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The Relationship Between Personality Traits and the Income of Small Business Owners

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Walden University

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Staci L. Parker

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Walden University
2018

Abstract

The Relationship Between Personality Traits and the Income of Small Business Owners

by

Staci L. Parker

MS, Walden University, 2015

BS, Saint Leo University, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

August 2018

Abstract

Researchers have found that the Big Five personality trait of conscientiousness correlated consistently with high performance across industries. However, previous research was limited to self-reported data collected based on the opinions of the participants and did not include the subtraits of conscientiousness (achievement and dependability). Previous studies also did not provide data specific to entrepreneurs operating as small business owners and did not compare them to their peers. Thus, the purpose of this quantitative, correlational study was to explore whether or not there was a relationship between the personality traits of achievement and dependability and the income of U.S. entrepreneurs who operate as small business owners. Maslow's hierarchy of needs was the theoretical framework for the study due to the correlation between the trait variables of the study and the basic needs of individuals outlined in the theory. Although the relationship between personality and the income of small business owners was not significant, small businesses have had an impact around the world and researchers have found that entrepreneurs can positively or negatively affect the employment rate. For this reason, my study supports the recommendation of other studies to continue research so that organization psychologists and individuals in the helping professions can gain a deeper understanding of how the relationship of personality motivation affects entrepreneurial success, in terms of income as a performance measure, by modeling small businesses.

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Dedication

This publication is dedicated to all scholars, particularly those who simultaneously face the challenges of life, work, and education. It is not easy. Life happens. Work is necessary; however, education gives us a sense of freedom.

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It would be criminal for me to exclude all the individuals who supported me, in some form, along my journey. So, following this short list, I say thank you:

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Chapter 1: Introduction to the Study

Introduction

Each year, the Bureau of Labor Statistics (BLS) collects data on the activity of entrepreneurship in the form of small businesses (U.S. Department of Labor, 2016).

Small businesses have been positive contributors to the growth of the U.S. economy and an important source to job creation (Hipple & Hammond, 2016). Researchers have found that higher unemployment rates increased the prediction of self-employment (Fairlie, 2013) and the likelihood of entrepreneurial activity (Carree & Thurik, 2003).

In 2015, 12.7% of individuals living in the United States were identified as entrepreneurs and 15 million small business owners provided employment for other individuals (U.S. Department of Labor, 2016). Seventy percent of the 1.4 million unincorporated small business owners employed 1 to 4 people (U.S. Department of Labor, 2016). However, in the same year, the BLS reported that small business ownership decreased by 1.1 million from the 15 million (10.1% of all U.S. workers) in the beginning of the year, which significantly affected employment opportunities in the country and around the world (U.S. Department of Labor, 2016).

Caird (2013) indicated that training and experience had significant influence on whether an individual decided to become self-employed. Caird's study showed that participants had an average education of 15 years and experience of at least 14 years. Two out of 3 new entrepreneurs also had some experience, particularly in start-ups; however, the focus of Caird's study was also on intention.

Hopp and Sonderegger (2015) conducted telephone interviews during a longitudinal study for over 5 years using entrepreneurs identified as start-ups for small businesses. The researchers sampled 31,845 individuals in 2005 and 1,214 were identified as active individuals seeking to go into business. The study included a second interview in 2006, using the same data collecting instrument and the same variables for participants. A third interview in 2010 completed the study. Hopp and Sonderegger found that experience affected the success of new businesses as did the intention of the small business owners for going into business. A limitation on Hopp and Sonderegger's study was that it did not focus on personality and its relationship to financial success in the form of income. Their focus was on intention and the activities of an entrepreneur leading up to starting a business. They found that some of the possible reasons for failure relating to intention could be connected to lack of training, lack of experience, and the unexamined relationship of personality to the psychological needs of small business owners.

Background of the Study

In my review of the extant literature, I found no studies that examined the psychological needs of small business owners and the influence these needs might have on their financial success. There has also not been a research focus in the field on what motivates this group to succeed (Carlsud & Brannback, 2011). However, Batey, Booth, Furnham, and Lipman (2011) found that three of the Big Five traits (i.e., extraversion, agreeableness, and conscientiousness) indicated entrepreneurship motivation in small business owners. While Brandstätter (2011) found that entrepreneurial motivation was

based on three types of needs (i.e., success, communion, and accomplishment) associated with the three Big Five traits of extraversion, agreeableness, and conscientiousness identified in Batey et al. study. Although the three traits made a difference when predicting entrepreneurial intention, there were no results reported on the influence of these needs on entrepreneurial success.

Using Saucier's (1994) Mini Marker and the Motivational Orientation Measure (31 items) to assess the Big Five traits, Batey et al. (2011) investigated the relationship between personality and motivation and found that 3 of the 5 traits were correlated to motivation, based on need. They also found these traits to be motivators of entrepreneurial characteristics. Extraversion particularly specified a need for status, agreeableness indicated the need for communion, and conscientiousness was associated with the need for accomplishment (Batey et al., 2011).

Wang et al. (2013) examined the interaction between achievement and dependability and how these components of conscientiousness affected the success of entrepreneurial actions. In this study, the researchers associated dependability with duty, conformity, and order. Individuals with this trait were described as disciplined, rule-followers, detailed oriented, and trustworthy (Owens, Kirwan, Lounsbury, Levy, & Gibson, 2013; Wang et al., 2013). However, some researchers associated dependability (duty) as a characteristic of someone who is an employee and not someone who is self-employed (Owens, Kirwan, Lounsbury, Levy, & Gibson, 2013; Wang et al., 2013). A person governed by the achievement orientation was described as an individual who strives for excellence, addresses challenges well, and is goal oriented (Caliendo et al.,

2014; Wang et al., 2013). Researchers also found that there was a contradiction of the two facets of conscientiousness where roles and activities were concerned (Caliendo et al., 2014).

Carsrud and Brännback (2011) found that there were unclear traits specific to entrepreneurship personality, and therefore, a lack of data on entrepreneurial motivation specific to small business owners. Davis, Hall, and Mayer (2016) conducted research using the Entrepreneurial Mindset Profile instrument, which measures intent. Based on three studies, the researchers developed this instrument to establish an inclusive method to measure entrepreneurship intent. In the study, the researchers examined the mindset that establishes the intention of an individual who becomes an entrepreneur, focusing on the personality of the individual to determine intention and not the connection to economic development or success. The authors reported that there is a need for studies to examine the mindset as a separate entity, in terms of small business ownership, and the importance of entrepreneurship activity.

Thurik, Carree, Van Stel, and Audretsch (2008) investigated the relationship between the rates of self-employment and unemployment. These researchers found that high unemployment influenced the intention of self-employment. Indications of higher self-employment rates signified an increased interest in entrepreneurship that reduced unemployment (Thurik et al., 2008).

Meta-analyses have also been conducted to understand the relationship between the personality of an entrepreneur, motivation, performance, and how these individuals compared to others in the workforce. In their meta-analysis, Stewart Jr. and Roth (2004)

used the concept of the five factor model to determine whether managers would score higher than entrepreneurs on the personality trait of conscientiousness. The researchers conducted two studies to examine each component of conscientiousness (i.e., achievement motivation and dependability) separately. The results of their analysis showed that entrepreneurs scored higher on achievement than managers and slightly higher on dependability. Stewart Jr. and Roth also found that there was little supporting evidence that personality was a predictor for entrepreneurial behavior.

Zhao and Seibert (2006) reported results from a meta-analytical review that proposed that entrepreneurs are different from individuals who hold managerial positions. There were 4 out of 5 indicators from essential components of personality that supported this conclusion (Zhao & Seibert, 2006). Further, these individuals in the study were motivated by achievement in relationship to performance. Although Naudé (2013) argued that not enough data has been collected to emphasize the importance of entrepreneurship, Naudé assessed that scholars have not been concerned about the impact of entrepreneurship and its contribution to the economy. Therefore, the concerns of researchers in the field have been finding the answers to who is an entrepreneur, why these individuals become entrepreneurs, and how they function.

The meta-analyses that Frese and Gielnik (2014) conducted on intention and success indicated that the need for achievement was highly related to entrepreneur creation and success. The authors interpreted data from previous studies to address the actions necessary for an entrepreneur to be successful in small business. Their study addressed entrepreneurial orientation and the characteristics (i.e., autonomy,

innovativeness, risk-taking, competitiveness, aggressiveness, and proactivity) shared by individuals identified as entrepreneurs but also included the attitudes of managers.

The results of Leutner, Ahmetoglu, Akhtar, and Chamorro-Premuzic's (2014) meta-analysis study indicated inadequate data for business performance related to entrepreneurship, even though there was a positive relationship between personality and entrepreneurship there was still a gap in the literature. Further, Leutner et al. 2014 argued that the definitions used regarding the relationship between the personality of an entrepreneur were inconsistent, there were personality traits indicative of job performance and job satisfaction. Other personality traits identified in Leutner et al. study related to intention and job creation.

Statement of the Problem

Researchers have found that the Big Five personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism correlated with entrepreneurial success (ES) associated with high performance across industries (Barrick & Mount, 1991; Leutner et al., 2014). However, previous research has been limited to self-reported data that many researchers (i.e., Batey et al., 2011; Davis et al., 2016; Owens et al., 2013) collected from participants who defined entrepreneurship and ES based on their own experience. Furthermore, the same Big Five traits found in entrepreneurs have been found in managers employed in traditional workforce settings (Brandstätter, 2011; Caliendo & Kritikos, 2011). Yet, there are no studies specific to entrepreneurs operating as small business owners that compare one group of small business owners to peers from the same industry. Further, the Big Five have also been

used in research to explain leadership characteristics, high job performance, and satisfaction in the workplace (Srivastava, 2016) but not how it might predict financial success in the form of income. In addition, there has not been a focus on what motivates small business owners to succeed financially (Carsrud & Brännback, 2011).

Maslow's (1943) hierarchy of needs theory offers that all individuals operate on five levels of needs: safety, shelter, social, esteem, and self-actualization (as cited by Sadri & Bowen, 2011); however, more recent studies have not used the concept of need as a tool to understand the motivation of small business owners, separate from the needs of other individuals in the workforce (Carsrud & Brännback, 2011). Previous to my study, no researcher had provided data on the financial success of entrepreneurs operating as small business owners and how conscientiousness (specific to achievement and dependability) influenced their financial success, across specific industries, in the United States.

Caliendo et al. (2014) found that there was a distinction between self-employment and entrepreneurship. Researchers have associated self-employment with the activities that resulted in revenue reported as primary income (Caliendo et al. (2014). The results of my study contribute to the literature in the field that explores if there is a relationship between how much a small business owner earns if they have the personality traits of achievement motivation and individual dependability. In my study, I also explored whether this relationship was associated with the needs connected to these traits.

Purpose of the Study

Traits identified as the Big Five (i.e., openness, conscientiousness, extraversion, agreeableness, and neuroticism) have been used by researchers to explain leadership characteristics, high job performance, and satisfaction in the workplace (Srivastava, 2016). Researchers have also found that the Big Five correlated significantly with outcomes for ES, and of the Big Five personality traits, conscientiousness was found to be associated with high performance across industries (Barrick & Mount, 1991; Leutner et al., 2014). According to Shane, Cherkas, Spector, and Nicolaou (2010), entrepreneurs have different traits that explain their behavior, such as high self-esteem, exceptional social skills, diverse vocational skills, desire for autonomy, and leadership abilities.

Research Questions and Hypotheses

RQ1: Is there a relationship between the achievement motivation trait and the income of U.S. entrepreneurs who operate as small business owners?

H₀1: There is no relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

H_A1: There is a relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

RQ2: Is there a relationship between the dependability trait and the income of U.S. entrepreneurs who operate as small business owners?

H₀2: There is no relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

H_{A2}: There is a relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

With the null hypotheses, I proposed that there was no separate relationship between the IVs (achievement motivation and dependability) and the DV (income). While with the alternate hypotheses, I proposed that there was a relationship between either of the IVs (achievement motivation and dependability) and the DV (income). My study was conducted to explore if there is a statistically significant correlation between the achievement motivation (IV1) of small business owners and dependability (IV2) and the DV of ES, using income to measure success. Since there was more than one independent variable, I used the Pearson product moment to test the hypotheses (see Salkind, 2007).

Theoretical Framework

The theoretical framework for my study was based on Maslow's hierarchy of needs because there was a correlation of the variables in this research (i.e., achievement, dependability, and entrepreneurship) to the basic needs of individuals. Achievement represented one of the subdimensions of the personality trait of conscientiousness (Roberts & Hogan, 2002); however, it was also a method of motivation based on need (Collins, Hanges, & Locke, 2004). Individuals with entrepreneurial characteristics tend to score higher on conscientiousness as a predictor for success and the need for achievement was one of the components of conscientiousness that determined that fact (Stewart Jr. & Roth, 2004). Accordingly, Murray (as cited by Pinder, 2008) found that there was a correlation between human need and emotion. Based on that premise, the need for

achievement was founded on an individual's desire to master their environment so that they may experience the accomplishment of their goals (Pinder, 2008).

Achievement motivation was presented by McClelland in 1961 as a needs-based characteristic (Pinder, 2008) that described entrepreneurship and the trait that explained the desire for an individual to become an entrepreneur (Stewart Jr. & Roth, 2004). In a longitudinal study, McClelland (as cited by Stewart Jr. & Roth, 2004) found that entrepreneurs were motivated by the need for achievement, more so than managers, when comparing the two.

According to Maslow (as cited by Khan, Riaz, & Rashid, 2011), need is one of the most effective methods for motivating individuals to perform. Need produces satisfaction for the individual while systematically providing results on the basis that human beings desire basic happiness (Khan, Riaz, & Rashid, 2011). These desires are fulfilled in the form of safety, interaction, feelings of self-worth, and self-awareness (Schultz & Schultz, 2008). Maslow (as cited by Schultz & Schultz, 2008) asserted that unmet needs produced a strong desire for achievement, which is self-actualization in another form. Therefore, once basic needs are met, higher levels of the hierarchy are fulfilled. This theory is based on the premise that individuals are instinctively motivated by systems attached to fulfilling their beliefs and values (Rogelberg, 2007).

Nature of the Study

The nature of this quantitative, correlational study was to identify the relationships between the IVs of achievement and dependability (i.e., Big Five subtraits of conscientiousness) and the DV of financial success, in terms of income for small U.S.

business owners. This design provided a focus on the achievement motivation and dependability traits of entrepreneurs in small business and their effect on income levels. I chose this type of study over a qualitative approach for three reasons:

1. A quantitative study provided an emphasis on the research which described the personality traits of entrepreneurs in small business.
2. The sample size ($N = 60$) did not allow the time needed to conduct research for a qualitative study.
3. The survey instruments provided a description of attitudes and trends of the sample population.

Definitions

Small business owners are often referred to as entrepreneurs (Carree & Thurik, 2003; Gartner, 1989; Zhao & Seibert, 2006). Researchers have used several definitions to describe entrepreneurship, self-employment, and small business ownership. Caird (2013) specifically indicated that the definition for entrepreneurship is determined by more than a position and is broader than business ownership.

Naudé, (2013) defines entrepreneurs in three parts:

1. *Behavioral or socially inspired*: Determines the economic growth and the drive for competition that determines the role of the individual and dictates the actions associated with the behavior (e.g., risk taking).
2. *Occupational or work related*: The actions of an individual connected to a type of success that can be measured by financial gain.

3. *Synthesis or the mixture of socially inspired and work-related activities: A combination of the first two definitions (e.g., resources, processes, mental state, and opportunity).*

Naudé further defined *self-employed people* as individuals identified as entrepreneurs with a desire for economic opportunities and/or to satisfy a behavioral trait. Other researchers have described *entrepreneurs* as founders and managers of new businesses, whose primary objective is economic growth (Carree & Thurik, 2003; Gartner, 1989; Zhao & Seibert, 2006). An operational definition for a *small business owner* was used by Owens et al. (2013) in three parts. For my study, I referred to *entrepreneurs* and *self-employed people* as small business owners in accordance to Owens et al. following definition:

1. “an individual who, is at least one-third owner of a small business,
2. is involved in the day to day management of the business, and
3. has been operating in the business, no less than six months” (p. 77).

Given the contribution of small business owners to the vitality of the U.S. economy, researchers have examined why individuals go into business for themselves and whether there are specific characteristics of individuals who do so. In my study, I examined the impact of personality on the financial success of small business owners in the United States.

Assumptions

One of the assumptions in my study was that entrepreneurs were motivated by the same needs as other individuals. Researchers have indicated that entrepreneurs, compared to managers, do share the same Big Five traits (Carsrud & Brännback, 2011). However, there is a level of personality difference among these two roles. Further, these traits were found to indicate how an individual navigates through the entrepreneurship process. For instance, research showed that a low score on neuroticism negatively correlated to entrepreneurship intention (Carsrud & Brännback, 2011).

Another assumption in this research was that entrepreneurship is deliberate. Antoncic, Kregar, Singh, and DeNoble (2015) addressed intention and presented findings on the psychological factors that affected decisions to start a business by comparing nonentrepreneurs to entrepreneurs using the Big Five traits. They collected data through structured interviews of 546 participants not living in the United States and found that there was a clear relationship between personality and the intent for entrepreneurial tendencies. However, their study did not include results that showed the relationship between intention and the actual decision to start a business by these participants.

A third assumption in my study was that there was no physical or biological attribute that entrepreneurs possessed different from other individuals. Shane et al. (2010) sampled 3,412 identical and fraternal twins from the United Kingdom and 1,300 identical and fraternal twins from the United States to show whether genes explained how the two variables varied between the Big Five traits and entrepreneur tendency. They found that genes did influence the prediction of physical traits in a person and that there was a

relationship between extraversion and openness and entrepreneur tendency. Although the relationship between the traits and tendency was insignificant, they showed that most of the relationships were due to genetics.

Scope and Delimitations

I designed my study using data from the U.S. Department of Labor's, BLS on the activity of small business owners. This data is collected by the BLS several times a year as trends and the status of the economy changes (U.S. Department of Labor, 2016). The rapid and frequent changes in this data may cause the relevance of my study to be questioned; however, data were collected by the BLS and other Department of Labor entities to be included as secondary data. I collected the primary data from the General Enterprising Tendency test (GET) to assess individuals for personality traits of entrepreneurial tendency. The Big Five Instrument (BFI-10) is a 10-questionnaire personality survey that I also used to assess the integrity of the GET and to ensure that there was a checks and balance for the self-reported data. One of the threats to the reliability of the data collecting process in previous research was that the data were solely self-reported. In my study, I collected data through assessments, which could only be self-reported, for the purpose of identifying personality traits.

Recruitment was a boundary for me. Although I had identified several organizations for solicitation, confidentiality was an issue. Some organizations were apprehensive about sharing the identity of their members; however, my study was based on anonymity and eased the concern for that issue. At the same time, organizations who agreed to involve their members posed an issue for the sample size; therefore, anonymity

limited my control to achieve the sample size needed. According to the G-Power 3.1 analysis (see Appendix A), it was necessary to recruit a total of 60 participants, based on the number of groups identified in my study. Given the response from the organizations, participation was lower than the total number of individuals who were asked to participate. Individuals who did not agree to complete the consent form opted out of participation and ultimately affected the sample size.

The focus of my study was to specifically address the problem in data collection and to understand the relationship between the personality traits of entrepreneurs, specific to small business owners and income. One of the problems in previous research on the topic has been how the data has been collected, what instruments were used, and from whom the data were collected. Initially, I collected data only from identified entrepreneurs who were recognized as small business owners by organizational affiliation. Later, I expanded data collection to social media which included detailed information regarding the study.

Limitations

Stewart Jr. and Roth (2004) found that achievement motivation and dependability may directly influence ES. However, one limitation was that the research did not provide data on entrepreneurs operating as small business owners and how these traits correlated to their success across specific industries in the United States. Stewart Jr. and Roth also found that there were few studies conducted on ES that focused on achievement motivation and dependability as a complete aspect of conscientiousness for small

business owners. It was also unclear which combination of components predicted low performing entrepreneurs as it related to conscientiousness.

Another limitation was that there was little extant research to be found comparing entrepreneurs to each other, particularly as it related to industry. Frese and Gielnik (2014) found that there was no separation of entrepreneurship from traditional employment activities and referred to entrepreneurship as a “process with different phases” and not an alternative to the traditional employee/employer relationship (p. 432).

A third limitation was data collection. Self-reported data was used (see Leutner et al., 2014) along with instruments normally used to survey business activities during its formulation (see Hopp & Sonderegger, 2015). These surveys were used to determine business creation from intention and not to identify the entrepreneurial aptitude of small business owners for success (see Hopp & Sonderegger, 2015).

A fourth limitation was that although there are two subtraits of conscientiousness, achievement motivation had been widely studied while dependability had not (Stewart Jr. & Roth, 2004). With the assumption that achievement was associated with performance and business success, researchers have described dependability as dutifulness, a characteristic of conscientiousness which describes someone who only made a good employee, not a business owner (Caliendo et al., 2014). At the same time, in Brandstätter’s (2011) study, achievement was found to be one of the motivators for ES, although it was not clear whether it was a personality trait that predicted success. Further, researchers have also acknowledged conscientiousness as one of the elements of intention and entrepreneurial motivation; however, dependability was not included as one of the

key elements for entrepreneurial success even though it is a component of conscientiousness (Brandstätter, 2011). Therefore, research has been limited on data about dependability compared to available data on achievement, which raised questions concerning the two components of conscientiousness and the attention spent on one aspect over the other (Brandstätter, 2011; Caliendo & Kritikos, 2011; Litwin & Phan, 2013; Wang et al., 2013).

I found the final limitation in a 2013 study conducted by Owens et al.. These researchers used three indicators (i.e., business, sales, and profit growth) frequently used to identify business success in entrepreneurship research. In this study, the researchers found that the variables of age, size of company, and type of business had no positive significance to the relationship between performance, satisfaction, and personality traits that described ES. The focus of their study was on success, related to satisfaction, but was based on definitions for satisfaction and success gathered from individuals who were not clearly identified as small business owners.

Significance of the Study

The results of my study contribute to the existing body of research by focusing on areas that were lacking in research about the personality traits of achievement and dependability and how these traits might influence small business success in the form of income. In my study, I also examined the significance of achievement and dependability by comparing one group of financially successful small business owners to other small business owners of the same group located in the United States. The significance to identifying the traits of high performing entrepreneurs meant understanding how small

business owners assist in producing and sustaining a healthy global economy, once an understanding of the connection between psychological need and performance was established.

Significance to Theory

Maslow's hierarchy of needs is one of the theories that served as the groundwork for the United States and other economies (Maslow, 1987). Applying this theory to what is known about subpersonality traits of achievement and dependability, an organization psychologist can provide data that can pinpoint the key to a healthy, global economy. Maslow (1987) proposed that there are five human needs that motivate the activity of human beings. Behavior is the cornerstone of Maslow's hierarchy and is fundamental to the theories of motivation. Caird's (2013) argument for using the GET test was that an individual identified with the characteristics of an entrepreneur may be developed through education and training. Maslow's theory was an effective consideration when designing programs and services for entrepreneurs interested in pursuing small business or training to sustain the business they had already established.

Previous research indicated that risk tolerance, preference for autonomy, and innovativeness are empirically and theoretically important in determining who becomes an entrepreneur (Fairlie, 2014). Research has also shown that individuals who are more risk tolerant benefit more from entrepreneurship training than individuals who are less risk tolerant (Fairlie, 2014). Entrepreneurship training may have benefited risk-tolerant individuals more because they are predisposed to take the risk of becoming a business owner (Fairlie, 2014). Information from training programs have led more individuals who

are not opposed to risk to reconsider business ownership (Fairlie, 2014). The findings from Fairlie's (2014) analysis contributed to the knowledge about the usefulness of entrepreneurship training programs. Training of this kind could reduce some of the barriers of risk to produce businesses that create employment.

Maslow's theory related to the basic needs of all humans and addressed the global needs of our economy. The five human needs forming the theory are physiological, safety, love/belonging, esteem, and self-actualization. According to Maslow, each need must be satisfied in the order from the most basic to the most complex (Sadri & Bowen, 2011). Achievement and dependability were recognized traits in entrepreneurs (Sadri & Bowen, 2011). Achievement motivation is related to the accomplishment of any of the five needs in Maslow's theory, while dependability related to safety or belonging and esteem (Lester, 2013; Maslow, 1987).

Significance to Practice

Researchers have maintained that more education, training, and research was necessary to learn about entrepreneurs (Shane, Locke, & Collins, 2003) who are defined as small business owners in the United States because these people strongly influence the economy (Carsrud & Brännback, 2011). In 2015, 15 million small business owners provided employment for other individuals (U.S. Department of Labor, 2016). Seventy percent of the 1.4 million documented, unincorporated, small business owners employed one to four people (U.S. Department of Labor, 2016).

In the same year, the BLS reported that small business ownership decreased by 1.1 million (10.1% of all U.S. workers), which significantly affected employment

opportunities in the country and around the world (U.S. Department of Labor, 2016). In past years, research showed that small businesses positively affected the global economy and that there was a relationship between the increase in small business ownership and the unemployment rate (Thurik et al., 2008). Consequently, the employment rate affected everything else (i.e., education, crime, and housing; Thurik et al., 2008).

In the field of organization psychology, there has been an increasing concern about issues attached to leadership, job satisfaction, employee motivation, and other components that determine a productive work environment. Motivation influences us all as human beings and in most areas of our lives, and it is the common thread for our behavior, reactions, and what stimulates us to act (Mitchell & Daniels, 2004). Therefore, research in this area is vital to professionals who provide data for others and who contribute to the research in organization psychology. From this perspective, my aim in my study was to influence how organizational psychologists view *need*, as a motivating tool, and its influence on personality in the U.S. workforce. Moreover, this influence was viewed as a vehicle to increase job creation and a thriving economy driven by small business owners.

Significance to Social Change

Small businesses have had an impact around the world due to globalized markets. Researchers have found that entrepreneurs influence the economy and have positively or negatively affected employment (Carree & Thurik, 2003). Therefore, researchers have found it important to understand how small business owners fit into the realm of the U.S.

economy and how understanding the personality and motivation of an entrepreneur can stimulate the growth of the U.S. economy (Naudé, 2013).

In recent studies, unemployed individuals responded positively to unemployment by starting a business (Fairlie, 2014). Development agencies have been depending on small businesses to improve and sustain the success of economies around the world (Naudé, 2013). The significance to identifying the traits of high performing entrepreneurs lay in understanding how small business owners assisted in sustaining the development of both the U.S. and other economies around the world.

Summary and Transition

In my study, I examined the interaction between achievement and dependability and how these components of conscientiousness affect the success of entrepreneurial actions. Some researchers found that the Big Five personality traits were reliable and valid predictors for performance (Barrick & Mount, 1991; Barrick, Mount, & Judge 2001; Hurtz & Donovan, 2000). However, Wang et al. (2013) reported that these traits were normally associated with traditional work settings that exclude entrepreneurs.

For years, researchers have examined achievement motivation and how it predicts job satisfaction and job performance associated with managers, sales people, and other occupations. However, the other subtraits of conscientiousness had been noted as highly related to an employee but not a small business owner. While not nearly as much data has been collected on dependability, the same is true regarding its association with ES. In Chapter 2, I will share the contradictions and limitations in research regarding definitions, self-reported data, instruments used, and data collection.

Chapter 2: Literature Review

Introduction

Small businesses have often been founded by individuals who are referred to as entrepreneurs (Carree & Thurik, The impact of entrepreneurship on economic growth, 2003; Gartner, 1989; Zhao & Seibert, 2006). Self-employed people have also been individuals identified as entrepreneurs with a desire for economic opportunities and/or to satisfy a behavioral trait (Naudé, 2013). Carree and Thurik (2003) defined entrepreneurship as a “behavioral characteristic of persons” and suggested that small businesses have been an excellent method for entrepreneurs to achieve personal goals (p. 5). Given the importance of entrepreneurs to the viability of the economy, researchers have examined the specific personality traits that have characterized entrepreneurs. Shane et al. (2010) also found that there were certain attitudes of an individual that related to the characteristics of an entrepreneur that McCrae and Costa Jr., (1999) outlined from the five factor model as high self-esteem, exceptional social skills, diverse vocational skills, desire for autonomy, and leadership abilities.

In this chapter, I will outline the strategy I employed to gather the literature presented as background from other studies. The basis for which I chose the theoretical framework of my study is explained to show the relationship between need and the variables and are introduced in subsequent sections. Previous research is discussed in this chapter and results are compared from one study to another to identify gaps in research and to offer recommendations for future study.

Literature Search Strategy

I conducted the search for literature to review for my study using the Psychology databases of PsycINFO for abstracts of scholarly journal articles, book chapters, books, and dissertations. My study also included topics that overlapped disciplines. Therefore, I used other databases (i.e., Business Source Complete, ProQuest [ABI INFORM]) to enhance the results of the search.

I conducted my initial search in PsycINFO using keywords: *entrepreneur*, *predict**, and *success**, to identify 42 peer-reviewed articles, published from 1970–2016; 33 were empirical studies and 26 were quantitative. Using the same keywords, 552 results were found in ProQuest (ABI INFORM) with the publication dates of 1970–2016, and 100 from Business Source Complete, with the publication dates of 1970–2016. I also searched, suggested by the Walden Librarian, the databases of Emerald, Sage, Taylor & Francis, Science Direct, and Academic Source Complete, because they were suggested by a Walden librarian, but the results from these databases were not relevant to the overall research topic.

Later, I added other keywords (i.e., *conscientiousness OR achievement and dependability*) that were specific to the research. The results of this search narrowed the articles to 16 in PsycINFO between the publication years of 1984–2015. However, when these keywords were added to the ProQuest (ABI INFORM) search, there were only two results. These articles were specific to personality traits: one on parenting and the other on financing social projects. When I focused my search to the past 16 years in ProQuest (ABI INFORM) with the following search indicators: *(all(entrepreneur) AND*

all(predict) AND peer(yes) AND type. exact ("Scholarly Journals" OR "Dissertations & Theses") AND at. exact("Article") AND la. exact("English")) AND peer(yes) AND type. exact ("Scholarly Journals" OR "Dissertations & Theses") AND at. exact("Article") AND type. exact ("Scholarly Journals")*, the results were narrowed down from 552 to 163.

I used the same keywords for specific topics from previous searches (i.e., *entrepreneurship theory, history (of the Big Five, and meta-analyses of entrepreneurial performance)* to search Google Scholar. When using these keywords, between the publication years of 1900–2016, there were 19,500 results. I then added other keywords with varying combinations (i.e., *dependability, small business, performance, entrepreneurship and performance; entrepreneurial status and personality; entrepreneurship status and personality; dependability and entrepreneurship status; and personality trait and conscientiousness*) and narrowed the dates down to the years of 2000–2016, and the results were reduced to articles that were related to the original search on the Big Five traits (*extraversion, agreeableness, conscientiousness, and neuroticism*). There were no articles found for these specific traits (individually) regarding performance and entrepreneurship. I then added the following keywords to expand the previous search in Google Scholar: *personality models, big five, five factor theory, agreeableness, personality characteristics, and entrepreneurship performance*. This updated search resulted in 68 articles from years of 1987–2016. These 68 articles also provided me with 28 references that I used as new search opportunities that were specific to motivation theories (i.e., *self-efficacy, person-entrepreneurship fit, and entrepreneurship*).

Additionally, I used the American Psychological Association (APA) website to conduct searches for recent empirical, theoretical, and quantitative studies on conscientiousness or achievement and dependability. The results from this search were studies on subjects other than the variables of the research (i.e., *entrepreneur, success, conscientiousness or achievement, and dependability*). Combining the results of all the databases I searched (i.e., PsycINFO, ABI INFORM, Google Scholar, APA, and Business Source Complete) resulted in nearly 400 articles found between the publication years of 1970–2016 specific to my study. The other articles included unrelated information on separate topics (e.g., *academic achievement, educational attainment, error of measurement, law enforcement, college studies, cognitive research, investment and business articles, gender etc.*).

Theoretical Foundation

Maslow's (1943) theory asserted that the survival of an individual depended on five levels of needs: safety, shelter, social, esteem, and self-actualization. The last three levels (i.e., social, esteem, and self-actualization) relate to the development and progress (achievement) of an individual (Simons, Irwin, & Drinnien, 1987). All five needs translate beyond the personal scope of individual experiences and into the workforce as professional practices (Simons, Irwin, & Drinnien, 1987).

In a study of 105 employees sampled from different public and private businesses, Khan et al. (2011) found that employees were motivated through the need to achieve. Using the variables of satisfaction, conditions, and growth, they showed that growth was the strongest predictor for motivation. However, Khan et al. study associated growth with

individuals who were employees seeking personal opportunities from a professional environment and developmental growth, not growth explained by financial gain. Grant and Sumanth (2009) found that people with a strong need to give were usually attracted to circumstances or environments where this desire could be fulfilled. These findings supported Markman and Baron's (2003) claim that individuals pursued entrepreneurship to fulfill personality characteristics, and therefore, gravitated to environments conducive to satisfying those desires.

Achievement orientation is recognized as the need for accomplishment (Caliendo & Kritikos, 2011). An example is when an individual is interested in meeting high expectations and experiencing the ability to solve high level problems (Caliendo & Kritikos, 2011). Researchers have indicated that individuals who have a high account for achievement are expected to succeed as entrepreneurs (Caliendo & Kritikos, 2011). At the same time, when a person scored high on achievement or dutifulness, the likeliness of them succeeding in entrepreneurial endeavors was negatively linked to success (Caliendo & Kritikos, 2011).

Schneider and Alderfer (1973) submitted that dependability is also a reflection of need and is expressed more specifically as a social need. They also described this type of need as the need to belong (Schneider & Alderfer, 1973). According to Maslow, belongingness mirrors the need to feel safe (Lester, 2013). Belongingness (safety) sustains the existence of the individual by providing a sense of relatedness (Maslow, 1987). In other words, individuals with a strong sense of dependability (duty) care about

the relationships that they form and ultimately need these relationships to feel successful (Maslow, 1987).

Relatedness is what Maslow referred to as a love need (Pinder, 2008). This need fulfills the desire for respect and approval and is essential for an individual to feel secure (Pinder, 2008). Social interactions and developing relationships provides individuals, who have a strong sense of duty, with this feeling of security (Pinder, 2008). Greenberg (2011) explained that individuals naturally need to have close relationships and look for people who accept and appreciate them. Pinder (2008) also offered that relatedness provides a sense of growth, in relationships, environments, and other forms of expansion as well.

Lester (2013) used two scales to measure Maslow's theory in a sample of 51 college students. The findings indicated that the corresponding scales did not correlate significantly and positively with scores for Maslow's five needs, except for physiological needs. Nevertheless, Maslow's hypothesis that psychopathology would be predicted by need deprivation was not supported (Lester, 2013). However, the variables were different in my study and my hypotheses proposed that need was a basis for entrepreneurial behavior that is related to the subtraits of conscientiousness, which are motivated by one of the five needs.

Literature Review

Previous research has indicated that entrepreneurs possess specific personality traits connected to self-employment. Srivastava (2016) found that the traits identified as the Big Five (i.e., openness, conscientiousness, extraversion, agreeableness, and

neuroticism) have been used in research to explain leadership characteristics, high job performance, and satisfaction in the workplace. Leutner et al. (2014) conducted a study, using a 44-item self-report scale known as the Measure of Entrepreneurial Tendencies and Abilities, to determine personality traits identified as relevant to ES. Six hundred and seventy individuals participated (322 men and 348 women) with an average age of 33 years old (80.3% between the ages 19 and 43). The researchers found that the Big Five correlated significantly with outcomes for ES that related to social and corporate entrepreneurship; however, small business ownership was not included.

Further, Barrick and Mount (1991) found that certain traits predicted the characteristics of an individual. These characteristics Barrick and Mount found formed the personality of the individual. Some traits consistently predicted job performance for the occupational groups identified in their study as professionals, police officers, managers, salespeople, and skilled/semiskilled workers.

Hough and Ones (2001) identified the Big Five personality traits as valid predictors of job performance and specific to behaviors related to types of performance (i.e., a salesperson or manager). Zhao and Seibert (2006) used a meta-analytic approach to examine the influence of personality on entrepreneurial status by comparing managers to individuals identified as entrepreneurs. Using the Big Five personality traits, Zhao and Seibert found that entrepreneurs scored more positively than managers on conscientiousness and openness and more negatively than managers on agreeableness and neuroticism/emotional stability. However, these studies did not include specific small business owners in industries that the BLS identified as successful.

Researchers have also found that a low score on neuroticism related to a high level of confidence associated with a positive predictor for performance (Barrick & Mount, 1991; Leutner et al., 2014; Zhao & Seibert, 2006). In addition, individuals with a low score on agreeableness also showed a positive correlation to entrepreneurial success (Barrick & Mount, 1991; Leutner et al., 2014; Zhao & Seibert, 2006). Extraversion and openness were the higher scores related to entrepreneurial status (Barrick & Mount, 1991; Leutner et al., 2014; Zhao & Seibert, 2006). Both traits identified individuals who were self-confident, leaders, passionate, curious, and untraditional (Zhao & Seibert, 2006). Both traits were also positively related to occupations that were enterprising in nature and essential for identifying individuals with entrepreneurial traits (Zhao & Seibert, 2006). However, of all the Big Five traits, researchers found that a high score on conscientiousness consistently predicted a positive correlation to high job performance but only in managers (Barrick & Mount, 1991; Leutner et al., 2014; Zhao & Seibert, 2006). Judge and Ilies (2002) found that although extraversion, conscientiousness, and openness were all traits of an entrepreneur, conscientiousness was the only trait that positively affected entrepreneurial success consistently.

Based on Hogan and Hogan's (1989) Employee Reliability Index, the California Psychological Inventory, Minnesota Multiphasic Personality Inventory, Self-Directed Search, and the Armed Services Vocational Aptitude Battery, high employee reliability scores were related to conscientiousness as it related to dependability. From a meta-analysis, Barrick and Mount (1991) found that Hogan and Hogan's index identified conscientiousness as the most prominent trait related to personalities associated with

performance. However, conscientiousness has two components (i.e., achievement motivation and dependability) that create this trait (Barrick & Mount, 1991).

In another meta-analysis of 14 independent samples, from 12 studies, that included 3,000 participants, Stewart Jr. and Roth (2004) conducted a study. Research showed that there was a correlation between the components of conscientiousness (achievement motivation and dependability) and entrepreneurial success. Research also indicate that entrepreneurs have higher achievement motivation and slightly higher dependability scores compared to managers (Stewart & Roth, 2004). Additionally, individuals who found the role of entrepreneurship appealing were motivated by achievement (Stewart & Roth, 2004) and individuals with higher scores on achievement were identified as potentially successful entrepreneurs (Shane et al., 2003). In these studies, none of the entrepreneurs were specifically identified as small business owners in the industries identified by the BLS.

In contrast, Collins et al. (2004) found that 20 out of the 23 meta-analyses reviewed, there was a positive relationship between achievement motivation and new entrepreneurs, only. One of the studies found a positive relationship between performance of entrepreneurs and achievement motivation (Collins et al., 2004). From 2005-2009, Caliendo and Kritikos (2014) conducted a longitudinal study that included 22,000 participants from the German Socio-Economic Panel. Participants were between ages 19 and 59. The results from the study showed that self-employed individuals had higher average scores on extraversion and openness, and lower scores on agreeableness and neuroticism. Although the study did not report scores on conscientiousness, it did

show that personality was a positive indicator for self-employment. A limitation of this study is that it was conducted in Germany while my study only includes data collected in the United States. Many of the studies presented research that was limited to self-reported data, which many researchers (Batey, et al., 2011; Davis et al., 2016; Owens et al., 2013) used to collect data from participants.

Batey et al. (2011) found that three of the Big Five traits (extraversion, agreeableness, and conscientiousness) indicated entrepreneurship motivation in small businesses which Brandstätter (2011) reported that these motivations were based on three types of needs (success, communion, and accomplishment) associated with the three Big Five traits (extraversion, agreeableness, and conscientiousness) identified in Batey et al. (2011) study. Although the three traits made a difference when predicting entrepreneurial intention, there were no results reported on the influence of these needs on entrepreneurial success.

Using intention as a motivating factor, Antoncic et al. (2015) conducted face-to-face interviews with 546 participants, from Slovenia, to determine the decision to start a business. The study showed that there was a relationship between personality and intent but did not report whether intention or personality was a predictor for entrepreneurial success. To some degree, Caliendo et al. (2014) study supported Antoncic et al. (2015) study because research showed that personality did influence entrepreneurial intention, still the research did not report intention as a predictor for entrepreneurial success.

In a previous study by Barrick and Mount (1991) research showed that of the Big Five traits, conscientiousness was a consistent predictor of performance for occupations,

such as professionals, police, managers, sales, and skilled/semi-skilled workers. While extraversion was a valid predictor for two of the occupations (managers and sales) relating to the social nature of the jobs and openness and extraversion were valid indicators for training aptitude. Although Barrick and Mount's research was on job performance, the study only related to traditional roles and not entrepreneurs. In fact, there were no reports on predictors for entrepreneurial success regarding financial status. The sub-traits of conscientiousness predicted performance in entrepreneurs. Therefore, Costa, McCrae, and Dye's (1991) research supported Barrick and Mount's research which reported that performance was based on achievement and dependability (duty, conformity, and order) and that achievement impacted business with a strong association (Frese & Gielnik, 2014) to creation and success.

From the research conducted by Wang et al. (2013) using students from the Executive Master of Business Administration program one of the two studies included 167 participants from the program, and the other included 269 students from the same program. Research showed that the impact of dependability and achievement only provided validity and support for using personality assessments to identify managerial strategies for better execution of goals, unrelated to entrepreneurial success.

Unlike Wang et al. (2013) research, in a meta-analysis on achievement motivation, Collins et al. (2004) found that there was a relationship between achievement motivation and the personality of an entrepreneur. Other researchers also found there was evidence that significantly associated achievement motivation with entrepreneurial performance. Using McClelland's (1972) nAch concept from the need for achievement

theory, Collins et al. found that there was a mean correlation of achievement motivation to performance ($r = .46, p < .01$ for 8 studies on groups; $r = .18, p < .01$ for 20 studies on individuals). Research showed that nAch, as a construct is significant to determining the motivation of an entrepreneur because this construct is associated with the need to achieve, a component of conscientiousness. Nevertheless, there were no studies that showed the difference between entrepreneurial traits and the traits of other professions, regarding the psychological needs of these individuals.

Ayala and Manzano (2014) conducted a longitudinal study based on the correlation of success and the persistence, attitude, and stamina of the entrepreneur. Although this is a longitudinal study, as suggested by other researchers for future study (Caliendo & Kritikos, 2011; Hopp & Sonderegger, 2015; Litwin & Phan, 2013), this study was industry specific, as well as gender specific. The data gathered were based on a location outside of the United States (Spanish tourism) that did not concentrate on the Big Five personality traits. Still, Ayala and Manzano's study examined the association between the stamina and success of entrepreneurs, as well as small growth in small business ownership. Brandstätter's (2011) meta-analysis also focused more on international data from the past 20 years but included the Big Five traits in correlation to entrepreneurial success but, the comparisons used were with managers and not entrepreneurs.

Most of the studies argued whether entrepreneur intention can be predicted by the Big five traits. Brandstätter's (2011) study listed these traits as indicators for entrepreneurial performance and specifically noted that achievement motivation

(conscientiousness) related favorably to business success but did not clearly state what kind of success (e.g. financial, growth, etc.). Data were not collected for entrepreneurial intention; however, researchers (Hough & Ones, 2001; Shane et al., 2010) suggested that genetics might be a component for influencing intention. Brandstätter's study also included evidence that achievement is one of the motivators for entrepreneurial success, although it is not clear whether there is evidence that it is a personality trait that predicts financial success.

Barrick and Mount (1991) hypothesized that conscientiousness and neuroticism would be positive predictors for high performance in all areas of occupations. Researchers found that of the two traits, only conscientiousness was a predictor for high job performance while neuroticism proved the opposite. Thus, some traits were predictors for high job performance because of the specific occupation (sales, management, and production). Extraversion predicted high performance in sales as well because of the interaction required in this occupation, while openness showed a low indication for high job performance unless the occupation was in an area that required a high aptitude for training and development or a desire for emphasis on learning experiences.

Further, the focus of the study conducted by Barrick and Mount was only on job performance related to traditional roles (salesperson, managers, production worker) and not entrepreneurs (business owners). Consequently, there was no performance evaluation indicated as a method for measuring entrepreneurial success except by tasks. In addition to Barrick and Mount's study, researchers also indicated in other studies (Brandstätter, 2011; Caliendo et al., 2014; Frese & Gielnik, 2014) that conscientiousness correlated to

the need to achieve but not necessarily as it related to success and entrepreneurial personality traits. Further, Brandstätter's (2011) study acknowledged conscientiousness as one of the elements of intention and entrepreneurial motivation while, dependability was not included in the discussion as one of the key elements for entrepreneurial success even though it is a component of conscientiousness.

Caliendo and Kritikos (2011) examined the components of personality traits that explain entrepreneurs (risk tolerance, trust, reciprocity, autonomy, role models). The researchers found that to gather meaningful data for future research, studies needed to be conducted in new ways so that research is available on entrepreneurship. In addition, in future research, more longitudinal studies should be conducted. In describing the basis for entrepreneurs, researchers found that most entrepreneurs have been reported male, and are managers of a different caliber and nature than traditional managers because of the apparent personality traits found in these individuals, contrary to traditional managers in a traditional workforce setting. Researchers in this study examined the characteristics that drive individuals to entrepreneurship and to what extent these traits cause these individuals to be successful.

Caliendo and Kritikos (2011) further examined the psychological nature of entrepreneurs but also examined the socio-economics of entrepreneurship, as it pertains to success, the influences that cause individuals to become entrepreneurs, and how these influences correlate to entrepreneurial success. Caliendo and Kritikos' (2011) study also examined self-employed women and if gender had an influence on whether an individual would go into business or not. Researchers also examined the success of this person once

she is in business, based on the influence of gender. All the components of personality were examined, along with components that might have influenced the reason individuals go into business and whether these components determine success. However, the Big Five traits, known to identify traits that predict performance (extraversion, conscientiousness, agreeableness) or success, were not included in Caliendo and Kritikos' (2011) study.

Later, in a 2014 study, researchers (Caliendo et al., 2014) addressed again if the Big Five traits of personality, indeed, influenced if an individual would become an entrepreneur (self-employed) and if so, were these traits indicative of the success of these individuals? In Caliendo et al. (2014) report, researchers did discuss these traits and the question was still whether personality influenced if an individual would go into business for him or herself, and if these traits influenced whether these individuals stayed in business because of their success? In Caliendo et al. (2014) study, researchers found that personality influenced whether an individual would go into business and even dictated the structure of the business process that an individual chose. This data supported Wang's (2013) study on the two facets of conscientiousness (achievement and dependability) in that, researchers found that these two components influenced the process and the type of business structure adopted by entrepreneurs. Wang argued that the personality of an individual influenced the activity, or the approach determined for entrepreneurship.

The dominate component of the two facets of consciousness dictates the approach of the person who chooses to start a business. In this study, researchers took the broad aspects of the Big Five (job satisfaction, job performance, high tolerance for risk and a

high preference for autonomy) personality and compared them to the narrow traits (intention, creation, Costa and McCrae) to distinguish the five traits (extraversion, neuroticism, openness, conscientiousness, and agreeableness) and utilized them as approaches to the entrepreneurial personality. Wang (2013) found that the two components of conscientiousness were indications for both, the broad and narrow aspects of the Big Five traits as in other studies (Markman & Baron, 2003; Owens et al., 2013; Leutner et al. 2014).

Researchers described dependability as dutifulness (Caliendo et al., 2014; Costa et al., 1991) while achievement orientation is defined as need for accomplishment (Caird, 2013; Caliendo et al., 2014; Frese & Gielnik, 2014) and is when an individual is interested in meeting high expectations and experiencing the ability to solve high level problems that he or she may encounter (Caliendo et al., 2014). Researchers indicated that individuals who have a high account for achievement are expected to succeed as entrepreneurs. At the same time, when a person scores high on achievement or dutifulness, the likeliness of them succeeding in entrepreneurial endeavors is negatively linked to success. Researchers also found that dutifulness is often a characteristic of conscientiousness that describes someone who is not self-employed (Caliendo & Kritikos, 2011) but more of an employee instead. Therefore, researchers have found in this study that there is a contradiction of the two components of conscientiousness, in that, to be a successful entrepreneur, it is implied that one must score high on both components (Caliendo et al., 2014), or at least equal.

Caliendo et al. (2014) findings do not support Wang et al. (2013) study that argues that the outcome on the score for achievement or dependability will determine the process a person chooses to operate, as well as, the activity of business and does not determine the success of the business owner. In other words, if a person scores higher on achievement then he or she is more likely to operate their business where the focus is on individual development, whereas an individual scoring higher on dependability, the focus is on outward relationships. Wang also argued that these scores also dictated the direction of the business and therefore the environment was also an indicator whether an individual would become an entrepreneur and whether he or she would be successful.

Carsrud and Brännback (2011) studied the intention and the connection between it and entrepreneurial behavior which determined entrepreneurial motivation. The primary focus of Carsrud and Brännback's study was to determine if enough information had been gathered on motivation and the behavior resulting from the data already established. In this study, the researchers determined that there is a lack of data on the entrepreneurial motivation. Researchers also indicated that there were doubts about traits that are specific to entrepreneurship personality and therefore research needed be continued regarding education, and training because entrepreneurs greatly influence the economy.

A limitation in Carsrud and Brännback's (2011) study was that the data collected (including definitions) were collected through self-reporting managers and not persons identified as entrepreneurs. Based on the data collected, researchers found that there was a link to behaviors that connected motivation to performance but not specifically to self-employment, in terms of small business. Carsrud and Brännback also submitted that

nAch as a construct was significant to determining the motivation of an entrepreneur because this construct was associated with the need to achieve. Research also show that conscientiousness was the common trait, of the Big Five, that determined high performance or indicated entrepreneurial success. However, research did not indicate which of the components in conscientiousness, indicated success or high performance in entrepreneurs.

Fairlie's (2014) research was based on studies conducted through a randomized controlled experiment in the United States to identify individuals who have a high tolerance for risk and a high preference for autonomy; two of the broad personality traits of an entrepreneur. Fairlie's study focused on training for entrepreneurs and how training could be beneficial for entrepreneurial creativity. This study did not examine the personality traits of entrepreneurs to determine if these individuals were entrepreneurs or had entrepreneurial intention but focused on the difference training provided by developing the individuals.

The argument presented by Fairlie (2014) was that whether individuals who had been identified as an entrepreneur through personality assessment or not, training differentiated the success or failure of anyone starting a business for him or herself. Research showed that entrepreneurship training benefited participants who showed a higher risk tolerance than participants who showed a lower tolerance. Individuals with a one standard deviation experienced a 2.9% point increase in business ownership than those with a lower tolerance for risk. Participants who scored lower were also unlikely to start a business based on a 3.7 % point less than their counter parts (Fairlie, 2014).

Fairlie suggested, in both studies, that future research of this nature should focus on identifying groups who have more of a socio-economic disadvantage. It was also suggested that these groups be included in other studies to examine the correlation between the state of the economy. Both of Fairlie's studies outlined the economics of these individuals representing specific groups (at-risk youth, ex-offenders) who might have the traits of an entrepreneur.

Fairlie's (2013) study set the tone for other research (Fairlie, 2014) where training was an indicator for entrepreneurial success and for intention. Intention, in this study, was pointed out as an indicator for entrepreneurship, and that the labor market may be a conditioning factor for why individuals might go into business. Fairlie found that individuals started a business during economic down turn when there was a high unemployment rate and that these data were not based on personality traits. Research also showed that when the United States economy lost 8 million jobs during the 2007 recession, the timeframe was not a predictor for entrepreneur success. In fact, research showed that job loss and a reduction rate in the labor market and employment was an indicator for self-employment and business ownership, but not an indicator for a connection with certain personality traits. At the same time, research did show a relationship between entrepreneurship intention. A limitation in this study is that it did not examine personality as a predictor for small business start-up, although other variables (training, labor market, economy, era in time) were included as components for success. Fairlie's study offered empirical evidence that entrepreneurship growth was based on economics with no documented evidence of any other stimulus; however, the

study also did not include the Big Five as indicators of entrepreneurship, the study was solely based on economics.

Frese and Gielnik (2014) presented meta-analyses based on entrepreneurship research. Data, in this study, indicated that the need for achievement (conscientiousness) was highly related to entrepreneur creation and success. The meta-analyses were based on intention and success. Data from previous studies were interpreted to address actions necessary for an entrepreneur to take to be successful in small business. However, this study did not separate entrepreneurship from traditional employment activities. This study referred to entrepreneurship as a “process with different phases” and not an alternative to the traditional employee/employer relationship. Frese and Gielnik (2014) suggested that experimental studies be conducted where entrepreneurs were compared to each other; one set where the activities were the same and one group failed, and the other group succeeded.

In the cross-sectional study that Owens et al. (2013) conducted, 147 business owners were surveyed as participants for a web-based assessment. The study included 14 personality traits. Of the 14 traits, dependability was listed and identified as one of the sub-groups of conscientiousness, one of the broad traits described to influence job satisfaction and performance. Owens et al. study showed that small businesses contributed to the economic growth of the United States and that small businesses were on the rise; however, the BLS (U.S. Department of Labor, 2016) reported that small business had declined over a span of three years.

The focus of Owens et al. (2013) study was to investigate personality traits that identify the correlation between job satisfaction and the personality of self-employed individuals. One of the limitations encountered in this study does not include a definition of terms that have been found to distinguish one variable from another (entrepreneurship, small business, self-employed). However, the term *success*, in this study, is attached to economic performance, but using descriptions for success (firm survival, employee growth, profitability, sales, and return on assets, and owner satisfaction) classified for the performance and activities associated with an entrepreneur.

Aside from financial gain and economic growth, Owens et al. (2013) defined success as the personal satisfaction of an entrepreneur but is based on the perception of satisfaction, by the entrepreneur, rather than tangible success. Owens et al. also used a range of personality characteristics that were not specific to an identifiable group. Conscientiousness was related to high performance and entrepreneurship but was not a key factor in this study. Though, its subcomponent (dependability) was examined as a separate entity.

One of the hypotheses in Owens et al. (2013) study was that dependability is positively related to business performance; however, not to business success. The terms, *performance* and *success* were not held to the same meaning. A gap in research was that there was no distinction between self-employed individuals and small business owners. The study also only defined small business owners.

Owens et al. (2013) used a total of 167 participants but only 147 met the required definition for small business owner. Fifty percent of the participants were male and 50%

were female. The average age was 42 years and the average education was a degree earned (no indication of what degree: BA, BS, or higher). The other variables measured in Owens et al. study (adaptability, autonomy, competitiveness, emotional resilience, goal-setting, optimism, persistence, risk tolerance, self-promotion, social networking, tolerance for financial insecurity, work-related internal locus of control, and work drive) were not part of the Big Five that described job performance and job satisfaction. Owens et al. also used three financial indicators (business growth, sales growth, profit growth) frequently used to identify business success in entrepreneurship research.

Research showed that the variables (age, size of company, type of business, etc.) had no positive significance to the relationship between performance, satisfaction, and personality traits that describe entrepreneur success. The focus of the study was on success as satisfaction. Therefore, some future suggestions for research was a longitudinal study that include start-ups, job history, business type, and other success indicators other than growth and performance.

Summary and Conclusions

Entrepreneurs have been compared to managers and other occupations that share similar traits (Brandstätter, 2011); identifying traditional markers for success for individuals who are not entrepreneurs. Some researchers argue that entrepreneurs are different from other individuals (Caliendo & Kritikos, 2011) in the workforce, while other researchers oppose this hypothesis. Studies have been conducted to explain who entrepreneurs (Caird, 2013) are and why these individuals behave the way they do? Researchers have reported that there may be a correlation between entrepreneurs and the

Big Five personality traits and that of these traits, conscientiousness is the most commonly identified correlation (Frese & Gielnik, 2014) for entrepreneurial behavior. One of the gaps that my study has addressed is the lack of research that compares entrepreneurs to each other.

In Chapter 3, I will present the method of research that was appropriate for my study and I will offer the reasons I chose this method. The rationale for the design will be discussed and the procedure, which was met with the challenges from the decision to work within a shorter timeframe, will be presented as well. Chapter 3 also includes the instruments I used for data collection and the process implemented for analyzing the data. The demographics of the participants are described and the various populations from which the participants were sampled is disclosed, as well as the analysis I used to calculate the minimum sample size. Recruitment strategy, how I used the instruments, and the plans established to avoid ethical, validity, and reliability concerns will be covered and are based on my literature review of previous studies.

Chapter 3: Research Method

Introduction

The purpose of this quantitative, correlational study was to explore if there was a relationship between the personality traits related to individuals defined as entrepreneurs, who operate as small business owners. The goal of my study was to determine if the subtraits of conscientiousness (i.e., achievement and dependability) influence the performance of this type of entrepreneur. I used quantitative methods to compare and calculate the attitude and behaviors of high performing small business owners. The IVs are the personality traits associated with entrepreneurs and the income of the entrepreneur was the DV.

The organizations, from which the participants were sampled, have been excluded from this publication and participants were surveyed through an online assessment that provided anonymity. However, this chapter, offers an in depth process of how the research for my study was conducted. This chapter also includes step by step instructions for conducting the surveys, preparing the data for results, and a thorough walk through of the research experience.

Research Design and Rationale

I chose a quantitative, correlational research design for my study because a quantitative design simplified data collection. A numerically based method was also useful for easily interpreting trends and the attitudes of the sampled population with little bias from the researcher and minimal miscalculations (Creswell, 2009). The results of my study contribute to the data collected about small business owners that have provided

accounts of situations in the workforce by using the relationships of achievement and dependability to explain the phenomenon of entrepreneurship (Christensen, Johnson, & Turner, 2011). Therefore, a qualitative design was not used to understand the actions of small business owners and how the personality traits associated with them, explain entrepreneurial success. Qualitative research interprets individual behavior and is used to learn more about the opinions and experiences of others (Christensen et al., 2011). It also focuses on data not necessarily based on the accuracy of numbers and would have required more time to conduct. In a shorter timeframe, I gathered data for a quantitative study to explain entrepreneurial success, using income as a predictor of success, by collecting numerically based data to explain income as a phenomenon in small business ownership (Muijs, 2010).

Researchers have agreed that longitudinal studies should be explored for future research on entrepreneurship, so more data can be gathered about entrepreneurs (Brandstätter, 2011; Caliendo & Kritikos, 2011; Hopp & Sonderegger, 2015; Leutner et al., 2014; Litwin & Phan, 2013; Owens et al., 2013). Although a correlational design requires less time than a longitudinal study, it can be expanded into a longitudinal study later. If I would have used a longitudinal study, it could have identified the relationships between the variables and changes in performance based on the variables. However, longitudinal research only collects data on one group at a time, over a selected timeframe, and at two or more points in time (Creswell, 2009). In my study, I collected data on small business owners as one group; however, multiple industries were randomly sampled.

Methodology

Population

Using the G-Power 3.1 power analysis to estimate the required sample size, I determined that 60 participants should be recruited from six organizations of self-identified entrepreneurs who operated as small business owners and other organizations that provided membership services to this group. I used reports from the BLS, from a range of 5 years (2011–2016), to identify industries with high performing small business owners. As suggested by Hipple and Hammond (2016), the high performers (i.e., salespeople and service business owners) were compared to other small business owners. Based on a previous report released by the BLS (2016), the following are demographics of the population:

- Age: 25–40 years old
- Gender: 54 women and 54 men
- One of the top three income-earning industries: unincorporated construction, sales, service business owners
- Race of participants was collected
- Education was not significant to the study but recommended for future study
- Income level

Sampling and Sampling Procedures

I used the power analysis tool, G-Power 3.1, to estimate the statistically appropriate, required sample size to use in my study. A medium effect size value of 0.25 was assumed. Power was set to 0.95 and the level of significance, alpha, was set to 0.05.

The test family setting in G-Power was the f tests since significance between means of at least six groups was tested. The type of analysis was set to a priori since the analysis was conducted, in advance, from the final study. According to this analysis, the estimated minimum sample size required for my study was 60 participants

Procedures: Recruitment, Participation, Data Collection (Primary Data)

Soliciting members of identified organizations that entrepreneurs have joined served as a source for my recruitment of entrepreneurs in small business for survey participation rather than attempting to identify these individuals independently. Three organizations were initially identified for participation; however, more were added as well as three social media platforms for recruitment. I collected data from individuals who were members of entrepreneurship organizations. One organization had over 12,000 entrepreneurs of all ages. Another organization catered to entrepreneurs who were under the age of 40. A study conducted by the U.S. Department of Labor (2016) showed that unincorporated small businesses were identified as entrepreneurs who were at least 25 to 40 years old (Hipple & Hammond, 2016) therefore, it was important that these organizations participated.

There were over 400,000 entrepreneurs registered as members of one of the organizations that participated. Along with the other organizations included in this section, this particular organization also served as a source to gather the sample population to survey. Data from the U.S. Department of Labor provided unemployment rates as they correlated to small business statistics, in terms of demographics, and the statistics on entrepreneurs and small business owners.

I used the GET test to measure traits that describe entrepreneurial behaviors: a high need for achievement, calculated risk-taking, a tendency for creativity, and a high need for autonomy (Caird, 2013; Stormer & Goldenberg, 1999). The GET is a questionnaire that includes 54 items (Stormer & Goldenberg, 1999). Although it does not measure entrepreneurial success, it does identify individuals with entrepreneurial tendencies (Caird, 2013). The GET was also used in my study to independently identify individuals classified as entrepreneurs that are already operating a small business. The results of the GET were compared to the most recent BLS reports (U.S. Department of Labor, 2016) for small business activity, relevant to my study, and the results of the BFI-10.

I chose to use two assessments to strengthen the reliability of the data gathered through self-reporting (Frankfort-Nachmias & Nachnias, 2008; Salkind, 2007). The method of test-retest reliability was established to avoid surveying participants twice and to provide reliable data collection from the participants (Christensen et al., 2011). This was necessary because of past issues in research that relied on self-reported data from the participants in other studies.

I prepared an online informed consent to solicit participants from all platforms previously listed to meet the minimum sample. Individuals who did not complete the consent form could not move forward to complete the online survey but also had the option to decline participation. Based on the literature review, researchers have relied on self-reported data regarding income in other studies (see Batey, et al., 2011; Davis et al.,

2016; Owens et al., 2013). As a qualifier, individuals were selected from organizations that required a certain level of income of their members.

The reason for my study and its process was shared with the prospective participants upon their visit to the online survey. Aside from the published informed consent, participants were also asked to agree to confirm their income by selecting from a range of choices. If a potential participant disagreed on any part of the survey, he or she could decide not to participate or discontinue at any point of participation. I also provided an outline of what the data collected would be used for. I developed the informed consent form to clearly list myself as the researcher and university contact information if the participants had questions. It was also clearly stated that the data would be used to complete my doctoral degree, the doctorate I would be receiving, and the importance of the study including its contribution to previous research about entrepreneurs operating as small business owners. I also shared a summary of what the GET test and the BFI are, how these assessments work, what they have been used for, and how the data would be used in my study. This information was shared on the website as well and the potential participant was asked to acknowledge that he or she understood the information and the terms of proceeding.

All participants in my study were anonymous. The data collecting instruments were available, via the Internet, and were self-administered by the participants using instructions available before beginning the survey. I solicited potential participants on more than one occasion through social media. All participants were informed that they were volunteering to participate in my study and that they could discontinue or refuse

participation at any time. Although, I designed the survey to protect the identity of participants through anonymity the online survey automatically generated a code that uniquely identified the individual device a participant used to complete the survey.

Part of the assessment required participants to provide demographical information (e.g., organization's name, age, gender, ethnicity, education, income, and location). I also included questions from the GET and the BFI-10 on the online survey to ensure that all data were collected from the participant in a 20-minute sitting. I assumed that the participants understood that it was only necessary to complete the survey once, although I did not take measures to prevent anyone from taking it more than once. However, once I collected the data, I was able to use a data cleaning process once the data were downloaded. The automatically generated code allowed me to eliminate duplicates unless the same person participated twice by using different devices. There were no foreseeable risks involved in participating in my study, and this was expressed on the consent form. The benefits, in terms of contributions to science, were shared should I expand on the research findings in the future. Participants were provided with my contact information if they had concerns before, during, or after the study.

Instrumentation and Operationalization of Constructs

The GET assessment is based on the premise that people who are entrepreneurs or people who aspire to be in business share certain personality traits (Caird, 2013). Fairlie, 2014 offered that these characteristics can be developed through education and training. Fairlie's approach to develop an entrepreneur was based on the behavior and the act itself, which identified the characteristics of entrepreneurship. Researchers found that

individuals with entrepreneurial intention had a strong sense of motivation, in that, they were motivated by the need to achieve, autonomy, risk-taking, and locus of control (Fairlie, 2014).

The GET test was comprised from a series of psychological tests and descriptors that determine if someone has entrepreneurial tendencies (Davis et al., 2016). It is an online questionnaire that includes 54 items (Stormer & Goldenberg, 1999). The GET does not measure entrepreneurial success but identifies entrepreneurial tendencies (Caird, 2013). In my study, I used the GET test to measure the following traits that describe entrepreneurial behaviors: a high need for achievement, calculated risk-taking, a tendency for creativity, and a high need for autonomy (see Caird, 2013; Stormer & Goldenberg, 1999).

The BFI-10 is a shorter survey that is appropriate for measuring the Big Five personality traits using a shorter questionnaire (Srivastava, 2016). It is a multidimensional list extracted from the larger version of 44 items designed for measuring specific dimensions of the Big Five (Srivastava, 2016). I chose the BFI-10 as an appropriate method to measure the variables of conscientiousness, extraversion, agreeableness, neuroticism, and openness in my study because these variables relate to performance (Srivastava, 2016). In addition, the reliability and validity of the BFI-10 has already been established, was appropriate for the timeframe of this research, and matched the suggested design of my study (see Creswell, 2009; Frankfort-Nachmias & Nachnias, 2008).

Questions from the GET and the BFI-10 was included on an Internet-based survey, along with the demographical questions. Typeform, an online survey builder, was used to re-create the questions from both assessments for easy access. Typeform was recommended by Walden University professors and has been used by previous doctoral students to produce research data. Typeform has a data collection system compatible to an SPSS dataset. Once the data were collected, it was downloaded onto a secured-dedicated thumb drive, later to be uploaded to SPSS for analysis.

Dr. Caird's instrument has been used worldwide by an average of "1000 users per month [and has been implemented] by over 80 institutions and organisations in over 30 countries" (S. Caird, personal communication, May 7, 2016). I emailed Dr. Caird to ask for permission to use the GET assessment as part of my study. Dr. Caird, responded by email as follows:

Due to [the] interest and the volume of requests for the test... [the assessment is] freely available to people who wish to test their enterprising tendency, or for educational, training, development and research purposes. The GETtest is freely available for research purposes and to support education, and you therefore have permission to use the test for your research. Please note that commercial use of the GETtest materials are separately licensed and that the intellectual property is protected by copyright. (S. Caird personal communication, May 7, 2016).

Neither authors of the GET or the BFI-10 formally require permission from students to use their instruments. There were no forms to complete and I was within the guidelines of the Institution Review Board (IRB) to use the instruments; however, I

included the BFI-44 process (see Appendix B) since I basically used 10 questions from it and because it is authored by the same person who created the BFI-10 and the scoring guidelines (see Appendix C).

Data Analysis Plan

RQ1: Is there a relationship between the achievement motivation trait and the income of U.S. entrepreneurs who operate as small business owners?

H_01 : There is no relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

H_{A1} : There is a relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

RQ2: Is there a relationship between the dependability trait and the income of U.S. entrepreneurs who operate as small business owners?

H_02 : There is no relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

H_{A2} : There is a relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

The SPSS (Statistical Package for the Social Sciences) program was used as the data analysis choice. This program was appropriate for my study because it has been widely used by social scientist to input and analyze collected data for various studies. SPSS is commonly used for quantitative research and was therefore, designed to handle large numbers of data. The sample size included 59 participants to collect several demographical profiles.

Additionally, by using SPSS the hypotheses were tested with the Pearson product moment. This analysis was used to show the relationships between the variables outlined in my study. The results would reveal if there was a relationship between the variables or not.

External Validity

A concern for external validity was using the Internet to collect data from the GET. However, Dr. Sally Caird, co-developer of the GET, confirmed:

The test was developed from an analysis of psychological tests of these selected characteristics and a literature review leading to the creation of a bank of entrepreneurial descriptions. This was a pilot tested with entrepreneurs and other occupational groups which established initial construct validity and reliability. We reviewed psychological tests and created the GET test which was validated with occupational and other groups during a research project. Further validation of the test would be recommended although the test has been considered very useful world-wide for research, education and development purposes (S. Caird personal communication, May 7, 2016).

Internal Validity

A potential internal threat to my study was confounding variables. Two IVs (achievement and dependability) were included which potentially correlated with each other and with the income variable. Potential covariates were avoided by considering the demographical data (e.g., age, organization, gender). These categories made confounding variables avoidable because an increase of other relationships was made possible.

Threats to Validity

Construct Validity

A possible threat to the validity of the construct could have been positive self-presentation. Due to the nature of the study and the population assessed, participants could have submitted answers to demographical questions that were false, for the purpose of making him or herself seem better. For example, prospective participants were asked about his/her income level. This information was necessary because the dependent variable is income. Therefore, participants were asked to share his/her current and starting annual income. Some participants might have given false information to be included. Positive self-presentation occurs when a participant believes his/her behavior will be viewed by other participants as positive (Christensen et al., 2011). However, in my study, all participants were anonymous and there was no interaction with one another. Anonymity was clarified on the consent form and was a resolution to construct validity.

Ethical Procedures

Although my study was used to collect data from consenting human individual's, ethical procedures were followed according to the American Psychological Association's Ethical Principles of Psychologist and Code of Conduct 8.02 of the informed consent section was used as a guide. This section provided the framework of the research and preserved the protection of the participant as follows:

8.02 Informed Consent to Research

When obtaining informed consent as required in Standard 3.10, Informed

Consent, psychologists inform participants about (1) the purpose of the research,

expected duration and procedures; (2) their right to decline to participate and to withdraw from the research once participation has begun; (3) the foreseeable consequences of declining or withdrawing; (4) reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks, discomfort or adverse effects; (5) any prospective research benefits; (6) limits of confidentiality; (7) incentives for participation; and (8) whom to contact for questions about the research and research participants' rights. They provide opportunity for the prospective participants to ask questions and receive answers (APA, 2010, p. 10).

Participants shared information about their employment through a secured Internet-based survey platform (Typeform) and the identity of the participants were anonymous. Participants would only be identified through a computer-generated ID number based on extreme circumstances therefore, the identity of each participant was protected before during, and after data collection. Additionally, there was no third party involved to collect the data hence, the data has not been distributed to anyone or sold and neither will it be in the future.

The results of my study are available to any participant who requests them ;however, none of the participants will receive the data that created the results, not even their own data. All material related to my study is stored in a lock box, which will be secured in an offsite storage area for 5 years. After the required 5 years, the data will be destroyed. The electronic data is loaded on a secure thumb drive and kept in a lock box and will remain there for five years then destroyed during the same time that the other

items in the lock box is destroyed. The Walden University Institutional Review Board (IRB) approval to conduct my study was received on November 15, 2017. The approval number is #11-15-17-0369667 and the expiration date is November 14, 2018.

Research Summary

It was assumed that the data collected for my research was gathered from individuals who were willing participants. Each person completed the assessment by using the online Typeform survey for anonymity and consistency. The data were not collected from individuals outside of the approved organizations and platforms (LinkedIn, Twitter, and Facebook, a business association, the US Chamber of Commerce and its southeastern region subsidiaries). To my knowledge, all participants were at least 18 years of age and understood the instructions on the informed consent portion of the survey. The participants also understood the purpose for the research and understood each of the questions on the survey. To my knowledge each participant provided honest and truthful answers on the survey.

In Chapter 4, a detailed account of the demographical statistics will be reviewed. The research questions dictated which data were calculated and what percentage of the sample population was significant to include. Although the survey was more than 80 questions, only the data representing the same demographics from the BLS report (U.S. Department of Labor, 2016) was used to guide the study. The tables in this chapter have been included to illustrate the population, trends, income, and a comparative review of the results to the proposed hypotheses.

Chapter 4: Results

Introduction

In my study, my findings provide aligned with other research to confirm that there is no relationship between the achievement motivation personality trait and the income of U.S. entrepreneurs operating as small business owners nor is there a relationship between the personality trait of dependability and the income of U.S. entrepreneurs operating as small business owners. In Chapter 1, I discussed how researchers found that the personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism correlated with ES and how the personality traits were associated with high performance across industries (see Barrick & Mount, 1991; Leutner et al., 2014). However, one of the major limitations in previous research was that data were collected through the self-reporting of participants who were also self-appointed entrepreneurs with individual views of the definition of ES, based on their own experiences (Batey et al., 2011; Davis et al., 2016; Owens et al., 2013). One of the problems in previous research has been how data had been collected, the instruments used, and the populations chosen for research. My primary reason for conducting my study was to address data collection issues of this kind that occurred in other studies.

In this chapter, I will discuss the data collection methods that address the limitations of other studies. I will also offer solutions to the limitations of data collection, instruments, and population diversity. The data gathered in my study was intended to build upon the data collected from previous studies. I conducted a quantitative, correlational study to identify the relationships between achievement motivation (IV1) and individual dependability (IV2) and how these subtraits of conscientiousness influence

small business ownership in the United States, using financial success in terms of income (DV) as the predictor. In Chapter 1, I established the following research questions and hypotheses:

RQ1: Is there a relationship between the achievement motivation trait and the income of U.S. entrepreneurs who operate as small business owners?

H_01 : There is no relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

H_A1 : There is a relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners.

RQ2: Is there a relationship between the dependability trait and the income of U.S. entrepreneurs who operate as small business owners?

H_02 : There is no relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

H_A2 : There is a relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners.

Study Results

Using Pearson's Correlation in SPSS, I analyzed the data collected from participants. Table 1 illustrates that there was no significant correlation between the two personality traits of achievement and risk (dependability) from the GET assessment and income, nor was there a significant correlation between the personality trait of conscientiousness from the BFI-10 assessment and income. Table 1 also illustrates the

use of the test-retest, avoiding the need to request the participants to complete the Typeform survey twice.

Table 1

Pearson Correlation: Income, Achievement, Risk, and BFICon

		Income	Achievement	Risk***	BFICon*
Income	Pearson	1	-.029	.076	.128
	Correlation				
	Sig. (2-tailed)		.825	.569	.332
	N	59	59	59	59
Achievement	Pearson	-.029	1	.512**	.351**
	Correlation				
	Sig. (2-tailed)	.825		.000	.006
	N	59	59	59	59
Risk***	Pearson	.076	.512**	1	.137
	Correlation				
	Sig. (2-tailed)	.569	.000		.302
	N	59	59	59	59
BFICon*	Pearson	.128	.351**	.137	1
	Correlation				
	Sig. (2-tailed)	.332	.006	.302	
	N	59	59	59	59

*BFICon = Conscientiousness

**Correlation is significant at the 0.01 level (2-tailed).

***Risk = Dependability

Descriptive Statistics

Table 2 displays the statistical data I gathered that was based on the same demographical information used by the U.S. Department of Labor. I gathered demographics in my study from a sample population of 59 participants who completed the Typeform online survey. From the 59 participants in my study, 8% more women responded. The age range was between 21–77; however, 56% of the responses came from participants between the ages of 44–77. Of the three identified organizations in my study,

a combined 49% membership was illustrated; 54% of the participants were also members of other unidentified organizations.

Table 2

Demographics of Sample Population (N = 59)

Demographics	Percentage
Age range: 21–77	
44–77	56%
21–43	44%
Gender	
Female	54%
Male	46%
Education	
Masters	44%
Some college	20%
Bachelors	19%
PhD	10%
Associates	5%
GED	2%
Ethnicity	
Black	64%
White	20%
Other	7%
Multi-racial	3%
Asian	2%
Bi-racial	2%
Native American	2%
Organization	
Other	54%
EO*	41%
SUG*	5%
YEC*	3%

(table continued)

Demographics	Percentage
Industry	
Service (Female: 19 at 54%, Male: 16 at 46%)	59%
Other	34%
Sales	8%
Construction	3%
Incorporated	
No	56%
Yes	44%
Number of employees: (0 – 4)	80%
Average starting income	
Less than \$29K	56%
\$30K–\$49K	22%
\$50K–\$99K	20%
Average current income	
\$50K–\$74K	54%
\$150K–\$249K	15%

*Participating organizations. Abbreviated for anonymity purposes.

Assessments

The BFI-10 is an assessment of 10 questions taken from a larger assessment of the Big Five personality survey (Srivastava, 2016). The BFI-10 is based on a Likert Scale of 1 (*disagree strongly*) to 5 (*agree strongly*); (Srivastava, 2016). Before recording the BFI-10 participant answers, I reverse-scored the appropriate items, then I computed the variables in SPSS to calculate the participant's personality according to their answers. The process for rescored the BFI-10 scales was as follows: R = items to reverse-score: 1R, 3R, 4R, 5R, and 7R; the R scale is 1 = 5, 2 = 4, 3 = 3, 4 = 2, and 5 = 1 (Rammstedt & John, 2007). The variable calculations were as follows: Question 1R + Question 6 =

extraversion, $2 + 7R =$ agreeableness, $3R + 8 =$ conscientiousness, $4R + 9 =$ neuroticism, $5R + 10 =$ openness to experience.

The GET is a 54-item questionnaire that assesses entrepreneurial tendency (see Stormer & Goldenberg, 1999). Although it does not measure the success of an individual as an entrepreneur, I used it as a test and measurement vehicle for the accuracy of the BFI-10 as the BFI-10 served the same purpose for it. In addition, the GET is traditionally used to measure an individual's aptitude for entrepreneurship (Caird, 2013) and uses the two subtraits of conscientiousness (dependability and achievement) as separate entities, when other assessments do not.

My purpose for using both assessments together was to avoid the test-retest method. This method is a process for assessing the reliability of an instrument by using it once, then later using it again for the same participants, then comparing both scores (Christensen et al., 2011). The issue with a test-retest scenario would have been the time frame it would take to administer a second survey, the risk of losing the interest of participants, not knowing who took the first round of the survey and having to appeal to the same participants. To avoid these concerns, I incorporated these two assessments by including questions from each on a single assessment, then I separated the scores and compared them to one another.

Before including the results of the GET, I scored each question according to the instructions of the author of the assessment. This assessment used a Likert scaled method, with A = *agree* and D = *disagree*. When a participant agreed with the statement on the survey, a 1 was marked, a 2 was marked for disagree. If the number of the question was

even and the participant answered with a 1, then 1 point was given. If the number of the question was odd and the participant answered with a 2, then 1 point was given. Other responses received a 0. Points gained were added and then given a score for each trait listed (i.e., achievement, autonomy, creativity, risk, and control). A combined total score of all traits represented the characteristics that indicated entrepreneurship.

Statistical Assumptions

One major assumption I held was that achievement and dependability would correlate as separate contributing subtraits of conscientiousness. However, as Table 3 illustrates, only achievement showed a significant correlation to conscientiousness as its subtrait. Dependability did not show a significant correlation to conscientiousness as a separate contributing subtrait.

Table 3

Pearson: Achievement, Dependability, and Conscientiousness

		Achievement	Dependability	Con*
Achievement	Pearson Correlation	1	.512***	.351**
	Sig. (2-tailed)		.000	.006
	<i>N</i>	59	59	59
Dependability	Pearson Correlation	.512**	1	.137
	Sig. (2-tailed)	.000		.302
	<i>N</i>	59	59	59
Con*	Pearson Correlation	.351**	.137	1
	Sig. (2-tailed)	.006	.302	
	<i>N</i>	59	59	59

* Con = Conscientiousness, ** Correlation is significant at the 0.01 level (2-tailed).

I conducted my study to discover if there was a statistically significant correlation between the achievement motivation (IV1) of small business owners and dependability (IV2), and the DV of ES, using income as the predictor for success. I used the Pearson product moment to test the hypotheses (see Salkind, 2007). Both IVs were components of conscientiousness, which has been found to be the most reliable personality traits correlated to performance across professions (Owens et al., 2013) and is comprised of two subtraits (dependability and achievement motivation). The results of my study provided information on both components of conscientiousness, as separate entities, as they relate to the DV and predictor of the financial success (income) of entrepreneurs, who are small business owners.

Table 4 illustrates that there is no significant correlation between the achievement and dependability variables to the conscientiousness variable. Table 4 also illustrates that the Alternate Hypothesis 1: There is a relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners is false and that the Null Hypothesis 1: There is no relationship between the achievement motivation trait and the income of U.S. entrepreneurs operating as small business owners is true. Finally, Table 4 shows that the Alternate Hypothesis 2: There is a relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners is false and that the Null Hypothesis 2: There is no relationship between the dependability trait and the income of U.S. entrepreneurs operating as small business owners is true.

Table 4

Pearson Correlation: Income, Achievement, Dependability

		Income	Achievement	Dependability
Income	Pearson	1	-.029	.076
	Correlation Sig. (2-tailed)		.825	.569
Achievement	Pearson	-.029	1	.512**
	Correlation Sig. (2-tailed)	.825		.000
Dependability	Pearson	.076	.512**	1
	Correlation Sig. (2-tailed)	.569	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Data Collection

According to the results of the power analysis conducted for my study, an estimated minimum sample size of 60 participants was recommended. Data were collected from an online survey created with a paid Typeform account. The timeframe for data collection was 8 weeks. The actual recruitment number was 59 participants instead of the minimum 60 because the original application to the (IRB) was modified to a lower suggested sample size to include additional modes of participation. The original data collection plan was to solicit members of identified organizations for entrepreneurs ;however, due to the time of year (November-January), the length of the survey, and the framing of the questions, many visitors opted out of participation. As a result, there was a total of 271 visits to the website; however, only 22% agreed to complete the survey.

The original data collection plan was modified to add methods to appeal to more participants so that data collection could be drawn from the three originally identified organizations specific to membership for entrepreneurs as well as three social media platforms (LinkedIn, Twitter, and Facebook), and two other small business organizations plus the U.S. Chamber of Commerce and its southeastern region subsidiaries). Therefore, platforms to collect data were expanded to fit the behavior of the potential participants and to increase the chances of securing the minimum sample.

Individuals deciding to participate spent an average of 22.5 minutes to complete the survey and there was a 100% completion rate of 80 survey questions from 59 participants. Analytics gathered from the total visits to the Typeform survey indicated that 105 visitors used PCs or laptops, 12 used tablets, and 153 visitors used smartphones. Categories from the BLS reports, from 2011 to 2016, were used for the descriptive and demographical characteristics of the sample (age, gender, race/ethnicity, level of education, income, business industry, years in business, and number of employees); which was used to create the online questionnaire.

It is important to understand that although there were more visitors than required to conduct the research, not all visitors completed the survey. However, because Typeform was used, data collection was set up to gather all data, including the data that showed non-participation against participation. This information was vital to the study because it gave insight to whether changes would be necessary to move forward if the minimum number of participants were not successfully collected. Additionally, knowing which devices were used, and at what time they were used, allowed me to monitor who

completed the survey, when the survey was completed, and on what device it was completed, by an automatically generated code associated with each participant's device. This process narrowed down the likelihood of one participant completing the survey on multiple occasions, even though the survey was anonymous. Therefore, if there were circumstances that warranted disclosure of a participant, it would be possible. This process also protected the anonymity of the participant and the reliability/validity of the data collecting procedure.

Aside from the age, gender, education, and geographical location of the participants in my study, the role that organizations played in data collection was important. Data collection included securing participation from organizations offering membership to individuals who were small business owners and acknowledged as such.

Summary

The Big Five are commonly used to identify job satisfaction (Leutner et al., 2014) and performance; however, by using two personality assessments which evaluate entrepreneurial aptitude and entrepreneurial traits, the risk personality trait was measured on its own as a contributing factor when combining the traits identified from the BFI-10 (extraversion, agreeableness, conscientiousness, neuroticism, and openness) and the GET (achievement, autonomy, creativity, risk, and control). These assessments were chosen for my study because some of the traits from the assessments overlap. For example, conscientiousness is represented on the BFI-10 as one trait; however, it is also represented on the GET as achievement and risk (dependability), which are the subtraits

of conscientiousness. Dependability was also represented on the GET as risk when the scores of the participants were inverted so that the dependability trait could be identified.

The definition of the risk trait is included as one of the traits used to determine entrepreneurial tendency. Caird (2013) described an individual with the *risk* trait as “the enterprising person [who] is opportunistic and seeks information and expertise to evaluate if it is worth pursuing the opportunity which will usually involve some risk [or danger]” (p. 19). Based on this definition, the probability for a person with a low score in this category is likely to score high on dependability as it relates to conscientiousness. Both assessments use dependability and achievement as a factor for evaluating entrepreneurship.

In Chapter 5, discussion and interpretation of the findings from my research is included, as well as what the results imply. Recommendations for additional research will be discussed along with how the behavioral sciences can further contribute to the understanding of entrepreneurship and the people who use it as a financial resource. One of the recommendations I will present in Chapter 5 is professional training, as did other researchers from previous studies. I specify that mentoring programs, as an expansion for training, might impact entrepreneurs in the future. Although, entrepreneurial training and mentoring programs are not supported by any data from my study. However, other researchers have also identified training and mentoring as a necessary data collecting opportunity to increase the research for understanding entrepreneurs and the implications connected to this understanding.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

While my findings have confirmed that there is no significant relationship between the income of an entrepreneur, specific to small business owners, the data collected for my study also offer other information to consider. Based on the data from my study, there has been an increase in small business ownership since the 2011–2016 study released by the U.S. Department of Labor. Comparatively, the demographic data collected in my study shows an increase of women of all ages employed as entrepreneurs in the service industry. My study shows that more people over the age of 40 are employed as small business owners, and more African Americans are small business owners as well.

Interpretation of Findings

A noteworthy finding in my study was that members of entrepreneurial organizations were found to have an average score of 39 on the GET. My interpretation of this finding was that it is an indication of moderately high entrepreneurial ability in the individuals I surveyed. Additionally, these participants were members of organizations specific to entrepreneurs. While research does not show significant correlation to personality and income, in my study, over 90% of the participants were affiliated with a professional organization. The average current income was \$91,000 per year, which was a \$60,000 increase for the average starting income, over the first 2 years. In speculation, the correlation between entrepreneurial organization membership and income may warrant further research on how professional training might play a part in expanding the

understanding of how entrepreneurs function and how the correlation connects to the areas explored in my study.

I based my study on the premise that entrepreneurs and aspiring entrepreneurs share certain personality traits and that these characteristics were natural traits that correlated to income as an indicator for financial success; however, this was not the case. The findings of Fairlie's (2014) study, along with those in my study and others like it, might serve as a springboard for my recommendation to learn more about training as an indicator for ES, since the data in my study indicated that personality showed no correlation to financial success in the form of income.

The data in my study provoked the question as to whether there is a relationship between training and ES (income) and if this training can be related specifically to entrepreneurs based on personality traits. The data I gathered for my study showed that 98% of all the participants were affiliated with an organization specific to entrepreneurs. In my study, 44% of the participants earned a master's degree and 20% of them had finished at least some college. However, there was no indication that education was an indicator for higher or lower income or the influence of personality. To this end, further research is necessary to explore what kind of education or training relates to ES, if any, the length of time needed to conduct this research, the application of the training, and whether knowledge from the training correlates with an increase in income.

In previous research, it was reported that entrepreneurs possessed specific personality traits connected to self-employment (Srivastava, 2016). Traits identified as the Big Five (i.e., openness, conscientiousness, extraversion, agreeableness, and

neuroticism) had been used to explain characteristics found in leaders and high job performers (Srivastava, 2016). Researchers also showed that some traits consistently predicted job performance for certain occupational groups such as police officers, managers, and salespeople (Barrick & Mount, 1991). In my study, I found no concrete evidence that there was a correlation between occupation, performance, or personality and income, in spite of the data collected.

Limitations of the Study

In previous research, one of the limitations experienced in data collection was that participants reported their income and assessed whether they held the characteristics of an entrepreneur, based on their own opinion. Participants in my study, who were members of the organization were required to meet the criteria of each organization before joining, thereby receiving the classification of an entrepreneur with income as one of the primary conditions for membership. Consequently, income automatically became a condition for participation in my study but would serve as a method for reducing the limitation of self-reported income included in other studies.

One of the limitations I faced in my study was interaction with participants. To eliminate bias and threats to the reliability and validity of the survey instrument I created, I chose to use a data collecting process that provided anonymity. However, this meant that once the survey was launched and participation to the survey was open, I could not explain anything to those who might have had questions. I could only observe the activity and the responses. As a consequence, from the 271 individuals who visited the website to take the survey, only 22% of the visitors completed the survey. Based on the ratio of

completed surveys and visitors, there was no method of finding out why most of the visitors decided not to complete the survey, although this behavior fell in my favor. Because of the manner in which the survey was offered, 100% of the visitors who completed the informed consent statements, completed the survey.

Another limitation was the time frame that I chose to launch the survey in. Upon receiving approval from the Walden University IRB in mid-November, I decided to make the survey public around Thanksgiving, realizing afterwards that one of the biggest shopping events would be taking place for one of the most celebrated holidays in the United States. The day after Thanksgiving (Black Friday) and every day leading up to Christmas delayed and nearly stopped my data collecting process. Therefore, I submitted an amendment to the IRB asking for permission to expand my data collecting platform to social media (i.e., LinkedIn, Facebook, and Twitter). As a result, the bulk of the data were collected after I received permission.

The last limitation to my study was gaining cooperation from the organizations of which participants were members. Many of the organizations were hesitant about including their members, particularly because of the questions regarding income I had included. Once they understood that their members would be protected by anonymity, I can only assume that they shared the announcement because a large percentage of the participants answered that they were members of various organizations included on the survey.

Recommendations

Based on the data collected in my study, I affirm that it is necessary to conduct more research so data can be collected about the nature of entrepreneurs and the concepts that build understanding. The question that needs to be asked is which data should be collected. In my study, I examined personality and income as a predictor for ES; however, like other studies, what stood out most was the activity in which individuals engaged that determined their financial success with their small businesses. Although correlations in my study were conclusive, there were many variables in my study that might have provided a relationship to income. For example, the U.S. Department of Labor reported that one of the industries that produced more small business owners was service. The results of my study supported this finding; however, demographically, most of the small business owners representing the service industry were women, yet the higher income earners were men. Therefore, results of this nature are important to consider for future study. Hipple and Hammond (2016) reported that individuals under 40 years of age led the entrepreneurial population; however, demographics from my study showed that individuals over 40 years of age were predominant. Hence, it is also my recommendation that further study be conducted in this area to examine the effects of age as well as geographical locations that may influence the outcomes.

Other researchers have reported that attention to personality related to career, employment choices, organizational preferences, and training were important variables to consider when examining relationships to ES (see (Barrick & Mount, 1991; Caird, 2013; Fairlie, 2014; Hopp & Sonderegger, 2015; Shane, Locke, & Collins, 2003). The findings

from my study also indicated that training and development could provide a meaningful bridge that closes the gap between those variables and the specific needs of small business owners. In other words, the common denominator in my study was the participants' affiliation/s with an organization. Forty-nine percent of the participants were members of organizations that focused on entrepreneurship and 54% of the participants were affiliated with other types of professional organizations. Between the two groups, there was only an approximate 1% difference in performance, in terms of income. In a study focused on the real estate industry, Okoronkwo (2016) examined the use of mentoring as a strategy to develop entrepreneurs and to explore how organizations could find methods to appeal, involve, grow, and retain younger people. They concluded that mentors were a significant key to producing knowledgeable professionals and reducing fraudulent transactions and highly recommended establishing mentors in the workforce.

My overall recommendation is to continue research using a longitudinal study that observes training programs to promote small business ownership by using mentors. The data from this program could be gathered through experiential training where entrepreneurship qualities are taught, observed, and measured based on progression. In the same manner that colleges and universities use mentors and success coaches to assist new students, businesses and organizations can include entrepreneurial training in its culture.

Implications

It is true that people cannot know, what they do not know. However, people become responsible and accountable when they do. Learning is essential for progress and

so is teaching. In fact, it is my philosophy that individuals must experience themselves as both the student and the teacher to gain full understanding of most things. If we learn who we are; in personality and through what we need, then we realize that this is true for others. If practitioners in the helping professions, such as organization psychology, provided training based on this premise then perhaps the affects would be felt, not only on an economical or global level, but a social one.

Thirty-one percent of the individuals who participated in my study had been in business for him or herself for a range of 10-30 years; 14% of them were 6–10 years, and 46% reported 1–5 years. However, all participants were members or affiliates of organizations designed to educate, mentor, or help them fulfill their desire for financial success or their desire to experience relationships. Unlike other professions, unincorporated small business owners do not have a consistent system that serve them as a safety net from failure. There is evidence of this from the U.S. Department of Labor (2016) report that small business ownership decreased by 1.1 million from the 15 million who started a business within the same year, which significantly affected employment opportunities in the country, particularly when we know that small business owners employ 1 to 4 people (U.S. Department of Labor, 2016).

Psychologists and educators use data about the significance of mentoring as a training tool because of its positive impact in large companies (Okoronkwo, 2016)). Mentoring is not only a training tool but also a data collecting method. It is beneficial to individuals who have chosen small business ownership as a source of income and it has ultimately been a benefit to the economy in which all people live (U.S. Department of

Labor, 2016). Therefore, mentoring can serve to ensure a healthy growth in our economic system by assisting individuals to achieve financial success as one of the hierarchical needs that I discussed in previous chapters.

In addition to serving as a catalyst to fulfilling these needs, mentoring can specifically offer what Maslow introduced as self-actualization or the need to achieve. Need produces satisfaction in individuals, which could explain why some of the participants in my study experienced such high income levels, in a short time, while other participants achieved less income but experienced longevity. Maslow submitted that the needs of individuals included the need to achieve but also the need to belong or to experience love (Schneider & Alderfer, 1973). In other words, some of the participants were motivated by income (achievement) while others were motivated by relationships (belonging/dependability); both are driven by personality.

Consequently, not all people accomplish their highest desires, and according to Maslow's (1962) theory, self-actualization is not achieved by many and statistically, many are expected not to. Yet people in small business still risk failing, as the U.S. Department of Labor's (2016) report reflected. However, when self-actualization is fulfilled, it positively impacts the overall health and well-being of individuals (Rogelberg, 2007).

I propose that industrial/organization psychologists and other social scientists use the data on personality so that it is applicable to fulfilling the basic needs of individuals in the workforce, be it traditional employment or self-employment. All of which will create solutions to satisfaction for individuals who can become vital contributors to the

economy. Understanding of the aspects that explain our human existence can translate to better relationships in commerce and the quality of services provided, with the understanding that everyone is a consumer depending on the situation.

Employment is either provided or received. Both roles should lead to quality service and satisfying interactions that produce a thriving economy. If I choose my profession, learn my profession, and teach my profession, I thrive in my profession. Therefore, knowing the methodologies and using them through the application of mentorship, driven by the needs described in Maslow's hierarchy of needs, I can experience a significant impact that revolutionizes the workforce with small business ownership, at the forefront.

Conclusions

Not everyone is born with money, but everyone is born with time, and with the same wisdom intended for both – it is advised to spend both wisely. None of the individuals who participated in my research were asked why he or she decided to become a small business owner; however, given the income levels that many of them achieved, the standard answer might have been that it was for financial gain (achievement). In speculation the participants might have also answered that they did it to fulfill the need to belong (dependability); therefore, recognizing income as a shared source for motivation.

Collectively, the 59 participants in my study contributed more than \$5 million to the economy, within a 5-year period, 77% of which employed, at least four other individuals; while more than 90% were affiliated with or members of an organization specific to their small business industry. In essence, my research shows that all

participants contributed to the wealth of the U.S. economy through small business ownership – high or low income, entrepreneurship traits or not, it is something to be said about the small group that participated in my study and makes me wonder what the contribution might be on a larger scale.

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Appendix A: G-Power Analysis

F tests - ANOVA: Repeated measures, within factors

Analysis: A priori: Compute required sample size

Input:	Effect size f	=	0.25
	α err prob	=	0.05
	Power ($1-\beta$ err prob)	=	0.95
	Number of groups	=	6
	Number of measurements	=	2
	Corr among rep measures	=	0.5
	Nonsphericity correction ϵ	=	1
Output:	Noncentrality parameter λ	=	15.0000000
	Critical F	=	4.0195410
	Numerator df	=	1.0000000
	Denominator df	=	54.0000000
	Total sample size	=	60
	Actual power	=	0.9673549

Appendix B: BFI Permission Process

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The Big Five Inventory

Download Page

The Big Five Inventory (BFI) is a self-report inventory designed to measure the Big Five dimensions. It is quite brief for a multidimensional personality inventory (44 items total), and consists of short phrases with relatively accessible vocabulary.

To learn more about the BFI, click [\[here\]](#)

Where do I get the Big Five Inventory (BFI)?

If you are interested in taking the BFI yourself, please visit [this](#) website, where you can take an online version of the scale that gives you instant feedback.

If you are interested in using the BFI for commercial purposes, please submit a request to ucbpersonalitylab@gmail.com. At this time, the BFI is for non-commercial uses only.

If you are interested in using the BFI for research purposes, please complete the following form. We are trying to create a database for BFI users of publications, relevant findings, and translations of the BFI in an effort to make the scale more useful for users. Thus, before downloading a copy of the BFI and the scoring instructions, please complete a short survey to let us know a little more about who you are and why you want to use the measure. All information will be kept strictly confidential.

Your name:

Your e-mail address:

Appendix C: BFI-10 and Scoring Form

A Brief Version of the Big Five Personality Inventory.**Big Five Inventory-10 (BFI-10)**

Adapted from Rammstedt, B. & John, O. P. (2007). Measuring personality in one minute or less: A 10 item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41, 203-212.

Instructions: How well do the following statements describe your personality?

I see myself as someone who ...	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
1. ... is reserved	(1)	(2)	(3)	(4)	(5)
2. ... is generally trusting	(1)	(2)	(3)	(4)	(5)
3. ... tends to be lazy	(1)	(2)	(3)	(4)	(5)
4. ... is relaxed, handles stress well	(1)	(2)	(3)	(4)	(5)
5. ... has few artistic interests	(1)	(2)	(3)	(4)	(5)
6. ... is outgoing, sociable	(1)	(2)	(3)	(4)	(5)
7. ... tends to find fault with others	(1)	(2)	(3)	(4)	(5)
8. ... does a thorough job	(1)	(2)	(3)	(4)	(5)
9. ... gets nervous easily	(1)	(2)	(3)	(4)	(5)
10. ... has an active imagination	(1)	(2)	(3)	(4)	(5)

Scoring the BFI-10 scales (R = item is reverse-scored):

Extraversion: 1R, 5

Agreeableness: 2, 7R

Conscientiousness: 3R, 8

Neuroticism: 4R, 9

Openness to Experience: 5R, 10

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