4.81	5.11	AUS	4.71	4.92	GER	5.51	4.16
CHI, PHI, THA	4.82	4.74	CHI	5.64	4.54	UKR	3.70	4.47

## APPENDIX H

Table 2 shows the percentage of male and female responses to work-related ethical dilemmas.

Eweje, G., & Brunton, M. (2010). *Ethical perceptions of business students in a new zealand university: Do gender, age and work experience matter?* *Business Ethics*, 19(1), 95-111. doi:10.1111/j.1467-8608.2009.01581.x

**Table 2: Reactions to work-related ethical dilemmas by gender**

	Male		Female		Total	
	Count	%	Count	%	Count	%
<b>All q1<sup>a</sup></b>						
0-3	176	46.8	200	53.2	376	100.0
4-7	114	51.8	106	48.2	220	100.0
8-11	40	67.8	19	32.2	59	100.0
Total	330	50.4	325	49.6	655	100.0
<b>All q2<sup>b</sup></b>						
0-3	98	40.3	145	59.7	243	100.0
4-7	174	53.2	153	46.8	327	100.0
8-11	58	68.2	27	31.8	85	100.0
Total	330	50.4	325	49.6	655	100.0
<b>All q3<sup>c</sup></b>						
0-3	75	41.7	105	58.3	180	100.0
4-7	162	51.9	150	48.1	312	100.0
8-11	93	57.1	70	42.9	163	100.0
Total	330	50.4	325	49.6	655	100.0
<b>All q4<sup>d</sup></b>						
0-3	181	45.3	219	54.8	400	100.0
4-7	126	56.8	96	43.2	222	100.0
8-11	23	69.7	10	30.3	33	100.0
Total	330	50.4	325	49.6	655	100.0

<sup>a</sup> $\chi^2$ -test  $p$ -value = 0.010.

<sup>b</sup> $\chi^2$ -test  $p$ -value = 0.000.

<sup>c</sup> $\chi^2$ -test  $p$ -value = 0.013.

<sup>d</sup> $\chi^2$ -test  $p$ -value = 0.002.



## APPENDIX I

Table 5 shows that there was a significant difference in scores for male and female entrepreneurs in regard to ethical practices.

*Ahmad, N. H., & Seet, P. (2010). gender variations in ethical and socially responsible considerations among sme entrepreneurs in malaysia. International Journal of Business and Society, 11(1), 77.*

**Table 5: Means and Standard Deviations**

Variables	Gender	N	Mean	Std. Deviation
<b>Ethical practices</b>	Male	160	6.052	.805
	Female	52	6.325	.638
<b>Socially Responsible Practices</b>	Male	160	5.420	1.050
	Female	52	5.778	1.086