Self-regulation of wealth

by

Gregory H.G. Schink

B.S.B.A, Central Michigan University, 2000
M.B.A., Central Michigan University, 2012

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2018

Abstract

The purpose of this study was to determine the influence of self-regulation on positive financial behaviors and bankruptcy filings of high net worth individuals. The implications are directed toward various groups and factions of high net worth individuals as populations of interest. The basic premise of self-regulation of behavior theory is that human action is driven by attainment of goals and the degrees and forms of behavior expressed by an individual can be quantified by specific personality characteristics which affect both the response to, and velocity toward, those goals (Carver & Scheier, 1998). A survey administered to high net worth individuals (i.e., net worth of $1 million or greater) with a oversampling of high net worth individuals who have filed bankruptcy focused on self-reporting personality measures key to the self-regulation of behavior theory, such as optimism-pessimism and appetitive motives. By utilizing data gathered from high net worth individuals, a t test was used to examine mean differences in the personality characteristics of high net worth individuals who have filed bankruptcy and high net worth individuals who have not filed bankruptcy. The debt-to-income and debt-to-assets ratios were utilized as the dependent variables in an OLS regression analysis to analyze if any of the variables of interest significantly influenced the debt-to-income ratio, or DTI, or debt-to-assets ratio, or debt-ratio. This was followed by a logistic regression analysis predicting the odds of a bankruptcy filing based on the variables of interest. Potential differences in personality and behavior may explain wealth management issues that exist between high net worth individuals who have filed bankruptcy and high net worth individuals who have not filed bankruptcy.

Self-regulation of wealth

by

Gregory H.G. Schink

B.S.B.A, Central Michigan University, 2000
M.B.A., Central Michigan University, 2012

A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2018

Approved by:

Major Professor
Dr. Sonya Lutter

Copyright

Abstract

The purpose of this study was to determine the influence of self-regulation on positive financial behaviors and bankruptcy filings of high net worth individuals. The implications are directed toward various groups and factions of high net worth individuals as populations of interest. The basic premise of self-regulation of behavior theory is that human action is driven by attainment of goals and the degrees and forms of behavior expressed by an individual can be quantified by specific personality characteristics which affect both the response to, and velocity toward, those goals (Carver & Scheier, 1998). A survey administered to high net worth individuals (i.e., net worth of $1 million or greater) with a oversampling of high net worth individuals who have filed bankruptcy focused on self-reporting personality measures key to the self-regulation of behavior theory, such as optimism-pessimism and appetitive motives. By utilizing data gathered from high net worth individuals, a t test was used to examine mean differences in the personality characteristics of high net worth individuals who have filed bankruptcy and high net worth individuals who have not filed bankruptcy. The debt-to-income and debt-to-assets ratios were utilized as the dependent variables in an OLS regression analysis to analyze if any of the variables of interest significantly influenced the debt-to-income ratio, or DTI, or debt-to-assets ratio, or debt-ratio. This was followed by a logistic regression analysis predicting the odds of a bankruptcy filing based on the variables of interest. Potential differences in personality and behavior may explain wealth management issues that exist between high net worth individuals who have filed bankruptcy and high net worth individuals who have not filed bankruptcy.

Table of Contents

List of Figures

List of Tables

Acknowledgements

First and foremost, I would like to thank everyone who has assisted and guided me along the way; although a dissertation is viewed as an individual work, I could never have accomplished it without your influence. Specifically I would like to thank my wife Shawna, my parents Linda & Dr. Roger Coles, My brother, Dr. Jon Coles, My Aunt & Uncle, Dean & Danielle Schink, and all my classmates and professors (specifically my committee chair, Dr. Sonya Lutter) along the way; you been a tremendous source of motivation and wisdom and I cannot thank you enough. I would also like to recognize Dr. Gene Stout for his influence on my approach to career in both academia and business. I would also like to thank my employer, Merrill Lynch & Bank of America; as without their generosity and support, none of this would have been possible.

I would also like to acknowledge those who have provided adversity throughout my life, whom shall remain nameless; without obstacles, we cannot grow or fully reach our potential as individuals in Academia, Business, or Life.

Dedication

"Let me tell you the secret that has led to my goal. My strength lies solely in my tenacity."

--Louis Pasteur

Chapter 1 - Introduction

In 2011, the median net worth in the United States for those age 65 and older, which represented the highest median net worth of any age bracket, was approximately $171,135 (Stoffel, 2015). The total number of nonbusiness bankruptcy cases filed in 2016 was 178,353 cases which represents roughly 0.05% of the United States population, 324,310,011 people, in 2016 who filed for bankruptcy (United States Courts, 2016). Previous research has shown that specific sub-groups of the U.S. population whom have significantly higher net worth than the average American are declaring bankruptcy as a significantly higher rate (Carlson, Kim, Lusardi, & Camerer, 2015). Professional athletes, for example, often earn millions of dollars throughout their career, receive financial planning education and oversight through their Player Associations' player development programs, and are still seen declaring bankruptcy in approximately 15.7% of cases within 12 years of retirement (NFLPA, 2013) (Carlson, Kim, Lusardi, & Camerer, 2015). This number is substantial when compared to the high net worth subsection of the population, which have similar net worth characteristics, who on average, declare bankruptcy 0.08% of the time (BCS Alliance, 2016; BAPCPA, 2014; Spectrum Group, 2015).

Based on data such as that provided through professional athletes, a group whom have additional financial education and oversight yet still often struggle financially, the root cause may lie in an individual's personality, not necessarily their knowledge. Psychological theories, such as the self-regulation of behavior, attempt to explain why individuals make the choices they do based on personality characteristics. For example, the self-regulation of behavior has been used to show that having an optimistic disposition may play a key role in not only subjective well-being but also in physical health through the forms of psychological adjustments such as

those made in men recovering from coronary bypass surgery showing that mean who were more optimistic were more likely to return to physical activity quicker than those having lower levels of optimism (Rasmussen, Wrosch, Scheier, & Carver, 2006).

Statement of the Problem

By measuring an individual's predisposition toward specific personality characteristics, one can predict behaviors such as whether an individual will continuously pursue a goal to their own detriment even though it is unattainable, the likelihood of an individual pursuing a goal until completion, or whether an individual is more likely to be motivated by a reward or to avoid a punishment (Wrosch, Miller, Scheier, & Brun de Pontet, 2007). These types of predictive measures may also allow researchers and practitioners to predict which financial management approaches and techniques will be most effective on an individual basis.

Statement of the Purpose

The purpose this study was to determine what underlying personality characteristics are positively, or negatively, related to financial behavior and bankruptcy filing in high net worth individuals based on the self-regulation of behavior theory. Attempts at gathering data from professional athletes proved fruitless, although future studies should continue to explore professional athletes in greater depth versus making implications about the sample based on data from other samples.

A literature search on the self-regulation of behavior allowed the identification of specific facets of interest. Within the literature, high levels of optimism were identified as a characteristic which allowed individuals to disengage significantly sooner from unsolvable tasks (i.e., unattainable goals), than those with low levels of optimism (Aspinwall & Richter, 1999). Appetitive motives were also of interest as they are identified as being indicative of individuals

who desire to move toward a goal opposed to those with aversive motives who desire to move away from a punishment or something unpleasant (Carver, Sinclair, & Johnson, 2010). The literature also suggests that an individual who measures high in a proactive personality measurement, characterized by an individual who is predisposed to performing intentional behavior to influence their environment or situation, will have a high-level of proactive personality, a key tenet to the self-regulation of behavior theory (Bateman & Crant, 1993).

Combined with a literature review of bankruptcy and financial behaviors, a survey was constructed. This survey was distributed via Qualtrics to high net worth individuals, classified as those with a net worth of $1 million or greater, with an oversampling of those who have filed bankruptcy. Bivariate analyses explored mean differences in the personality characteristics of those who file bankruptcy versus those who do not. Two multivariate regression analyses followed. A debt-to-income ratio was used as the dependent variable in an OLS regression analysis to determine if a relationship exists between personality characteristics and a debt-oriented financial ratio. Financial behavior is, in essence, a measure or proxy for fianncial wellness (Joo, 2008). Although corporate financial ratios have long been used to measure a company's financial "financial wellness," they are relatively new when used to measure an individual's financial behavior (DeVaney, 1994; Greninger, Hampton, Kitt, & Achacoso, 1996). Joo (2008) specifically pointed to the phrase of having sufficient resources without use of debt or the debt ratio as a measure of well-being. A binary logistic regression was also performed utilizing filing bankruptcy as the dependent variable.

Although personality may be considered an innate characteristic that cannot be changed, the identification of specific personality characteristics correlated with bankrupty may allow the prescription of treatments in an attempt to prevent financially destructive behavior among at-risk

populations. Results of this study will allow high net-worth individuals to better self-identify personality characteristics which correlate with higher levels of bankruptcy and negative financial behaviors, as measured through the debt ratio. Identifying the potentially problematic associations can assist high net-worth individuals in developing their financial management team of CFP® professionals, CPA's, and estate attorneys.

Justification for the Study

The use of self-regulation of behavior theory has not been widely applied to personal finance or bankruptcy. This study will contribute to the literature by demonstrating how a psychological framework can better help explain and predict the bankrupcty behavior of high net worth individuals. Significant differences between the variables utilized to measure the tenets of the self-regulation of behavior theory and a poor debt-to-income ratio or bankruptcy filing may be transferable to the general public. The personality characteristics that may make someone a spendthrift may be similar from someone splurging on a $200 purchase or a $200,000 purchase.

Research Questions

The answers to the following research questions will provide greater insight into the connection between high net worth individuals' specific personality characteristics, financial behaviors, and likelihood of filing bankruptcy.

1. Do mean differenes exist in personality characteristics of high net worth individuals who have filed bankruptcy versus those who have not?

2. Are higher levels of optimism associated with positive financial ratio among high net worth individuals?

3. Are higher levels of behavioral approach motives associated with positive financial ratio among high net worth individuals?

4

4. Are higher levels of proactiveness associated with positive financial ratio among high net worth individuals?

5. Are higher levels of optimism associated with a lower likelihood of bankruptcy?

6. Are higher levels of behavioral approach motives associated with a lower likelihood of bankruptcy?

7. Are higher levels of proactiveness associated with a lower likelihood of bankruptcy?

Hypotheses

Examination of the following hypotheses will provide greater insight into the connection between high net worth individuals' specific personality characteristics, financial behaviors, and likelihood of filing bankruptcy.

1. Mean differenes exist in personality characteristics of high net worth individuals who have filed bankruptcy versus those who have not.

2. Higher levels of optimism will be associated with positive financial ratio among high net worth individuals.

3. Higher levels of behavioral approach motives will be associated with positive financial ratio among high net worth individuals.

4. Higher levels of proactiveness will be associated with positive financial ratio among high net worth individuals

5. Higher levels of optimism will be associated with a lower likelihood of bankruptcy.

6. Higher levels of behavioral approach motives will be associated with a lower likelihood of bankruptcy.

7. Higher levels of proactiveness will be associated with a lower likelihood of bankruptcy.

Implications

This research fills a gap in knowledge of characteristics that might help predict financial behavior and likelihood of bankruptcy among the high net worth. The results are expected to apply to high net worth individuals and the financial professionals they work with to better determine, based on personality characteristics, if they are more likely to exhibit negative financial behaviors and therefore more prone to declaring bankruptcy. Psychologists, financial planners, CPA's, estate attorneys, financial therapists, and high net worth individuals themselves, will benefit from this investigation into whether psychological characteristics supported by the self-regulation of behavior theory explain financial behavior in high net worth individuals. Even though the majority of the population are not high net worth individuals, there are sub-groups within our population to whom this is of great concern such as professional musicians, lottery winners, business owners, and those who receive inheritances.

Beyond high net individuals, the results of this study indicate the existence of personality characteristics which may be applicable to the general population regarding financial behavior and bankruptcy. One of the key findings points to a potential relationship between impulsive financial behavior, a characteristic demonstrated through the existence of the BAS fun trait, and an increased likelihood of filing bankruptcy. This result itself was interesting as previous research had demonstrated that individuals whom display the BAS fun trait are often more susceptible to dopamine-like addictions (Franken, Zijlstra, & Muris, 2006). This could also indicate that prolonged exposure to increased levels of dopamine could "rewire" the brain in such a way that may require a pharmacological treatment approach (Volkow, Fowler, Wang, & Swanson, 2004). This approach to treatment of financial behavior has not been previously explored in any significant manner.

Delimitations and Limitations

The study was designed to examine the financial behaviors of high net worth individuals through the lens of the self-regulation of behavior theory. The study oversampled high net worth individuals who have filed bankruptcy. The following sample delimitations and limitations were made.

Delimitations

As the target sample population for this study was obtained from Qualtrics survey service, the sample is limited to only those respondents who have signed up for the service. Another delimitation was using only male respondents in an attempt to provide a proxy to professional athletes, which were the initial sample of interest. The survey was distributed through Qualtrics to individuals who have identified with three traits of being male, having net worth of greater than $1 million, and having declared bankruptcy at one time (for one half of the sample). The goal of this research was to help define an issue which exists in a majority of the population of interest regarding the poor financial management and bankruptcy.

Limitations

Although over 15 months was spent attempting to collect primary data directly from professional athletes, very little success was seen. Various avenues of collection were attempted (e.g., known athletes who were acquaintances, friends of athletes, those who service athletes in different aspects (professional athlete clothier, personal assistant to Tim Tebow, etc.). The survey did make it to the front office of the Washington Redskins through a contact at Qualtrics for potential dissemination but was not approved. The reasons for this difficulty could have been attributed to a number of issues. For instance, athletes may not have trusted the anonymity of my survey due to my career as a financial advisor, professional athletes may already work with

retired athletes who are now financial advisors and are also performing their own research, thereby dissuading them from responding to similar studies (Rothstein, 2017), or the fact that professional athletes have historically been difficult to obtain sample data from to begin with.

Based on the difficulty in collection experienced, the decision was made to utilize high net worth males whom have declared bankruptcy. The study sample consisted specifically of males who had a net worth at one time of over $1 million of which some had declared bankruptcy. By utilizing males, the sample is more similar to the male-dominated professional athletics. By limiting the sample to males who had a net worth of $1 million or greater, the sample should be relatively similar to athletes in terms of assets.

A limitation exists in the discrepancy in the overall diversity of sample used in this study when compared to any of the three U.S. professional athletic leagues of interest. 83.17% percent of the sample data indicated their race as white, while 10.09% percent indicated their race as black or African American. Compare this to the racial make-up of the United States in 2016 was (a) 61% White, (b) 18% Hispanic, (c) 12% Black, (d) 6% Asian, (e) 3% Other (Henry J Kaiser Family Foundation, 2018). When looking at professional sports, the racial make-up of the National Football League in 2016 was (a) 69.7% Black, (b) 27.4% White, (c) 0.80% Latino, (d) 0.20% Other, (e) 1.9% Asian (Lapchick, 2017). The racial make-up of the National Basketball Association in 2016 was (a) 74.4% Black, (b) 19.1% White, (c) 4.9% Latino, (d) 0.9% Other, (e) 0.7% Asian (Lapchick, 2017). The racial make-up of Major League Baseball in 2017 was (a) 7.7% Black, (b) 57.5% White, (c) 31.9% Latino, (d) 1.1% Other, (e) 1.9% Asian (Lapchick, 2017).

A second limitation dealt with the accuracy of responses provided by respondents specifically regarding their finances and financial behavior. This is also due to the fact the

"socially desirable behavior" is often over-reported on surveys while "socially undesirable behavior" is often under-reported; this would be akin to elevating one's assets and decreasing ones debts (Pew Research Center, 2018).This is in part due to the fact that previous research has shown that financial-behavior scoremay not be an accurate measure of actual financial behavior (Perry & Morris, 2005).

The mean age for the sample collected of high net worth individuals was 55. This mean age represents an individual who is somewhat close to the beginning the social security retirement age as well. Although this requires notation, one must also touch on the fact that the variables of interest are personality characteristics, which are believed to be innate in nature, thereby making age somewhat of a moot point. Carver has also suggested in prior research that various personality traits are innate and can have a "genetic component" (Carver, Scheier, & Segerstrom, Optimism, 2010, p. 887).

Another limitation would be the high level of educational attainment of the sample— (a) 0.4% less than high school, (b) 3.37% high school/GED or more, (c) 8.17% some college or more, (d) 4.81% associates degree or more, (e) 33.17% bachelor's degree or more, (f) 26.92% master's degree, (g) 6.25% doctoral degree, and (h) 16.83% professional degree. When compared to the United States population who are age 25 and older, the differences are stark (a) 11.6% less than high school, (b) 29.5% high school/GED or more, (c) 16.6% some college or more, (d) 9.8% associates degree or more (e) 20.50% bachelor's degree or more, and (f) 12.0% advanced degree (U.S. Census Bureau, 2016).

Another limitation exists as the time of the last filing of bankruptcy or whether a respondent filed for bankruptcy more than once was not collected.

The limitations of lack of racial diversity, accuracy of personal finance and financial behavior responses, a high mean age, high level of educational attainment, and the lack of data on timing and frequency of the filing of a respondents bankruptcy have all been noted but these limitations should not interfere with the results of the study. Though, the limitations could potentially impact the potential generalization to the public when addressing females, individuals who are not high net worth, and the general public.

Summary

This study evaluated the financial behaviors of high net worth individuals through the lens of the self-regulation of behavior theory and its tenets. Through a literature review, which tied together aspects of psychology and behavioral studies with financial and economic measures, a survey was constructed to measure the variables of interest. A Qualtrics survey was used to explain financial behavior and bankruptcy filings and any differences that may exist between those who have filed bankruptcy and those who have not. Findings are discussed within the framework of high net-worth individuals and the special needs of that sub-population.

Chapter 2 - Review of Literature

The analyses in this study are based on male high net worth individuals with an oversampling of those who have filed bankruptcy. Individuals possessing higher levels of specific personality characteristics have been shown to better adapt to goal adversity and interference (Rasmussen et al., 2006). The literature review that follows is organized by a general review of bankruptcy and its history followed by the theoretical concepts of the self-regulation of behavior theory and how they may relate to financial behavior and bankruptcy.

Bankruptcy

Personal bankruptcy occurs when liabilities exceed assets, an individual files for a reorganization proceeding, and the court grants approval (Findlaw, 2016). There are three types of personal bankruptcy relevant to this study including Chapters 7, 11, and 13. Within a Chapter 7 filing, the liquidation of an individuals' assets through siezure is often utilized to pay off the debts and creditors of the individual and the individual emerges from reorganization without any future obligations on the debts addressed in the proceeding (Gambrell, 2016). Chapter 13 filing allows individuals to pay part or all of their debt from future income over a three to five year period. This is, in essence, a court ordered repayment plan which allows the individual to "catch-up" on their debts without necessarily liquidating assets. Chapter 11, although most often associated with business, can also be declared by individuals and there has been an increased number of "high-net individuals…(using) Chapter 11 to restructure their personal finances…" (Cisar, Crocker, & Schreiber, 2014). Chapter 11 is similar to Chapter 13 but has two major differences: first, the period is set at five years; secondly, as of April 1 of 2016, if an individual has unsecured debt exceeding $383,175 and secured debt exceeding $1,149,525, they do not

have the option to file for Chapter 13 and they must file Chapter 11 bankruptcy (Gambrell, 2016).

In 1938, the Chandler Act was enacted by which a revision to almost all provisions was addressed (Tabb, 1995). The Chandler Act, which held as bankruptcy law for the next 40 years through 1978, utilized four specific chapters of bankruptcy: Chapter X dealt with Corporate Bankruptcy; Chapter XI considered arrangements; Chapter XII focused on real property arrangement; and, Chapter XIII, the original Chapter 13, was for wage earners' reorganization plans (Jensen, 2005; Tabb, 1995). These revisions provided those filing bankruptcy to choose between liquidation of assets or repayment of debt, the modern day Chapter 7 and Chapter 13, respectively (Garrett, 2007).

The history of "modern" bankruptcy arguably begins in 1978 with the Bankruptcy Reform Act of 1978 replacing the 80 year-old 1898 act with what is referred to as the Bankruptcy Code (Tabb, 1995). The 1978 act then re-characterized individual bankruptcy filings as Chapter 7, or liquidation of assets, and Chapter 13, which allowed for a plan of repayment (Garrett, 2007). An interesting fact is that from 1980 through 2005, personal bankruptcy filings increased almost 350% from 1.2 per 1,000 persons to nearly 5.4 filings per 1,000 persons in 2005 (Garrett, 2007). Underlying changes to Chapter 13 may explain the significant increase in personal bankruptcy filings in the following 30 years such as an increase in Federal exemption levels, creditors no longer had to approve the repayment plan under Chapter 13, specific debts were dischargeable under Chapter 13 which were not available under Chapter 7, and the overall eligibility for Chapter 13 was expanded (Garrett, 2007; Shepard, 1984). An amendment in 1984 was added in an attempt to prevent those debtors filing Chapter 7 who had the ability to pay

creditors through future earnings, from filing Chapter 7 to outright avoid such obligations (Jensen, 2005).

The Bankruptcy Reform Act of 1994 added two significant developments to personal bankruptcy allowing a more expedited process for filing and an increase in the overall percentage of a filers' assets which would be exempt from creditors in the bankruptcy process (Garrett, 2007). Bankruptcy reform was a constant topic of debate between the United States House and Senate for many years and through various Presidential administrations moving forward but nothing of significance was enacted until 2005 (Jensen, 2005). The increased level of personal bankruptcy filings continued at such a pace that the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, also known as BAPCPA, was then passed over a decade later (Garrett, 2007). Interestingly, the seed of BAPCPA was the establishment of the National Bankruptcy Review Commission in 1994, some 11 years earlier (Jensen, 2005). A core focus of the act was to reduce personal bankruptcy filings through various measures such as establishing a needs based test focused on income for Chapter 7 and the establishment of better disclosure requirements for lenders (Garrett, 2007). This focus was utilized in an attempt to decrease "abuse" within the bankruptcy system by filers, specifically those filing Chapter 13 (Greene, 2015).

These crucial differences in bankrutpcy requirements lend themselves to the conclusion that most high net-worth individuals would be forced to file for Chapter 11 bankrutcpy. This concept is also supported through public bankruptcy data which outlines the average liabilities, assets, and income of Chapters 7, 11, and 13 bankruptcy filings for each year (BAPCPA, 2014). Bankrupcy Abuse Prevention and Consumer Protection Act annual data combined with annual data regarding the number of high net worth individuals with a net worth greater than $5 million

allows the extrapulation of various financial ratios and calcultions within this segment of the population (BAPCPA, 2014; Spectrum Group, 2015).

Self-Regulation of Behavior Theory

The self-regulation of behavior theory suggests that behavior is a continual process of moving toward and away from goals (Carver & Scheier, 1998). Financial ratios, which are a proxy for financial behavior, and bankruptcy, which is the result of behavior(s), can be viewed as an output function in the self-regulation of behavior system (Joo, 2008). Carver and Scheier (1998) defined goals as reference values in the larger idea of a negative feedback system, as shown in Figure 2.2.
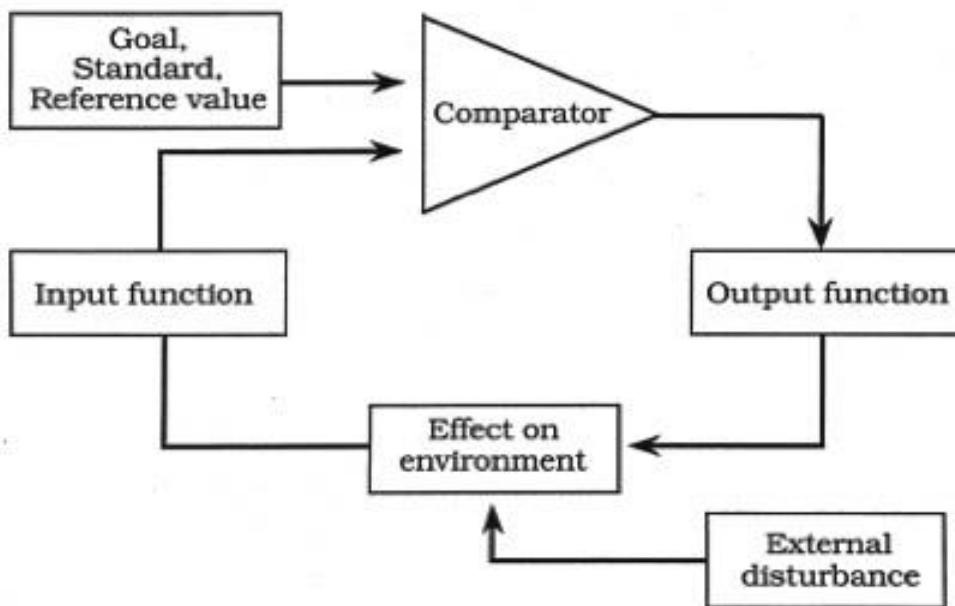
Figure 2.1 Schematic description of a feedback loop (Carver & Scheier, 1998)

The feedback system, or feedback loop, consists of six elements: an input, a reference value, a comparator, an output, external disturbance, and the effect of external disturbance on the environment. The pieces can be further related to actual functions: (a) the input is akin to perception and defines the information that is brought into the system; (b) the reference value is

14

represented by a goal or standard; (c) the comparator is where the input value is compared to the

reference value and if there exists a discrepancy between the two values, an output occurs; and

(d) the output can be seen as representative of behavior in an attempt to bring the system back

into homeostasis and results when the reference value and the input are not equal; (e) external

disturbance which can be characterized by any action that influences the input function outside

of the effect of the output; and, (f) the effect on environment of those external disturbances

(Carver & Scheier, 1998).

One way to visualize such a feedback loop is to picture the thermostat in your home. The

goal, standard, or reference value in Carver's diagram would be akin to the temperature in which

you have set the thermostat, for instance to 70 degrees. Within the feedback loop, the comparator

allows the measurement of the goal to the input. Thinking of the thermostat, the comparator

would be synonymous to the sensor inside a thermostat which is comparing the goal, or set

temperature of 70 degrees, to the input, which in the case of the thermostat is the current

temperature of the room. Moving forward, assume that the current temperature in the room is 65

degrees; this causes a detection in the sensor, or comparator, that the input is not equal to the

reference value. This inequality causes an output in Carver's diagram, and in the case of the

thermostat, this output is the furnace being turned on to expel heat. The output is intended to

cause an effect on the environment, which in this example is heating the air in the room in an

attempt to bring the temperature in line with the thermostat setting of 70 degrees. There

oftentimes exists external disturbances in the environment that can diminish or magnify the

effects of the output. For example, if a window is open in the room allowing cold air to enter, the

effect of the furnace's warm air output will be decreased. The net output then is taken in as input

back into the comparator. For example, if the comparator originally sensed the current

temperature of the room to be 65 degrees when the thermostat was set at 70 degrees, it would turn on the furnace to expel warm air in an attempt to reach 70 degrees. If a window is left open which allowed cold air to cool the furnace's output, the resulting net input may only be a temperature of 68 degrees. The comparator would then sense the inequality again and keep the furnace on in an attempt to reach the reference value of 70 degrees.

Take this idea and overlay it on a financial goal for a financial thermostat per se. For example, if your goal or reference value is having savings of $1,000,000, your input would be the value of your combined bank, savings, retirement, and investment accounts. Let us assume that the value is $750,000. The comparator then evaluates whether the input equals the reference value; $750,000 is less than $1,000,000. This disparity causes output, which in this example could be akin to working or earning a wage. Further assume that wage is $100,000 for the year but, in that year, a boat was purchased for $50,000. This purchase would be displayed as an external disturbance within Carver's feedback loop. The net result, $100,000 earnings minus $50,000 boat purchase, equals $50,000 added to the $750,000 previous savings. This results in $800,000 savings which comes back into the comparator as input.

This first example of a feedback loop is an example of behavioral approach motivation, where an individual is trying to decrease the "distance" between the input and the reference value or goal. There also exists a discrepancy-enlarging or positive-feedback loop (Rasmussen et al., 2006). In this feedback system, the comparator initiates an output function in an attempt to increase the inequality between the reference value and the input. In other words, the goal of the system is to move the input function away from the reference value, not to equalize them. Rasmussen et al. (2006) suggested the reference value in a positive feedback loop can be viewed as an anti-goal or something which an individual wants to avoid.

Proactive Personality (Feedback Loop)

Proactive personality is similar to increasing engagement of the comparator in a self-regulation system (Carver & Scheier, 1998). The increase in activity of the comparator tends to lead to increased sensitivity in detecting smaller discrepancies between the input and reference values (Carver & Scheier, 1999). Following Carver and Scheier's logic, those who are attentive to their inner thoughts would have a high level of private self-consciousness which is positively correlated with increased engagement in the comparator (Bateman & Crant, 1993; Carver & Scheier, 1981; Fenigstein, Scheier, & Buss, 1975).

Proactive personality types will scan for opportunities in their own environments through similar proactive personality methods (Bateman & Crant, 1993). Proactive personality type represents an individual who is displaying a more engaged comparator of their surroundings who is more likely to show initiative and take action until the discrepancy between the reference value and the input value are equalized.

Increased proactive personality and the ability to detect minute discrepancies between the input and reference values in the feedback loop lend itself to successful wealth management in terms of being able to monitor investments and detect any deviation from set goals. A person with a proactive personality is keenly aware of his or her finances and akin to monitoring fluctuations which when dealing with investments, can be crucial to avoiding potential downturns. In the example of a financial thermostat, this would be similar to someone who checks their account balances daily when trying to reach a savings goal.

Behavioral Approach System/Behavioral Avoidance System (BIS/BAS)

The concept that human goals are either geared more toward a goal-attainment focus or a punishment-avoidance focus is inherent in the self-regulation of behavior theory. The concept of

the behavioral approach system/behavioral avoidance system is that of measuring an individual's propensity to move toward rewarding stimuli, behavioral approach, and away from negative stimuli, behavioral avoidance (Demaree, DeDonno, Burns, & Everhart, 2008). Where the behavioral approach system/behavioral avoidance system (BIS/BAS) concept relates to successful wealth management is with the concept of risk taking and goal polarity. An individual with a higher BIS score, when compared to BAS, will be more risk-sensitive although both BAS and BIS have an influence on risk-preferences (Demaree et al., 2008). Those high on the BAS end of the scale often have a preference for aggressive investment strategies (Foster, Misra, & Reidy, 2009). Taking into account that opposite ends of the BAS/BIS pendulum are more inclined to have very different risk-taking, or risk-avoiding, preferences, one must then look at the influence of athletics on the BIS/BAS scale. As a high net worth individual, one may likely be more inclined to a goal-achiever and have a high BAS score and thereby be pre-inclined to taking high levels of risk to achieve their goals and this may increase the likelihood of a preference for increased risk when investing. An increased level of risk in investments also carries with it an increased level of loss.

For goal polarity, the idea can be simplified by thinking of an individual who has a goal of earning $10,000,000 in savings. This is a goal they are moving toward, or approaching, and would be found on the BAS side of the spectrum. An individual who has a goal of not becoming broke, or having zero dollars, would have an anti-goal, or goal they are moving away from and be found on the BIS spectrum.

Optimism

When confronting a difficult situation or goal, an optimistic person should retain a set of positive feelings or emotions. When an individual is confronted with the situation of an

18

unattainable goal and cannot disengage, in addition to being counterproductive, it may also create declines in subjective well-being (Rasmussen et al., 2006). Optimism has been found to help facilitate disengagement from such unsolvable tasks and also with the reengagement of viable alternative goals (Aspinwall & Richter, 1999; Duke, Leventhal, Brownlee, & Leventhal, 2002). This becomes key in financial behavior and bankruptcy as individuals who display higher levels of optimism would be more likely to have the ability to disengage from an unattainable financial goal and then reengage in a more practical financial goal. For example, if a professional athlete has the financial goal to accumulate a net worth of $20 million but that goal is unattainable, the ability to disengage from the goal of $20 million in net worth could be key to the amount of overall risk that individual is willing to take. For example, a professional athlete that is not able to disengage would most likely show lower levels of optimism, and may become more likely to take higher levels of risk in financial investments to achieve such a goal and thereby have greater financial risk. An individual high in optimism would be more likely to disengage from the financial goal and then reengage in a more realistic financial goal, which could be a net worth of $10 million. To achieve that new goal, the individual may be required to take less financial risk through investments which would not need to return as high of a return.

An optimistic individual should be able to more easily disengage from unattainable goals and reengage in alternative, more attainable goals through a process of adaptive self-regulation (Rasmussen et al., 2006). The relationship of goal disengagement and reengagement to successful wealth management is paramount. Investors will have investments which do not always provide gains. The key to successfully managing those investments is not only to determine when to sell winners but also to determine when to cut losses and sell losing investments. This type of financial goal reengagement and disengagement within investment

decisions allows individuals to "adjust" financial goals within the comparator, such as selling winners early or cutting losses with losers, and readjust more easily (Shefrin & Statman, 1984) (Rasmussen et al., 2006). An individual who can easily adjust to unattainable investment goals would be better suited to replace those goals and reengage (i.e. reinvest) within the market (Rasmussen et al., 2006).

It must also be noted that within the self-regulation of behavior system, previous research has also shown potential negative effects of increased optimism (Carver & Scheier, 2001). Carver (2001) indicated that an individual with a strong behavior approach system, or discrepancy-reducing reference goal, and high levels of optimism, may continue to attempt to move toward that goal, through behavior, even when faced with enormous opposition. This type of goal persistence often occurs in the highly optimistic individual's comparator, as the assessment of progress toward the goal may be viewed with a more "optimistic" evaluation. When this type of evaluation occurs, it is often overstated when compared to what is realistically occurring through the current behavior or action (Carver & Scheier, 2001). This can lead to a prolonged attempt to reach a goal due to a false sense of progress when goal-disengagement may actually be in the individual's best interest. Although healthy levels of optimism often allow individuals to disengage from goals and reengage in new goals, high levels of optimism could potentially lead some individuals to remain engaged to an unachievable goal for too long. Highly optimistic individuals may approach adverse situations with a false sense of confidence that they can successfully navigate them, such as an investment in a complex business deal, when in reality, a healthy dose of pessimism may prove more beneficial, as it would allow disengagement if necessary (Carver & Scheier, 2001).

Although this study will only address three components of the self-regulation of behavior theory, there are multiple other components and their interaction with one another is often key in understanding behavior through this lens but is also beyond the scope of this paper. To examine and survey for all the various personality traits would be prohibitive in terms of not only survey length but also sample size requirements. The self-regulation of behavior theory has many components that interact on various sub-levels and additional detail on some of the more complex aspects of the self-regulation of behavior theory has been included in Appendix IV to touch on some of these key interactions.

Summary

The review of literature illustrates difficulties any individual may face and, in particular, some of the issues that high net-worth individuals may encounter with managing their financial assets. The personality characteristics of proactive personality, behavioral approach tendencies, and optimism can be utilized to predict behaviors. By identifying those personality characteristics which may be related to financial behavior and bankruptcy, such as risk-taking preferences, the development of an identification tool for determining predisposition to poor wealth management may be possible. Although an individual's personality cannot be changed, treatment recommendations are possible when individuals with personality characteristics indicative of poor wealth management skills can be identified. If someone is identified as being at-risk for negative financial behavior or declaring bankruptcy, a variety of financial products and tools can be put in place to help an individual from making poor financial decisions such as irrevocable trusts, annuities, and budgeting techniques.

Financial Behavior

A 1980 study looked into the predictive ability of financial ratios when estimating corporate bankruptcy (Ohlson, 1980). Ohlson used corporate 10-K filings one and two years previous to filing bankruptcy and then compared various ratios to those of non-bankrupt firms. Although some of the ratios would not be applicable to individuals, such as working capital divided by total assets, others had direct applicability to individuals such as overall size of assets/net worth, total liabilities divided by total assets, net income divided by total assets, and change in net income year-over-year (Ohlson, 1980). Through the analysis of various models which utilize varying combinations of the ratios, Ohlson found that four factors were statistically significant for assessing corporate bankruptcy probability; size, total liabilities divided by total assets, a performance measure (net income divided by total assets), and a measure of liquidity, which is difficult to control for in individual respondents in the same manner as in Ohlson's study.

Using guidance from Ohlson's (1980) study, the current study isolated similar values within individual respondents for analysis. Size was accomplished by ascertaining "what is your household's approximate level of total assets," which is referred to as household assets. Total liabilities divided by total assets is ascertained by dividing the answer to the question "what is your household's approximate debt/liabilities" by household assets. The performance measure can be calculated by dividing "what is your household's approximate level of assets." Again, a suitable proxy for a liquidity did not offer itself in the current study. Using Ohlson's study for guidance, this ratio was incorporated into the analysis of the data to determine if they had any significant predictive ability when applied to individual respondents.

There has been significant previous research indicating a relationship between poor financial behavior and bankruptcy in individuals (Evans & Bauchet, 2017; Institute for Financial Literacy, 2009). Previous studies have concentrated on both the use of specific financial behavior, such as "I track my monthly expenses; yes or no?," as well respondents self-assessment of their financial behaviors such as rating themselves of the control they have on their spending on a scale ranging from poor to excellent (Perry & Morris, 2005; Xiao, Sorhaindo, & Garman, 2006; Xiao, Tang, & Shim, 2009). A construct of financial behavior relating to credit use, cash, and budget management was utilized to measure overall financial behavior as an independent control variable in the study.

For the measurement of financial outcome as a dependent variable, a financial ratio was used as a proxy (Joo, 2008). The "debt ratio," which is debt divided by assets, is a measurement of overall "financial leverage" or how much an individual is borrowing from creditors compared to their assets (Averkamp, 2018). Previous studies have specifically shown that "excessive amount(s) of debt" influence personal bankruptcy but when taking into account that someone who has a large net worth could be using a numeric debt figure that may seem "excessive," a ratio to their overall assets provided more insight within the sample population (Evans & Bauchet, 2017, p. 1).

It must also be noted that the use of debt as leverage can also be a sign of positive financial ratio in certain cases (McWhinnie, 2014). The idea has also been prevelant since the great recession of 2008-2009. As the interest rate was lowered to near zero, those who could borrow funds, were borrowing at extremely low interest rates. The idea of borrowing money to purchase a home on a 30-year fixed mortgage at a rate as low as 3.31%, as was available in

November of 2012, alloweed consumers to purchase significantly "more house" while keeping their payments the same (Shen, 2016).

Other Known Contributors to Bankruptcy

Other factors have been shown to contribute to bankruptcy filings and financial behavior. To control for some of the other known contributors to bankruptcy and financial outcomes in the current study, respondents were asked to indicate their level of education, married, perceived adolescent family social class, children, white, income, employment status, and self-perceived financial behavior as they have all previously displayed relationships with financial behavior and, or, personal bankruptcy (Han & Li, 2011; Perry & Morris, 2005; Stavins, 2000).

Chapter 3 - Methods

This chapter describes the method and procedures used to answer the research questions introduced in Chapter 1. The study utilized an online Qualtrics survey to assess the personality, financial outcomes, and bankruptcy filings of high net worth individuals with an oversampling of those who have filed bankruptcy based on tenets of the self-regulation of behavior theory. Findings can be used to develop an identification tool of psychological characteristics associated with negative financial outcomes that could be utilized throughout the target population to intervene with appropriate services to hopefully modify financial behaviors.

Sample

Initially, 209 total surveys were returned from Qualtrics of which 174 surveys had been fully completed. This was not in the original spirit of the research as Qualtrics had agreed to return only fully completed surveys as part of the contract. Of the 35 surveys which were partially completed, 27 of them, or 77.14%, contained missing data within questions on financial behavior, BIS/BAS, and optimism. This points to a potential issue in data collection methods in the sense that respondents did not complete the personality questions at such a higher rate. The low response rate could be due to survey design as they were at the end of the questionnaire or that respondents did not feel comfortable answering "personality" questions. The 15.31% of missing data in my sample falls well within what has been reported as "normal" for psychology and educational studies (Enders, 2003; Peng, Harwell, Liou, & Ehman, 2006). Although not often the preferred method of dealing with missing data, previous research has shown listwise deletion to often perform well regardless of the cause of the missing data and may be the preferable approach over methods of imputation in certain scenarios (Cheema, 2014; Smiley, 2015).

The sample consists of individuals with a net worth of $1 million or more with an oversampling of those who have filed bankruptcy at some point in their life (see Appendix A for further clarification). The average respondent was a white, 55 year old, male, who had a bachelor's degree, was married with almost three children, and whom was currently working. The average respondent was also one who would classify their adolescent family social class as "middle class" but who indicated an average income level of between $250,000- $499,999. The average respondent also indicated an asset level of nearly $5,000,000 and a debt level between $500,000 and $999,999.

Distribution of Survey

Qualtrics survey service was utilized to draw the desired respondents from their sample population at a cost of $10 per completed survey. Through a system of computer programs, Qualtrics is able to automate the survey process online and offer respondents e-gift cards as an incentive (Qualtrics, 2017). Upon completion of the survey, respondents were offerred a summary report of the results which may be enlightening to them.

To test the feasibility and effectiveness of the survey, a pilot study was utilized with a sample of roughly 20 individuals with a net worth of greater than $1 million. Utilizing a pilot study sample of that size allowed for any revisions to be made from observations from data response such as identification of potential "clustering" of respondent answers (Dillman, 2000). Due to the relatively low number of ultra-high net worth individuals in the Qualtrics sample pool, utilizing those with a net worth of greater than $1 million allowed for greater population to draw the pilot study sample from.

Dependent Variables

Debt-to-Income Ratio

Respondents to the survey were specifically asked to identify their household assets. Specific examples of assets were provided such as home value, investment(s), and bank account value. Respondents were then asked to indicate roughly how much their household's approximate level of debt or liabilities was and examples were included to help facilitate comprehensive responses such as mortgage(s), credit card debt, car debt, real estate debt, business debt, etc. Due to the potential for high net worth individuals to have a considerable level of individual debt, an all-inclusive measure was determined to be more efficient. A simple ratio was utilized which divided the debt level indicated by the respondent (e.g., if a respondent indicated a total level of debt between $100,000- $499,999, which was the second possible income category available, income was recoded as 2) by the income level indicated by the respondent (e.g., if a respondent indicated a household annual income of between $500,000-$999,999, which was the four possible income category available, income was recoded as 4). In these examples, the debt to income ratio would be two divided by four, or 0.50. This debt-to-income ratio was used as a proxy for financial outcome (Joo, 2008).

Although the underlying components of the debt ratio in this study were ordinal variables, the debt ratio itself was treated as continuous. Previous research has shown that utilizing ordinal variables in a continuous manner, even when spacing is unequal, should be considered (Pasta, 2009). Pasta's (2009) argument lies in the fact that if an ordinal variables itself is important or substantial enough to consider, than it should also be important to consider as a continuous variable. Where a potential issue arises is that the one-unit change in an ordinal value is not uniform; one can also argue that the one unit change in an individual's wealth from

$20,000,000 to $20,000,001 does not have the similar effect as a change in wealth from $10 to $11 making the idea of equality of change in wealth itself, measured by dollars, ordinal in nature (Pasta, 2009). Further support for utilizing of this ratio can be derived from the results. The mean debt response was 2.97 while the mean asset response was 4.94 in the study; 2.97 divided by 4.94 equals 0.601, or simple rounding would provide us with 0.6. This data is supported by 2016 statistics showing that the ratio of total debt to equity in United States was 54.62 percent while household debt to GDP in the first quarter of 2016 was 80.06% (FRED Economic Data, 2017) (Statista, 2017).

Bankruptcy

Respondents were asked whether they have previously, or are currently in the process of, declaring or filing Chapter 7, 11, or 13 bankruptcy. Respondents who have previously or are currently filing any of these three bankruptcies were given a score of 1, otherwise 0.

Independent Variables

Based on the self-regulation of behavior theory and identification of personality characteristics associated with the theory, predictor variables included proactive personality, behavioral approach/behavior avoidance systems, and optimism. The research questions from Chapter 1 are restated below for reference:

Analysis 1

1. Are there mean differenes exist in personality characteristics of high net worth individuals who have filed bankruptcy versus those who have not?

Analysis 2

2a. Are higher levels of optimism associated with a financial ratio among high net worth individuals?

2b. Are higher levels of behavioral approach motives associated with a positive financial

ratio among high net worth individuals?

2c. Are higher levels of proactiveness associated with a positive financial ratio among

high net worth individuals?

Analysis 3

3a. Are higher levels of optimism associated with a lower likelihood of bankruptcy?

3b. Are higher levels of behavioral approach motives associated with a lower likelihood

of bankruptcy?

3c. Are higher levels of proactiveness associated with a lower likelihood of bankruptcy?

Proactiveness

Proactiveness, or proactive personality, which is the concept of sensitivity of the

comparator within Carver's model, was measured using a 17-item self-reporting measure on

which respondents answered, on a 5-point Likert scale ranging from "strongly agree" to

"strongly disagree," questions such as "I am constantly on the lookout for new ways to improve

my life" and "I feel driven to make a difference in my community, and maybe the world." The

items were then summed to arrive at a score ranging from 17 to 85. Prior studies have reported

reliability estimates of 0.89 (Bateman & Crant, 1993).

Behavioral Approach Motives

The concept of an individual being more motivated by behaviors that approach a goal or

those which avoid an anti-goal is measured through the behavioral inhibition system and

behavioral approach system (BIS/BAS) scales (Carver & White, 1994). The scales, developed by

Carver and White (1994), yield four separate scores, one for the BIS and three for the BAS

scales entitled reward responsiveness, drive, and fun seeking. Cronbach's alpha was originally

reported to be 0.74 for the BIS scale; 0.73 for the reward responsiveness scale; 0.76 for the drive scale; and 0.66 for the fun seeking scale (Carver & White, 1994). The BIS/BAS is a 24-question assessment that measures a respondent's responses to statements on a 4-point Likert scale ranging from "very true for me" to "very false for me" such as "a person's family is the most important thing in life" or "even if something bad is about to happen to me, I rarely experience fear or nervousness" (Carver & White, 1994).

Optimism

Optimism was measured using Carver's Life Orientation Test-Revised (LOT-R), which has shown a Cronbach's alpha coefficient of 0.78 in prior research using a sample of 4,309 undergraduate students (Scheier, Carver, & Bridges, 1994). The LOT-R is a 10-question assessment that measures a respondent's responses to statements on a 5-point Likert scale ranging from "I agree a lot" to "I disagree a lot" on questions such as "in uncertain times, I usually expect the best" or "it's easy for me to relax" (Scheier et al., 1994).

Demographic Characteristics

To control for other known contributors to bankruptcy and financial outcomes, respondents were asked to indicate their level of education, married, perceived adolescent family social class, children, white, income, working and financial-behavior score. Education was measured by a categorical variable of six possible responses of (a) did not complete high school, (b) regular high school diploma/GED or alternative credential, (c) some college, (d) college graduate, and (e) post-college education and was coded into a continuous variable. Married was measured with seven possible responses of (a) single, never married, (b) married without children, (c) married with children, (d) divorced, (e) separated, (f) widowed, and (g) living with partner. This was then coded into two categories of those whom are married (with or without

children) and those who are not married. Adolescent family social class was measured with a categorical variable with five possible responses of (a) lower class, (b) lower-middle class, (c) middle class, (d) middle-upper class, (e) upper class. Children was measured by a continuous variable and top coded at 12 or more children. White was measured by a categorical variable of six possible responses of (a) White, (b) Black or African American, (c) Hispanic or Latino, (d) Asian/Pacific Islander, (e) Native American or Alaska Native, and (d) other. These six categorical responses were then recoded into a binary variable of White (1) versus non-White (0).

Income was measured by a categorical variable of nine possible responses of (a) $0-$99,999; (b) $100,000 - $249,999; (c) $250,000 - $499,999; (d) $500,000 - $999,999; (e) $1,000,000 - $2,499,999; (f) $2,500,000 - $4,999,999; (g) $5,000,000 - $9,999,999; (h) $10,000,000 - $19,999,999; and (i) $20,000,000+. Working was measured with a categorical variable with six possible responses of (a) employed, full time; (b) employed, part-time; (c) not employed, looking for work; (d) not employed, not looking for work; (e) retired; and (f) disabled, not able to work. This variable was then recoded into a binary variable of employed (1) versus not (0). The Qualtrics survey is shown in Appendix B.

The inclusion of the three variables, education, perceived adolescent family social class, and financial-behavior score, was utilized in an attempt to control for specific measures which previously research has shown to be highly influential in financial behavior itself (Han & Li, 2011; Perry & Morris, 2005; Stavins, 2000). When looking specifically at perceived adolescent family social class, the implied impact and effect that family class in adolescence can have on an individual throughout their lifetime is well documented (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). Krause (et al) goes on to indicate how this initial social class

31

can have a snowball effect when looking at its effect on variables such as future educational attainment opportunities as well as fundamental generational knowledge passed from parent to child and the depth of such knowledge.

Data Analyses

All data was unweighted and was analyzed using SPSS® analytic software for Windows. Data categories that had few or no responses were combined and recoded in certain instances where appropriate for example, working was re-coded into either employed (employed full-time combined with employed part-time) and not-employed and married was re-coded into either married or not-married to allow for a more concise coding of the categories. The reference categories were selected based upon the theoretical foundation of self-regulation and related literature. Within the self-regulation of behavior theory, a feedback loop identifies specific personality traits which effect various aspects of goal setting and achievement. By measuring an individual's level of proactive personality, BIS/BAS, and optimism this study attempted to determine if a relationship exists between personality and previous declaration of bankruptcy.

A *t* test and two regression analyses were conducted. The *t* test was used to determine if significant differences existed in responses to the variables of interest between those whom have declared bankruptcy from those whom have not declared bankruptcy. The first OLS regression used a respondent's debt-to-income ratio as the dependent variable to analyze if any of the variables of interest had a significant effect on the DTI which was used as a proxy for positive financial outcomes (Joo, 2008). Key independent variables were proactive personality, BIS/BAS, and optimism. The second binary logistic regression analyzed the likelihood of filing bankruptcy based on key independent variables (proactive personality, BIS/BAS, and optimism) to analyze

what the magnitude of influence, if any, the key variables had on a respondent declaring

bankruptcy.

Chapter 4 - Results

Chapter 4 shows the results of the descriptive statistics, mean comparisons, and

regression analyses used to test the following research questions introduced in Chapter 1.

Descriptive Statistics

Table 4.1 provides a summary of the descriptive statistics of the variables used in the

multivariate analyses. Cronbach's alpha was calculated for each of the scales from the sample

data as well.

Table 4.1 Means, Standard Deviations, Ranges, and Cronbach's Alpha for High Net Individuals (N = 174)

Variables	*M*	*SD*	Range
Debt	2.970	2.530	1 – 9
Assets	4.940	1.480	1 – 9
Debt-to-assets	.566	.390	.11 – 2.25
Debt-to-income	.9195	.960	.13 - 8
Bankruptcy	0.460	.500	0 – 1
Proactive Score	40.210	9.910	21 – 77
BIS	17.690	3.190	9 – 27
BAS Drive	11.380	2.640	4 – 16
BAS Fun	11.470	2.430	5 – 16
BAS Reward	15.740	2.720	5 – 20
Optimism Score	13.860	4.280	6 – 28
Fin Behv Score	21.520	4.000	5 – 25
Education[1]	0.840	.370	0 – 1
Married[2]	0.300	.460	0 – 1
Adolescent family social class [3]	3.130	.990	1 – 5
Children	2.820	1.490	1 – 12
White[4]	0.830	.380	0 – 1
Income[5]	3.340	2.170	1 – 9
Working[6]	0.620	0.490	0 – 1
Age	55.110	16.76	19-99

[1] Education refers to level of educational attained indicated by respondent coded as follows; 1= Bachelor's degree or greater, 0= less than a bachelor's degree

[2] Married: 1= *married*, 0 = *Not-Married*.

[3] Adolescent family social class refers to family financial status during adolescence indicated by respondent coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

[4] White: 1 = *White*, otherwise 0 .

[5] Income refers to household's approximate annual income level indicated by respondent coded as follows; 1= $0-$99,999, 2= $100,000-$249,000, 3= $250,000-$499,999, 4= $500,000-$999,999, 5= $1,000,000-$2,499,999, 6= $2,500,000-$4,999,999, 7= $5,000,000-$9,999,999, 8=$10,000,000-$19,999,999, 9=$20,000,000.

[6] Working: 1= *Employed, full-time or part-time*, 0= Not-employed.

Cronbach's Alpha

Using the sample data, Cronbach's alpha was calculated for the proactive personality scale, the BIS/BAS Scale, the Optimism/LOT-R scale, and for the financial behavior scale (see below).

Proactive

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.909	.912	17

BIS/

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.617	.	7

BAS Fun

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.737	.	4

BAS Drive

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.807	.	4

BAS Reward

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.792	.	5

LOT-R

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.714	.736	10

Financial Behavior

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.891	.893	5

Analysis 1: Mean Differences

An independent sample *t* test was conducted to compare the variables of interest in those respondents who have declared bankruptcy and those who have not declared bankruptcy to determine if any statistically significant differences exist. The results of the analysis showed that BAS fun, optimism, and BIS all displayed the assumption of homogeneity through the Levene's test. This implies that the variance of the populations for BAS fun, optimism, and BIS are equal.

Using the top line for the *t* test of equal variances assumed, we can then conclude that both BAS fun and optimism show significant differences in responses for those whom had previously declared bankruptcy versus those who did not declare bankruptcy. The *t*-test results are summarized in Table 4.2.

There was a significant difference in BAS fun scores for bankruptcy (*M* = 12.12, *SD* = 2.25) and no-bankruptcy (*M* = 10.92, *SD* = 2.25) conditions; $t(188)$= -3.46, *p* = 0.001. This suggests that those who declare bankruptcy are more likely to have a higher BAS fun score or, that a relationship exists between having a higher level of BAS fun trait and being more likely to declare bankruptcy. There was also a significant difference in optimism scores for bankruptcy (*M* = 15.91, *SD* = 4.20) and no bankruptcy (*M* = 12.13, *SD* = 3.53) conditions; $t(190)$= -6.79, *p* = 0.000. This suggests that those who declare bankruptcy are going to have a higher optimism score or, that a relationship exists between being optimistic and being more likely to declare bankruptcy. This does not mean that optimism causes bankruptcy but rather that a statistically significant relationship exists between the two variables. Through the two-tailed test, we can also conclude that the differences in variability for BAS drive, BAS reward, education, proactive score, and children are likely due to chance, implying that no relationship exists.

Table 4.2 Independent Samples *t* test

	Mean Bankruptcy	Mean no Bankruptcy	T (df)	Sig.
Debt	4.630	1.580	-9.86 (116.22)	.000
Assets	5.450	4.510	-4.55 (169.64)	.000
Proactive Score	39.930	40.440	.34 (155.58)	.730
BIS	17.980	17.450	-1.13 (188)	.260
BAS Drive	11.730	11.090	-1.67 (173.43)	.100
BAS Fun	12.120	10.920	-3.46 (188)	.001
BAS Reward	15.540	15.910	.88 (142.23)	.380
Optimism Score	15.910	12.130	-6.79 (190)	.000
Fin Behvr Score	19.890	22.880	5.24 (120.22)	.000
Education	.750	.920	3.04(1145.44)	.003
Married	.510	.880	5.979 (146.92)	.000
Adolescent family social class	3.360	2.940	-2.93 (170.65)	.004
Children	2.660	2.950	1.34 (155.96)	.180
White	.670	.960	-5.40 (112.27)	.000
Income	4.340	2.500	-6.27 (147.17)	.000
Working	.830	.440	-6.12 (190.49)	.000
Age	45.550	63.310	8.154(138.04)	.000

[1] Education refers to level of educational attained indicated by respondent coded as follows; 1= Bachelor's degree or greater, 0= less than a bachelor's degree

[2] Married: 1= *married*, 0 = *Not-Married*.

[3] Adolescent family social class refers to family financial status during adolescence indicated by respondent coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

[4] White: 1 = *White*, otherwise 0 .

[5] Income refers to household's approximate annual income level indicated by respondent coded as follows; 1= $0-$99,999, 2= $100,000-$249,000, 3= $250,000-$499,999, 4= $500,000-$999,999, 5= $1,000,000-$2,499,999, 6= $2,500,000-$4,999,999, 7= $5,000,000-$9,999,999, 8=$10,000,000-$19,999,999, 9=$20,000,000.

[6] Working: 1= *Employed, full-time or part-time*, 0= Not-employed.

Analysis 2: Financial Ratio

A financial ratio of debt-to-income and a debt-to-asset ratio were used to quantify an individual's financial health based on their level of debt when compared to their level of income or assets, which are common ratios used in measuring personal financial health. These ratios were then utilized as the dependent variables in OLS regression analyses as they served as a proxy for positive financial outcome, or positive financial well-being, which has been previously

used to describe an assessment of an individual's financial health (Greninger et al., 1996; Joo, 2008).

Table 4.3 displays the results of an ordinary least squares (OLS) regression analysis using a debt-to-income ratio (DTI) as a dependent variable. The reasoning behind utilizing this ratio over debt-to-income was that insolvency has been previously linked in research to poor DTI (DeVaney, 1994). Although the exact value of what is considered a "healthy" DTI, its overall useful is agreed upon (Garman & Forgue, 1991) (Lytton, Garman, & Porter, 1991). When running an OLS on the debt-to-income ratio with all variables measured, the R^2 value was 0.304 meaning that the model explained 30.4% of the dependent variable results, i.e. financial ratio. A correlation matrix is included in Appendix D as the income level and bankruptcy variables displayed fairly strong levels of correlation with the debt ratio (.52 and .58, respectively). The variables that showed significance in that model were BAS reward, financial behavior score, and income. The BAS reward had a standard error equal to 0.042 which was significant at the .09 level (90% confidence level) with a beta of -.072 indicating that for each increase of a respondent's financial behavior score, their increase debt-to-income ratio decreased on average by 0.072. The financial behavior score variable had a standard error equal to 0.021 which was significant at the .001 level (99% confidence level) with a beta of -.071 indicating that for each increase of a respondent's financial behavior score, their increase debt-to-income ratio decreased on average by 0.071. The income variable had a standard error equal to 0.039 which was significant at the .001 level (99% confidence level) with a beta of -.232 indicating that for each increase of a respondent's financial behavior score, their increase debt-to-income ratio decreased on average by 0.232. The financial behavior score, also showing significance, fit the model well in the sense that the model predicted that the higher a respondent scored on the financial

behavior score, the lower their debt-to-income ratio should have been. The Bas reward

indication, which is an indication of an individual who reacts positively to a reward or to the

anticipation of a reward, would also fit the model well in the sense that the reward, or anticipated

reward, could be having a financially healthy debt-to-income ratio.

Table 4.3 Summary of Regression Analysis for Variables Predicting Debt-to-Income Ratio (N = 174)

Model	Unstandardized Coefficients		Standardized Coefficients
	B	**Std. Error**	**Beta**
(Constant)	4.330	1.335	
Bankruptcy	.225	.200	.120
Proactive Score	-.011	.009	-.111
BIS	-.005	.023	-.017
BAS Drive	.017	.041	.047
BAS Fun	.048	.038	.122
BAS Reward	-.072	.042	-.201 *
Optimism Score	.010	.020	.046
Fin Behvr Score	-.071	.021	-.282 ***
Education	-.122	.211	-.047
Married	-.172	.180	-.082
Adolescent family Social Class	.001	.076	.001
Children	-.025	.056	-.036
White	-.091	.211	-.037
Income	-.232	.039	-.531 ***
Working	.168	.169	.088
Age	-.007	.006	-.122

[1] Education refers to level of educational attained indicated by respondent coded as follows; 1= Bachelor's degree or greater, 0= less than a bachelor's degree

[2] Married: 1= *married*, 0 = *Not-Married*.

[3] Adolescent family social class refers to family financial status during adolescence indicated by respondent coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

[4] White: 1 = *White*, otherwise 0 .

[5] Income refers to household's approximate annual income level indicated by respondent coded as follows; 1= $0-$99,999, 2= $100,000-$249,000, 3= $250,000-$499,999, 4= $500,000-$999,999, 5= $1,000,000-$2,499,999, 6= $2,500,000-$4,999,999, 7= $5,000,000-$9,999,999, 8=$10,000,000-$19,999,999, 9=$20,000,000.

[6] Working: 1= *Employed, full-time or part-time*, 0= Not-employed.

Unstandardized Coefficients represent amount the dependent variable will change if we change the independent variable by one unit (keeping all other variables constant)

Standardized Coefficients represent those in which the coefficients are measured in equal units (i.e. a beta of 1.5 indicates a change of one standard deviation in the independent variable will result in a 1.25 standard deviation increase in the dependent variable)

*$p < .10$. ** $p < .05$. *** $p < .01$.

When looking at the sample of high net worth individuals, it must also be noted that high income does not necessarily equal high net worth and that the two do not have a 1-to-1 correlation (Don't Quit Your Day Job..., 2016). As the Don't Quit Your Day Job (2016) article goes onto to show, an examination of data from the 2013 Survey of Consumer Finances shows that many respondents indicating wealth of $1,000,000 or greater were displaying income levels of less than $100,000. This is important because high net worth individuals may wish to shield income specifically for the purpose of lowering potential tax rates and that would possibly skew a debt-to-income analysis. This is why it is prudent to examine a debt-to-assets ratio within this population in addition, as it may serve as a better indicator of financial leverage by a respondent (See Table 4.4).

Individuals may have a high level of wealth at the time of the survey but be showing a low level of income but tax-purposes. This does not imply that the level of a respondent's income was always low but when measured at the static point of when the survey was administered, respondents may be displaying that characteristic.

Table 4.4 Summary of Regression Analysis for Variables Predicting Debt-to-Assets Ratio (N = 174)

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	.729	.439	
Bankruptcy	.207	.066	.270 ***
Proactive Score	-.004	.003	-.101
BIS	.004	.008	.031
BAS Drive	.001	.013	.006
BAS Fun	.011	.013	.070
BAS Reward	-.012	.014	-.080
Optimism Score	.002	.007	.021
Fin Behvr Score	-.014	.007	-.132 *
Education	.085	.069	.081
Married	-.067	.059	-.079
Family Class	.033	.025	.081
Children	.006	.019	.021
White	.023	.069	.023
Income	.034	.013	.188 ***
Working	-.006	.056	-.007
Age	-.006	.002	-.250 ***

[1] Education refers to level of educational attained indicated by respondent coded as follows; 1= Bachelor's degree or greater, 0= less than a bachelor's degree

[2] Married: 1= *married*, 0 = *Not-Married*.

[3] Adolescent family social class refers to family financial status during adolescence indicated by respondent coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

[4] White: 1 = *White*, otherwise 0 .

[5] Income refers to household's approximate annual income level indicated by respondent coded as follows; 1= $0-$99,999, 2= $100,000-$249,000, 3= $250,000-$499,999, 4= $500,000-$999,999, 5= $1,000,000-$2,499,999, 6= $2,500,000-$4,999,999, 7= $5,000,000-$9,999,999, 8=$10,000,000-$19,999,999, 9=$20,000,000.

[6] Working: 1= *Employed, full-time or part-time*, 0= Not-employed.

Unstandardized Coefficients represent amount the dependent variable will change if we change the independent variable by one unit (keeping all other variables constant)

Standardized Coefficients represent those in which the coefficients are measured in equal units (i.e. a beta of 1.5 indicates a change of one standard deviation in the independent variable will result in a 1.25 standard deviation increase in the dependent variable)

*$p < .10$. ** $p < .05$. *** $p < .01$.

When running an OLS on the debt-to-assets ratio with all variables measured, the R-squared value was 0.551 meaning that the model explained 55.1% of the dependent variable results, i.e. financial ratios. In terms of social science studies, this is promising as an R-squared value of 0.551 as previous research has indicated an R-squared value as low as 0.10 as a baseline requirement for social science studies (Falk & Miller, 1992). Falk and Miller (1992) also found

that the data has a relatively high amount of explanatory power in the realm of social sciences as 0.10 is often the recommended minimum for a research study to be adequate, but one thing to consider is that the debt-to-assets ratio is a measure of what an individual's debts and assets were at the time of the survey, not at the time of their potential bankruptcy (Falk & Miller, 1992). A correlation matrix is included in Appendix D as the income level and bankruptcy variables displayed fairly strong levels of correlation with the debt ratio (.52 and .58, respectively). The variables that showed significance in that model were bankruptcy, financial behavior score, income, and age. The bankruptcy variable had a standard error equal to 0.66 which was significant at the .01 level (99% confidence level) with a beta of 0.207 indicating that those whom declared bankruptcy increased the debt ratio on average by 0.207. This may seem counterintuitive as the declaration of bankruptcy should, in theory, reduce or eliminate, an individual's debt. Previous research focusing on financial analysis of differences between bankruptcy filers and non-filers data taken from the 1998, 2002, 2004, and 2007 waves of the Survey of Consumer Finance specifically examined the debt-to-assets ratio (Han & Li, 2011).

Han and Li's (2011) data indicated that those who identified as non-filers had a debt-to-asset ratio of 16.8% while those who identified as filers had a debt-to-asset ratio of 35.7%. As the data is taken at a point after a respondent has declared bankruptcy, it must be noted that the potential restructuring or discharge of debt through the bankruptcy process may leave a respondent with an increased debt-to-assets ratio when compared a non-filer. As neither this research nor the survey used in this study examined such an event, there was no way to prove this theory.

The proactive score variable had a standard error equal to 0.03 which was significant at the .1 level (90% confidence level) with a beta of -.004 indicating that for each increase of a

respondent's proactive score, their debt ratio decreased on average by 0.004. The financial behavior score variable had a standard error equal to 0.007 which was significant at the .10 level (90% confidence level) with a beta of -.014 indicating that for each increase of a respondent's financial behavior score, their debt ratio decreased on average by 0.014. The income level variable had a standard error equal to 0.013 which was significant at the .01 level (99% confidence level) with a beta of .034 indicating that for each increase of a respondent's income level, their debt ratio increased on average by 0.034. The age variable had a standard error equal to 0.002 which was significant at the .01 level (99% confidence level) with a beta of -.006 indicating that for each additional child a respondent's indicated, their debt ratio decreased on average by 0.006

Bankruptcy had the largest standardized coefficient of all the variables measured, indicating that a potential effect of previously declaring bankruptcy may be a prolonged level of debt or that those would declare bankruptcy once may be more likely to hold increased levels of debt moving forward, i.e. they are chronic debt users. The financial behavior score, again also showing significance, fit the model well in the sense that the model predicted that the higher a respondent scored on the financial behavior score, the lower their debt-to-assets ratio should have been.

As the financial behavior score was the only variable across both ratios to be significant and have the same effect in terms of a respondent with a higher financial behavior score was more likely to have a lower debt-to-income or debt-to-assets ratio, this brings into question some of the "classic" debt theories when examining high net-worth individuals. Previous research has also supported the idea that theories, such as the life-cycle hypothesis, are not suited to predict the financial behavior of the wealthy (Wolff, 1980). This data proved interesting as it lends itself

well to the concept that high net worth individuals' income may not truly be a good reflection of their financial leverage as the data from the debt-to-assets ratio was more in-line with traditional financial behavior concepts and previous research.

Analysis 3: Likelihood of Filing Bankruptcy

A binary logistic regression was utilized to analyze the variables effect on whether an individual declared bankruptcy or not, coding it as a binary variable. The variable was recoded some simplicity; those respondents whom did not declare bankruptcy were now coded 1 and respondents whom did declare bankruptcy were now coded as 2. A binary logistic analysis was run including all of the variables of interest which represented 167 total cases. The chi-square was 129.71 and the model significance level was 0.00 which suggests an association between the independent variables and bankruptcy. The Hosmer and Lemeshow test indicated a significance level of 0.527 meaning we would reject the null hypothesis that the model is a poor fit; this indicates that the model's predictions "fit" the data at an acceptable level. The Nagelkerke R-squared of .723 which indicated a moderately-strong relationship of 72.3% between the independent variables and the prediction of bankruptcy. The model was able to correctly predict 86.5% (64 of 74 total respondents meeting the criteria) of those who did not declare bankruptcy while it correctly predicted 89.2%, (83 of 93 total respondents meeting criteria) of those who did declare bankruptcy. Overall, 88.0% of all predictions were correct utilizing the model.

Table 4.5 Summary of Logistic Regression Analysis for Variables Predicting Bankruptcy (N = 174)

	B	S.E.	Exp(B)
(Constant)	5.810	5.350	332.320
Proactive Score	-.020	.038	.980
BIS	-.080	.098	.923
BASDrive	-.186	.183	.831
BASFun	.374	.181	1.450 *
BASReward	-.009	.181	.990
Optimism Score	.192	.077	1.210 **
Fin Behvr Score	-.106	.097	.900
Education	-4.220	.804	.015 **
Married	-2.360	.701	.095 **
Adolescent Family Social Class	.121	.291	1.130
White	-1.460	.787	.230 **
Income	.314	.158	1.370 **
Working	.816	.697	2.260
Age	-.029	.025	.972

[1] Education refers to level of educational attained indicated by respondent coded as follows; 1= Bachelor's degree or greater, 0= less than a bachelor's degree

[2] Married: 1= *married*, 0 = *Not-Married*.

[3] Adolescent family social class refers to family financial status during adolescence indicated by respondent coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

[4] White: 1 = *White*, otherwise 0 .

[5] Income refers to household's approximate annual income level indicated by respondent coded as follows; 1= $0-$99,999, 2= $100,000-$249,000, 3= $250,000-$499,999, 4= $500,000-$999,999, 5= $1,000,000-$2,499,999, 6= $2,500,000-$4,999,999, 7= $5,000,000-$9,999,999, 8=$10,000,000-$19,999,999, 9=$20,000,000.

[6] Working: 1= *Employed, full-time or part-time*, 0= Not-employed.

Unstandardized Coefficients represent amount the dependent variable will change if we change the independent variable by one unit (keeping all other variables constant)

Standardized Coefficients represent those in which the coefficients are measured in equal units (i.e. a beta of 1.5 indicates a change of one standard deviation in the independent variable will result in a 1.25 standard deviation increase in the dependent variable)

*$p < .10$. ** $p < .05$. *** $p < .01$.

For the binary logistic regression, bankruptcy was recoded. The model determined the following likelihoods for control variables, measured at a 0.10 level of significance; this level of significance was based on the limited sample size, which has previously been shown to affect significance levels employed in research (Leamer, 1978). It should also be noted that the conventional significance level of 0.05 is based on the idea that a 1 in 20 chance should be

classified as an "unusual occurrence" and not on any specific scientific basis (Lehmann & Romano, 2005). Based on the sample collected, the results on the binary logistic regression indicated that there was a significant association between bankruptcy and income, white, education, and married. The coefficient on the income variable had a Wald statistic equal to 3.95 which was significant at the .05 level (95% confidence level) with an odds ratio of 1.37 [df = 1] meaning that for each increase in level of income indicated, a respondent's odds were 1.37 times higher to have declared bankruptcy.

The coefficient on the white variable had a Wald statistic equal to 3.43 which was significant at the .10 level (90% confidence level) with an odds ratio of 0.23 [df = 1] indicating that a respondent who identified as White, which was taken from the white control variable, had 0.23 odds of having declared bankruptcy when compared to a respondent who identified as non-white.

The coefficient on the education variable had a Wald statistic equal to 27.59 which was significant at the .01 level (99% confidence level) with an odds ratio of 0.015 [df = 1] indicating that if a respondent had at least a bachelor's degree, had 0.015 odds of having declared bankruptcy when compared to a respondent who identified as having an education level below that of a bachelor's degree.

The coefficient on the married variable had a Wald statistic equal to 11.32 which was significant at the .01 level (99% confidence level) with an odds ratio of 0.195 [df = 1] indicating that a respondent who identified as being married had 0.095 odds of having declared bankruptcy when compared to a respondent who identified as not being married.

The debt ratio was not included in the bankruptcy model due to the overall idea of the innate nature of personality characteristic. As personality characteristics are believed to not be

able to change throughout life, the fact that a respondent declared bankruptcy at any point, fulfills the idea that those personality characteristics of interest were present at that time. The debt ratio is a measure of current financial health and, or, financial behavior and could be influenced because of previous declaration of bankruptcy by an individual. For example, if someone declared Chapter 7 bankruptcy ten years ago, they would have had the opportunity to relieve themselves of many financial burdens over that period, and thereby decrease their debt ratio, which would indicate positive financial behavior. In reality, there debt ratio prior to bankruptcy was most likely much higher. This idea of causality would be misleading in the data if the debt ratio was included in the bankruptcy binary logistic regression.

The respondent's indication of income level provided some interesting results. As a respondent indicated a higher level of income, they became more likely to have declared bankruptcy; one possible explanation is that someone from a lower income household may grow to have a better appreciation for money and be more frugal and thereby more cautious with their spending. This may also be related to the fact that as a respondent's income increases, their ability to qualify for additional debt or increased financing will also increase.

When looking at the variables of interest in the study, only the optimism and BAS fun measurements showed statistically significant results. The coefficient on the optimism variable had a Wald statistic equal to 6.15 which was significant at the .05 level (95% confidence level) with an odds ratio of 1.21 [df = 1] indicating that for each increase in a respondent's optimism score, a respondent had odds which were 1.21 times higher of having declared bankruptcy. The coefficient on the BAS fun variable had a Wald statistic equal to 4.27 which was significant at the .05 level (95% confidence level) with an odds ratio of 1.45 [df = 1] indicating that for the BIS/BAS measure, only one sub-measure, BAS fun, showed statistically significant results; for

each increase in a respondent's BAS fun score, the odds of declaring bankruptcy were 1.45 times higher.

BAS fun and optimism were statistically significant. Respondents who indicated that they had declared bankruptcy and those whom indicated that they had not. There was a significant difference in BAS fun scores for bankruptcy ($M = 12.12$, $SD = 2.25$) and no-bankruptcy ($M = 10.92$, $SD = 2.25$) conditions; $t(188) = -3.46$, $p = 0.001$. There was also a significant difference in optimism scores for bankruptcy ($M = 15.91$, $SD = 4.20$) and no-bankruptcy ($M = 12.13$, $SD = 3.53$) conditions; $t(190) = -6.79$, $p = 0.000$.

Summary of Findings

The main purpose of this dissertation was to determine if, holding all else equal, there exists significant personality characteristics, as defined by the self-regulation of behavior theory, between high net worth individuals whom have declared bankruptcy and high net worth individuals who have not. This question was addressed through the following eleven research questions in an attempt to provide greater insight into a potential the connection between high net worth individuals' specific personality characteristics, financial behaviors, and likelihood of filing bankruptcy.

1. Are there mean differenes exist in personality characteristics of high net worth individuals who have filed bankruptcy versus those who have not?

2. Are higher levels of optimism associated with a positive financial ratio among high net worth individuals?

3. Are higher levels of behavioral approach motives associated with a positive financial ratio among high net worth individuals?

4. Are higher levels of proactiveness associated with a positive financial ratio among high

net worth individuals?

5. Are higher levels of optimism associated with a lower likelihood of bankruptcy?

6. Are higher levels of behavioral approach motives associated with a lower likelihood of bankruptcy?

7. Are higher levels of proactiveness associated with a lower likelihood of bankruptcy?

The results of the *t* test showed statistically significant differences in BAS fun and optimism in individuals who had declared bankruptcy. In the OLS analysis utilizing the debt ratio as a dependent variable, only proactive personality was found to be statistically significant among the personality characteristics of interest. When examining the likelihood of an individual declaring bankruptcy, the BAS fun and optimism personality characteristics were found to not be negatively related to financial behavior, but positively related to declaration of personal bankruptcy.

Chapter 5 - Discussion, Conclusions, Recommendations, and Implications

This chapter will address an overall discussion of the findings and how those findings connect to the self-regulation of behavior framework. The implications of those findings will then be touched on as well as some potential limitations the findings may present. Recommendations for potential future studies will be presented followed by an overall conclusion.

Research Question One

The first reseasrch question posed, "Do mean differenes exist in personality characteristics of high net worth individuals who have filed bankruptcy versus those who have not", was addressed by this study to determine if specific personality characteristics displayed statistically significant differences in their mean values between respondents who indicated they had declared bankruptcy and those who indicated they had not declared bankruptcy. The data data indicated support for this research question as the results of a t-test indicated that there are mean differences in the personality chracteristics of BAS fun and Optimism in those respondents who have declared bankruptcy.

Research Question Two

The second research question, "are higher levels of optimism associated with a positive financial ratio among high net worth individuals," was addressed through an OLS analysis of the DTI ratio and the debt-to-asset ratio and focused on whether increased levels of optimism were statistically significant in relation to a respondent having a lower DTI ratio or a lower debt-to-assets ratio, both of which indicate positive financial behavior.. The data did not indicate support

for this research question as the results of OLS analyses indicated that optimism was not significant in either analysis.

Research Question Three

The third research question, "are higher levels of behavioral approach motives associated with a positive financial ratio among high net worth individuals," was addressed through an OLS analysis of the DTI ratio and the debt-to-asset ratio and focused on whether increased levels of behavioral approach motives were statistically significant in relation to a respondent having a lower DTI ratio or a lower debt-to-assets ratio, both of which indicate positive financial behavior. The data did not indicate support for this research question as the results of OLS analyses indicated that behavioral approach motives were not significant in either analysis.

Research Question Four

The fourth research question, "Are higher levels of proactiveness associated with a positive financial ratio among high net worth individuals", was addressed through an OLS analysis of the DTI ratio and the debt-to-asset ratio and focused on whether increased levels of proactiveness were statistically significant in relation to a respondent having a lower DTI ratio or a lower debt-to-assets ratio, both of which indicate positive financial behavior. Although there were no statistically significant relationships between the debt-to-income ratio and the variables of interest, support did exist for this research question as the data indicated that not only did the proactive personality characteristic display a significant relationship with a respondent's debt ratio but it was also the only variable of interest to do so. As mentioned in chapter four, the proactive score variable was significant at the .1 level with a beta of -.005 indicating that for each increase of a respondent's proactive score, their debt ratio decreased on average by 0.005.

In other words, the more proactive a respondent was, the better their debt ratio was which indicated increased positive financial behavior.

Research Question Five

The fifth research question, "are higher levels of optimism associated with a lower likelihood of bankruptcy," was addressed through a binary logistics analysis utilizing bankruptcy as the dependent variable and focused on whether increased levels of optimism was statistically significant in relation to a respondent having a lower likelihood of bankruptcy. Optimism has been found to help facilitate disengagement from such unsolvable tasks and also with the reengagement of viable alternative goals (Aspinwall & Richter, 1999; Duke, Leventhal, Brownlee, & Leventhal, 2002). The data actually refuted the research question as it was found that higher levels of optimism were in-fact, related to a higher likelihood of having had declared bankruptcy. Upon further examination, the data indicated that those who declared bankruptcy may be displaying outlier levels of these traits, which would be in congruence with previous research on the self-regulation of behavior.

Research Question Six

The Sixth research question, "are higher levels of behavioral approach motives associated with a lower likelihood of bankruptcy," was addressed through a binary logistics analysis utilizing bankruptcy as the dependent variable and focused on whether increased levels of behavioral approach motives were statistically significant in relation to a respondent having a lower likelihood of bankruptcy. The data actually refuted the research question as it was found that higher levels of BAS fun were related to a higher likelihood of having had declared bankruptcy. This was similar to what was found for the optimism trait and its relation to likelihood of declaring bankruptcy.

Research Question Seven

The seventh research question, "are higher levels of proactiveness associated with a lower likelihood of bankruptcy," was addressed through a binary logistics analysis utilizing bankruptcy as the dependent variable and focused on whether increased levels of proactiveness were statistically significant in relation to a respondent having a lower likelihood of bankruptcy. The data did not indicate support for this research question as the results of binary logistic regression analysis indicated that proactiveness was not found significant in the analysis.

Additions to Current Literature

As the results of this study imply, there is a positive correlation between proactiveness and positive financial behavior, optimism and declaration of bankruptcy, and BAS fun and bankruptcy. These insights start to fill in the gap of potential explanatory factors when conceptualizing bankruptcy as being related to innate personality characteristics. Looking at potential causes of bankruptcy in this manner begets both various forms of potential treatment and possible explanations for other sub-groups whom have statistically significant increases in bankruptcy rates. Following this line of logic allows researchers to focus efforts not only on potential future research efforts but also on various treatment methods which may not have been considered in previous attempts to prevent or decrease bankruptcy filings.

Behavioral Approach Motives

Before commenting on the BAS fun results, it may be beneficial to review which questions on the survey this construct was derived from: I'm always willing to try something new if I think it will be fun, I will often do things for no other reason than that they might be fun, I often act on the spur of the moment, and I crave excitement and new sensations. Previous studies have shown that behavior approach activities themselves, or promotion-focused, are often related

to proximity bias, seeking pleasure, materialistic values, symbols of identity, and extravertedness (Verplanken & Sato, 2011).

When the sub-tenet of BAS fun is explored, one can see that impulsiveness is a trait often demonstrated which is generally not associated with good financial management skills (Verplanken & Sato, 2011). One implication that may be that those who are financially successful is the "highs" they experience in life may seem more extreme than those of a normal person. Scoring a winning touchdown or closing a multimillion dollar deal brings a feeling of excitement. What happens when those feelings of excitement are not present on a daily basis; could one's brain come to "crave" such feelings of anhedonia and, not unlike a drug user, experience a change in the working mechanisms of their dopamine system? A previous study that compared skydivers' BAS fun seeking response to that of competitive rowers found significantly higher response levels to BAS fun tenets (Franken et al., 2006). Although the study was utilizing an extreme example of skydiving, would the same idea apply to a professional football player whom is scoring touchdowns in front of 50,000 people on Sundays or a businessman who is closing multimillion dollars weekly? Taking these concepts into account, the results displaying that the odds were 1.293 times higher of having declared bankruptcy for each increase in a respondents' BAS fun score become well-framed.

Adding to this idea, other research has found that NFL players' scores on an impulsivity questionnaire are significantly related with athletic success (Hickman, 2004). Hickman related this to players' ability to make very quick, split-second decisions on the field and the effect that had on their overall rating as a player as some of the characteristics of impulsivity include aggression, hostility, and anger, which when properly constrained, may all prove very beneficial in the NFL. Research has noted the many characteristics that sensation seeking and impulsivity

share, and believe the two traits may be interconnected (Jack & Ronan, 1998). Being impulsive

and having a preference for physically risky sports are related which may be due to the fact that

such a sport rewards their natural tendencies such as aggression and hostility (Jack & Ronan,

1998). With any professional sport, once a participant has reached the professional level, they

have often been indulged by various coaches, schools, and organizations over the year purely due

to their athletic abilities which may further compound and solidify the athlete's view that

impulsivity is a positive traits that comes with various rewards (Hickman, 2004). Although

specific to NFL players, this suggests that some of the same characteristics that make an

individual success on the field or in the boardroom may also have a negative impact on their

financial behavior.

Optimism

As mentioned in the Chapter 4, for each point increase in a respondent's optimism score,

the odds were 1.23 times higher of having had declared bankruptcy. Through the process of

personal bankruptcy, an individual is discharging various debts in an attempt to complete the

bankruptcy process in a more stable financial condition. Through the elimination of debt, one

may hypothesize that the individual would gain additional optimism but previous research has

shown that in fact, individuals with levels of "irrational optimism" similar to what was found in

this study, possessed high levels of optimism prior to such negative financial events (Williams,

2008-2009). Williams (2009) goes on to indicate that "Irrational optimism…means that people

do not adequately plan for…negative events, and fail to take steps that they might otherwise have

taken to insure against their costs." and that "the largest and most common cost is the failure to

adequately self-insure against future negative events like…high debt" (Williams, 2008-2009, p.

735) (Williams, 2008-2009, p. 733). The initial worry of endogeneity problems with optimism

and bankruptcy have been previously shown to be of little consequence as this level of "irrational optimism" is truly an innate personality characteristic. This fact has been displayed through the use of credit card regulations and acts such as the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) of 2005, which attempts, through large amounts of disclosure to consumers, to make clear the potential hidden costs in credit card but has shown to be ineffective overall (Williams, 2008-2009). Williams (2009) goes on to specifically note that "irrational optimism is often resistant to change" (Williams, 2008-2009, p. 790).

Knowing this, this result begins to frame the idea that high net-worth individuals, who have often enjoyed immense amounts of success throughout their lifetime in their given profession, may have a tendency to be overly optimistic in other ventures. Previous studies have indicated a relationship between "excessive" optimism and potentially harmful behaviors that may have negative future outcomes, such as smoking, over eating, and excessive spending (Sharot, 2011). Unrealistic optimism could be a form of temporal discounting within certain individuals (Sharot). This increased level of optimism may lead individuals to make decisions based on the idea that they have not been exposed to failure in their endeavors thus far—i.e., "If I can make it to the NFL, I am sure I can successfully open a restaurant" or "If I can make it to the NBA, I think a 10% average annual rate of return on my investments is likely." Behavior similar to this kind of thought process has been shown in previous studies where athletes displayed increased levels of extraversion, agreeableness, and conscientiousness and a decreased level of neuroticism, which indicates increased optimism, all of which are indicative of optimistic traits (Lipowski & Bieleninik, 2014; Sharpe, Martin, & Roth, 2011).

Implications of Findings

The implications of the financial ratio of debt-to-assets ratio as a dependent variable showed statistically significant variables of interest as education, number of children, income, bankruptcy, proactive score, and financial behavior score. The idea that the higher a respondents level of education, the higher their debt-ratio may seem counterintuitive initially, but when taking into account the potential cost of education, it could have a significant impact on a respondent's debt. The data also indicated that the more children a respondent had, the lower their debt ratio would be; this could potentially be explained by previous research indicating a positive relationship and family size (Lindqvist, 1981). The higher level of income a respondent indicated, the more their debt-ratio increased. Debt is often used as a vehicle to purchase an asset of value and previous research would support the idea that those whom have higher income would be more likely to take on more debt in a risk/reward opportunity (MacCrimmon & Wehrung, 1990). Bankruptcy increased the debt ratio, which was logical. Being proactive or having a higher financial behavior score decreased the debt ratio, which also showed support for the framework. Although the debt-to-income ratio did not display any significant relationships with the variables of interest, previous research shown that the correlation between high net worth and high income may not be extremely strong.

The issue of timing of accumulation of debt and that's potential impact on the personal bankruptcy decision must also be addressed. The life-cycle hypothesis, or LCH, theorizes that individuals will take on more debt early in life with the presumption to pay down that debt with increase future earnings. The LCH fits high net worth individuals quite well.

The logistic regression results provided much more substantial data and potential implications moving forward. Being more optimistic and being more likely to declare

bankruptcy seem logical and somewhat predictable as someone whom is more self-confident may be willing to take more risks as they feel they can either overcome obstacles easier or that they may be better suited to recover from setbacks.

The implication that there is a positive correlation between BAS fun attribute and declaring bankruptcy was both unexpected and also intriguing as it points to a potentially unique approach to financial management issues within high net worth individuals. Previous studies point to evidence that nonchemical addictions exist and can take various forms such as gambling, overspending, and addiction to sports (Krivoschekov & Lushnikov, 2011). This "addiction," like others, carries with it the ability to easy change forms and be converted into another type of dependency or addiction. Just as an addict becomes addicted to the high caused by drugs, would a high net worth individual or professional athlete become addicted to the high obtained through success in the boardroom or on the field? If so, could they be attempting to replace that high with an impulse fulfilling activity, many of which are not financially responsible?

Looking at impulsivity as a potential addiction issue may help better frame some of the potential treatments and therapies that could be used to curb such behavior as studies have shown that the natural high one experiences shares various traits as the shown in a pharmacological, or drug, addiction (Franken et al., 2006). In looking at a comparison between impulsivity and dopamine-like addictions, there are various issues to contend with including tolerance, dependence, detoxification, withdrawal symptoms, and relapse being a few of those (O'Brien, 1997). When looking at a high net worth individual who may be exhibiting symptoms of impulsivity causing poor financial decisions, the first step would be to decrease exposure to dopamine releasing situations or decisions. Putting this into context, living in a large city may

prove detrimental to an individual because of the consistent exposure to such stimuli-rich environments.

Following a process similar to those used with drug addicts, these type of impulsive athletes may require a multi-prong approach of detoxification from environments and situations that feed their urge and need for impulsive behavior. Impulsive individuals often seek intense and novel stimulation simply because they are under-aroused (Franken et al., 2006). The thrill seeking or impulsive behaviors are actually at attempt to simply feel better or normal (Franken et al., 2006). When looking at an individual's response to this stimulation, there are multiple approaches to reducing the overall effect of said stimuli: (a) reduce the reward an individual feels, (b) increase the reward an individual feels with positive alternate stimuli, (c) decrease the learned associations an individual has with the stimuli, and (d) increase front control (Volkow et al., 2004).

Dual-prong strategies which pair counseling to address the behavioral side of the equation with a pharmacological agent to counter "neurobiological" issues, are often the recommended treatment approach for other kinds of addictions (Volkow et al., 2004). As the pharmacological agents have been well tested and studied, the issue lies in the behavioral side of the solution. A relatively new discipline within financial planning offers the potential to lend itself well to this specific situation; financial therapy. Financial therapy can be loosely defined as the integration of cognitive, emotional, behavioral, relational, and economic aspects that promote financial health (Financial Therapy Association, 2012). In effect, financial therapy is a therapeutic approach encompassing traditional therapy theories which takes into account the emotional aspect that is heavily engrained with an individual's view of, and relationship with, money. As previously noted, there has been significant attempts at financial planning and

increasing financial literacy with the professional athlete population which have shown very little progress or impact thus far which makes the idea that there could be an underlying physiological condition relating to dopamine which could be a potential catalyst for impulsive spending and poor financial behavior intriguing (NFLPA, 2013).

The fact that educational attempts along with professional advice have shown little promise thus far could be partially caused by the fact that many financial planners are not trained in behavioral therapy and that part of the underlying issue needs to be addressed in a therapeutic method with the general public as well (Grable, McGill, & Britt, 2010). The very idea of the modification in treatment approach itself, which may lend itself well to an addiction-type withdrawal, could be something that behavioral finance and financial therapy would be well-suited to embrace.

Limitations of Current Study

Due to the nature of collection, the sample size, and sample population characteristics, limitations exist in the interpretation of the results of this dissertation. Although over 15 months was spent attempting to collect primary data directly from professional athletes, very little success was seen. Various avenues of collection were attempted; known athletes whom were acquaintances, friends of athletes, those who service athletes in different aspects (professional athlete clothier, personal assistant to Tim Tebow, etc.). The survey did make it to the front office of the Washington Redskins through a contact at Qualtrics for potential dissemination but was not approved. The reasons for this difficulty could have been attributed to a number of issues. For instance, athletes may not have trusted the anonymity of my survey due to my career as a financial advisor, professional athletes may already work with retired athletes who are now financial advisors and are also performing their own research, thereby dissuading them from

responding to similar studies (Rothstein, 2017), or the fact that professional athletes have historically been difficult to obtain sample data from to begin with.

Based on the difficulty in collection experienced, the decision was made to utilize high net worth males whom have declared bankruptcy. This sample consisted specifically of males who had a net worth at one time of over $1 million of which some had declared bankruptcy. By utilizing males, potential gender issues that may arise in the data are eliminated as the proposed purposed original sample was male professional athletes as that sample was were all relevant literature had focused on. By limiting the sample to individuals who had a net worth of $1 million or greater, the sample should provide a large enough sample size of high net-worth individuals for analysis.

The fact that a proxy had to be utilized was by far the largest limitation of this study. Other limitations that were noted were age, race, and education. As mentioned earlier, the mean age for the sample collected of high net worth individuals was 55 while the average age in professional sports as of 2017 can range from 26.6 years old (NFL) to 29.2 (MLB) (ESPN, 2017). This disparity in age difference, should be noted but as the measurement is also looking at innate personality characteristics, may not be worrisome.

An item to note is the number of children. The mean for my sample was 2.48, and although this seems high, it is often used in conjunction with family size, which is different. As of 2015, mothers have an average of 2.4 children while the average size of a family is 2.54 persons, which only accounts for those living in the household, whereby divorce or single parents would skew such data for the household size (Livingston, 2015; Statista, 2018). The question in the survey referred to children, not household or family size.

The financial behavior score was not normally distributed potentially due to population requirement of $1,000,000 net worth, which would not necessarily be presentative of the general population.

Another limitation was found to be that of race; 83.17% percent of the sample data indicated their race as white, while 10.09% percent indicated their race as black or African American. This represents a very different demographic make-up than of the general United States population or that of professional athletic leagues currently (Lapchick, 2017). The racial make-up of the United States in 2016 was (a) 61% White, (b) 18% Hispanic, (c) 12% Black, (d) 6% Asian, (e) 3% Other (Henry J Kaiser Family Foundation, 2018). The racial make-up of the National Football League in 2016 was (a) 69.7% Black, (b) 27.4% White, (c) 0.80% Latino, (d) 0.20% Other, (e) 1.9% Asian (Lapchick, 2017). The racial make-up of the National Basketball Association in 2016 was (a) 74.4% Black, (b) 19.1% White, (c) 4.9% Latino, (d) 0.9% Other, (e) 0.7% Asian (Lapchick, 2017). The racial make-up of Major League Baseball in 2017 was (a) 7.7% Black, (b) 57.5% White, (c) 31.9% Latino, (d) 1.1% Other, (e) 1.9% Asian (Lapchick, 2017).

There exists a large discrepancy in the overall diversity of sample used in this study when compared to any of the three U.S. professional athletic leagues of interest. Although this must be noted as a potential limitation, actual bankruptcy data indicates that Whites have a much higher declaration of bankruptcy (Institute for Financial Literacy, 2009). In the study published by The Institute for Financial Literacy, the 2007 dataset utilized had a demographic profile which was relatively similar to the demographics in 2007 as measured by the U.S. Census Bureau (Institute for Financial Literacy, 2009; U.S. Census Bureau, 2010). The Institute for Financial Literacy 2007 dataset demographic breakdown was comprised of (a) 14.6% Black, (b) 72.1% White, (c)

6.90% Latino, (d) 2.90% Other, (e) 0.90% Asian, and (f) 0.90% Native American (Institute for Financial Literacy, 2009). The 2007 U.S. demographics, as measured by the U.S. Census Bureau, were comprised of (a) 12.4% Black, (b) 73.9% White, (c) 6.20% Some other Race, (e) 4.40% Asian, (f) 0.80% American Indian and Alaska Native, and (g) 0.10% Native Hawaiian and Other Pacific Islander (U.S. Census Bureau, 2010). These results along with the fact that in 2007, 93.1% of bankruptcy filers sampled self-identified an income of less than $60,000, may indicate that in the general population, race does not play a significant factor in bankruptcy (Institute for Financial Literacy, 2009).

Another point of contention would be the high level of educational attainment of the sample— (a) 0.4% less than high school, (b) 3.37% high school/GED or more, (c) 8.17% some college or more, (d) 4.81% associates degree or more, (e) 33.17% bachelor's degree or more, (f) 26.92% master's degree, (g) 6.25% doctoral degree, and (h) 16.83% professional degree. When compared to the United States population who are age 25 and older, the differences are stark (a) 11.6% less than high school, (b) 29.5% high school/GED or more, (c) 16.6% some college or more, (d) 9.8% associates degree or more (e) 20.50% bachelor's degree or more, and (f) 12.0% advanced degree (U.S. Census Bureau, 2016).

In the current sample, 50% of the respondents indicated a master's degree or higher which would correspond to the U.S. Census Data category of advanced degree, which was only identified by 12.0% of the general population (U.S. Census Bureau, 2016). Another striking difference lies in the general population's 41.1% whom indicated "high school or less" or "high school graduate or more" when compared to the 3.77% in the sample fitting the same response criteria (U.S. Census Bureau, 2016). Overall, 83.17% of respondents indicated education of

bachelor's degree or higher compared to 32.50% in the U.S. Census, which would indicate that the sample population is not overly representative of the U.S. population in general.

A limitation was also time since declaring bankruptcy data was not available.

In general, the use of primary data limited the sample in size and generalizability. Previous studies have examined the underlying scales of interest, BAS/BIS, LOT-R, Proactive Personality, Financial Behavior, and determined sufficient reliability (Xiao et al., 2009; Xiao et al., 2006; Perry & Morris, 2005; Scheier & Carver, 1985; Bateman & Crant, 1993; Carver & White, 1994).

Limitations of the study should not interfere with the results but could impact the potential generalization to the public when addressing females, individuals who are not high net worth, and the general public.

Recommendations for Future Studies

As the findings of this study showed that optimism and BAS fun were significantly related to having previously declared bankruptcy in high net worth individuals, a more thorough study into these specific variables within the professional athletic community is recommended. Just as there may be an optimal level of pessimism for individuals to approach with investment decisions, there may also be an optimal level of optimism for individuals, as they would be less likely to disengage after the first hint of adversity, but would not continue to engage toward a goal that is obviously unattainable. This would lead to future research focusing on specific levels of measured optimism on the LOT-R, such as ranges of scores, which have shown to be ideal in individuals with low incidence of declaring bankruptcy or those whom have high financial behavior scores.

Within 12 years of retirement, 15.7% of professional athletes declare bankruptcy (Carlson, Kim, Lusardi, & Camerer, 2015). This number is statistically significant when compared to the high net worth subsection of the population who, on average, declare bankruptcy 0.08% of the time (BCS Alliance, 2016; BAPCPA, 2014; Spectrum Group, 2015). Player Associations have developed financial education programs in an attempt to curb financially destructive behavior, although the solutions have been fleeting as evidenced by not only continued high levels of professional athletes' bankruptcy but also by large percentages of continued negative financial behavior (Torres, 2009; Christensen, 2016). As the professional athlete population has such a high likelihood of filing for bankruptcy, this may serve as an initial step in determining some of the root causes of their significant bankruptcy rate.

Previous studies have shown that overtime a change in how dopamine is utilized within the brain can occur in individuals (Volkow et al., 2004). This idea would lend itself well to a longitudinal study of NFL players as they progress through their careers from rookies to veterans to those whom retire. Is there a change in BAS fun as these athletes experience more thrilling sensations from playing on the professional level? As this tenet of personality displayed results that indicate it may be related to an increased risk of bankruptcy in a proxy for professional athletes, a sample of athletes with the same survey is also warranted to determine if the data is unique to high net worth non-athletes or if professional athletes will display a similar result.

As bankruptcy is not only an issue for those who have significant wealth, a study with a sample more representative of the general population of the United States is also recommended. If individuals with higher levels of optimism and BAS fun are shown to display a statistically significant higher incidence of previous declaration of bankruptcy, then a general treatment may be possible to develop.

Conclusions

Looking into the issue of increased propensity to declare bankruptcy by high net worth individuals, this study examined the issue from a behavioral perspective. Although limited by access to athletes as the initial population of choice and the overall sample size gathered of high net worth respondents, some interesting and potentially unique ideas were uncovered. The data displayed results implicating two behavioral and/or personality characteristics were statistically significant when predicting the likelihood of an individual declaring bankruptcy. When examining how optimism and behavioral approach system's fun component would be related to professional athletes, it became clear that previous research had already determined their association (Hickman, 2004; Sharpe et al., 2011).

As the potential relationship between athletes, their known personality characteristic trends, and the implication that those type of personality characteristics may be related with an increased risk to declare bankruptcy, the issue shifted to potential treatment. Moving toward a multi-prong approach of education, professional advice, financial therapy, and pharmacological treatment could be what is missing in current treatment approaches. A more detailed study into professional athletes specifically and their personality characteristics along their lifetime will start to better explain when treatment is most needed to begin and what approach may work best at various points in a professional athlete's career and retirement.

References

Aspinwall, L. G., & Richter, L. (1999). Optimism and self-mastery predict more rapid
diengagement from unsolvable tasks in the presense of alternatives. *Motivation and Emotion, 23*(3), 221-245.

Averkamp, H. (2018). What is the debt ratio? *Accounting Coach*. Retrieved from:
https://www.accountingcoach.com/blog/debt-ratio

BAPCPA (2014). *Bankruptcy abuse prevention and consumer protection act (BAPCPA) report 2014.* Washington, DC: BAPCPA.

Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14*(2), 103-118.

Carlson, K., Kim, J., Lusardi, A., & Camerer, C. F. (2015). *Bankruptcy rates among NFL players with short-lived income spikes.* (NBER Working Paper No. 21085).

Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation. In E. C. Chang, *Optimism & pessimism: Implications for theory, research, and practice* (pp. 31-49). Washington, DC: American Psychological Association.

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS Scales. *Journal of Personality and Social Psychology, 67*, 319-333.

Cheema, J. R. (2014). Some general guiselines for choosing missing data handling methods in educational research. *Journal of Modern Applied Statistical Methods, 13*(2), 53-75.

Christensen, S. (2016). Identifying themes among broke former NFL athletes. *Fisher Digital Publications*. Retrieved from Fisher Digital Publications:

http://fisherpub.sjfc.edu/sport_undergrad/63/?utm_source=fisherpub.sjfc.edu%2Fsport_undergrad%2F63&utm_medium=PDF&utm_campaign=PDFCoverPages

Cisar, D. I., Crocker, R. D., & Schreiber, C. J. (2014). Confronting the challenges arising in individual chapter 11 bankruptcy cases. *VonBriesen*. Retrieved from:

http://www.vonbriesen.com/legal-news/2318/confronting-the-challenges-arising-in-individual-chapter-11-bankruptcy-cases#

Demaree, H. A., DeDonno, M. A., Burns, K. J., & Everhart, D. E. (2008). You bet: How personality differences affect risk-taking preferences. *Personality and Individual Differences, 44*, 1484-1494.

DeVaney, S. A. (1994). The usefulness of financial ratios as predictors of household insolvency: Two perspectives. *Financial Counseling and Planning, 5*, 5-24.

Enders, C. (2003). Using the expectation maximization algorithm to estimate coefficient alpha for scales with item-level missing data. *Psychology Methods, 8*(3), 322-37.

Evans, D., & Bauchet, J. (2017). Bankruptcy determinants among U.S. households during the peak of the great recession. *Consumer Interests Annual, 63*, 1-7.

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling.* Akron, OH: University of Akron Press.

Financial Therapy Association. (2012). Retrieved from

http:/www.financialtherapyassociation.org/

Findlaw. (2016). Bankruptcy definition: What exactly is it? *FindLaw*. Retrieved from:

    http://bankruptcy.findlaw.com/what-is-bankruptcy/bankruptcy-definition-what-exactly-

    is-it.html

FINRA. (2012). FINRA Foundation and NFL Player engagement team up to assist players avoid

    investment fraud, make smart financial decisions. *FINRA*. Retrieved from:

    https://www.finra.org/Newsroom/NewsReleases/2012/P125431

Foster, J. D., Misra, T. A., & Reidy, D. E. (2009). Narcissists are approach-oriented toward

    theiry money and their friends. *Jounral of Research in Personality, 43*, 764-769.

Franken, I. H., Zijlstra, C., & Muris, P. (2006). Are nonpharmacological induce rewards related

    to anhedonia? *Progress in Neuro-Psychopharmacology & Biological Psychiatry 30*(2),

    297-300.

Garrett, T. A. (2007). The rise in personal bankruptcies: The Eight Federal Reserve District and

    beyond. *Federal Reserve Bank of St. Louis Review 89*(1), 15-37.

Geiger, H., & Hurzeler, H. (2003). The transformation of the swiss private banking market.

    Journal of Financial Transformation, 9, 93-103.

Grable, J., McGill, S., & Britt, S. (2010). The financial therapy association: A brief history.

    Journal of Financial Therapy, 1(1), 1-6.

Greene, S. S. (2015). The failed reform: Congressional crackdown on repeat Chapter 13

    bankruptcy filers. *The American Bankruptcy Law Journal, 89*(2), 241- 267.

Greninger, S. A., Hampton, V. L., Kitt, K. A., & Achacoso, J. A. (1996). Ratios and benchmarks

    for measuring the financial well-being of families and individuals. *Financial Services

    Review, 5*(1), 57-70.

Han, S., & Li, G. (2011). Household borrfowing after personal bankruptcy. *Journal of Money, Credit and Banking, 2*(3), 491-517.

Hickman, K. (2018). Statistics for professional athletes with college degrees. *Healthfully*. Retrieved from: https://healthfully.com/statistics-professional-athletes-college-degrees-7963650.html

Hickman, S. A. (2004). Impulsivity as a predictor of athletic success and negative consequences in NFL football players. *Scholar Works at UMass Amherst.* Retrieved from: http://scholarworks.umass.edu/dissertations_1/3306

Institute for Financial Literacy. (2009). *2008 annual consumer bankrupcty demographics report.* Portland, ME: Institute for Financial Literacy.

Jack, S. J., & Ronan, K. R. (1998). Sensation seeking among high- and low-risk sports participants. *Personality and Individual Differences, 25*, 1063-1083.

Jensen, S. (2005). A legislative history of the bankruptcy abuse prevention and consumer protection act of 2005. *The American Bankruptcy Law Journal, 79*(3), 485-569.

Joo, S. (2008). Personal Financial Wellness. In J. J. Xiao, *Handbook of Consumer Finance Research* (pp. 21-33). New York: Springer.

Krivoschekov, S. G., & Lushnikov, O. N. (2011). Psychophysiology of sports addicts. *Human Psychology, 37*(4), 509-513.

Lapchick, R. (2017). The 2017 racial & gender report card. *The Institute for Diversity and Ethics in Sport.* Retrieved from: http://www.tidesport.org/reports.html

Leamer, E. (1978). *Specification Searches: Ad Hoc Interference with Nonexperimental Data.* New York: Wiley.

Lehmann, E. L., & Romano, J. S. (2005). *Testing Statistical Hypothesis.* (3rd d.) New York:

    Springer.

Lindqvist, A. (1981). A note on determinants of household saving behaviour. *Journal of*

    Economic Psychology, *1*, 39-57.

Lipowski, M., & Bieleninik, L. (2014). Personality superfactors and healthy behaviors of

    professional athletes. *Current Issues in Personality Psychology, 2*(2), 57-67.

Livingston, G. (2015). Family size among mothers. *Pew Research Center.* Retrieved from:

    http://www.pewsocialtrends.org/2015/05/07/family-size-among-mothers/

MacCrimmon, K. R., & Wehrung, D. A. (1990). Characteristics of risk taking executives.

    Management Science, 36(4), 422-435.

Maloy, B. (2013). Chart: Average career earnings for pro athletes in each league. *Sports*

    Illustrated. Retrieved from: http://www.si.com/extra-mustard/2013/10/10/pro-sports-

    leagues-salary-comparison-chart

Merrill Lynch. (2014). *Behavioral insight: Taking action against top behavioral biases.* New

    York: Merrill Lynch.

NFLPA. (2013). Financial Education. *NFL Player Engagement.* Retrieved from:

    https://www.nflplayerengagement.com/financial-education/

O'Brien, C. P. (1997). A range of research-based pharmacotherapies for addiction. *Science,*

    278(3), 66-70.

Ohlson, J. A. (1980). Financial ratios and the probablistic prediction of bankrupcty. *Journal of*

    Accounting Research, 18(1), 109-131.

Peng, C., Harwell, M., Liou, S., & Ehman, L. (2006). Advances in missing data methods and

implications for educational research. In S. Sawilowsky, *Real data analysis* (pp. 31-78).

Charlotte, North Carolina: Information Age Publishers.

Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge,

and income in explainging consumer financial behavior. *The Journal of Consumer

Affairs, 39*(2), 299-313.

Powers, T. W. (1973). *Behavior: The control of perception.* Chicago: Aldine.

Qualtrics. (2017). Qualtrics research services SOW.

Rasmussen, H. N., Wrosch, C., Scheier, M. F., & Carver, C. S. (2006). Self-regulation and

health: The importance of optimism and goal adjustment. *The Journal of Personality,

74*(6), 1721-1747.

Ray, S. (2015). Simple methods to deal with categorical variables in predictive modeling.

Analytics Vidhya. Retrieved from: https://www.analyticsvidhya.com/blog/2015/11/easy-

methods-deal-categorical-variables-predictive-modeling/

Rocker, J. (2014). When pro athletes go broke. *WND.* Retrieved from:

http://www.wnd.com/2014/09/when-pro-athletes-go-broke/

Rothstein, M. (2017). Meet the Lions punter trying to keep his NFL colleagues from going

broke. *ESPN.* Retrieved from: http://www.espn.com/blog/detroit-

lions/post/_/id/30970/meet-the-lions-punter-trying-to-keep-his-nfl-colleagues-from-

going-broke

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and

implications of generalized outcome expectations. *Health Psychology, 4*(3), 219-247.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from

    neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life

    Orientation Test. *Journal of Personality and Social Psychology, 67*(6), 1063-1078.

Sharot, T. (2011). The optimism bias. *Current Biology, 21*(23), R941-R945.

Sharpe, J. P., Martin, N. R., & Roth, K. A. (2011). Optimism and the big five personality factors

    - Beyond neuroticism and extraversion. *Personality and Individual Differences, 51*(8),

    946-951.

Shefrin, H., & Statman, M. (1984). The disposition to sell winners too early and ride losers too

    long: Theory and evidence. *The Journal of Finance, 40*(3), 777-790.

Smiley, W. F. (2015). *Exploring listwise deletion and multilevel multiple imputation in linear

    two-level organizational models.* Columbia: University of South Carolina.

Statista. (2018, January 1). Average number of people per household in the United States from

    1960 - 2017. Statista. Retrieved from:

    https://www.statista.com/statistics/183648/average-size-of-households-in-the-us/

Stavins, J. (2000). Credit card borrowing, delinquency, and personal bankruptcy. *New England

    Economic Review*, *July/August*, 15-30.

Tabb, C. J. (1995). The history of the bankruptcy laws in the United States. *ABI Law Review,

    3*(5), 5-50.

Torres, P. S. (2009). How (and why) professional athletes go broke. *Sports Illustrated*. Retrieved

    February 2, 2015, from: http://www.si.com/vault/2009/03/23/105789480/how-and-why-

    athletes-go-broke

U.S. Census Bureau. (2010). *Race and hispanic origian of the foreign-born population in the

    United States: 2007.* Suitland, MD: U.S. Census Bureau.

U.S. Census Bureau. (2016). *Educational Attainment in the United States: 2015.* Suitland, MD:

    U.S. Census Bureau.

Verplanken, B., & Sato, A. (2011). The psychology of impulse buying: An integrative self-

    regulation approach. *Journal of Consumer Policy*, *34*(2), 197-210.

Volkow, N., Fowler, J., Wang, G.J., & Swanson, J. (2004). Dopamine in drug abuse and

    addiction: Results from imaging studies and treatment implications. *Molecular*

    Psychiatry, 9, 557-569.

Wrosch, C., Miller, G. E., Scheier, M. F., & Brun de Pontet, S. (2007). Giving up on unattainable

    goals: Benefits for Health? *Personality and Social Psychology Bulletin*, *33*(2), 251-265.

Appendix A - Alternative Research Opportunity

Due to the potential difficulty in gathering an adequate sample size of professional athletes, I have developed an alternative research possibility if needed. I will gather a sizable sample of data from high net worth individuals (those with a net worth of over $5 million) and could potentially compare personality characteristics of high net worth individuals to individuals with a net worth of between $1 and $5 million instead of sampling athletes.

Appendix B - Survey Questions

PURPOSE OF THE RESEARCH: The purpose of this survey is to gain information regarding personality characteristics specific to goal setting in an attempt to better understand financial decision making.

LENGTH OF STUDY: We anticipate the survey should take 10 minutes for you to complete.

RISKS OR DISCOMFORTS ANTICIPATED: There are no known risks associated with completing this survey. There may be other risks that we cannot predict.

BENEFITS ANTICIPATED: It is reasonable to expect that you may become more self-aware of your past and present financial situation after completing this survey but we cannot guarantee that you will personally experience benefits from participating in this study. Others may benefit in the future from the information we find in this study.

By completing this survey, you give your consent that you understand the above terms and agree to have your data be used for research purposes.

I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers.

I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled. I also understand that the purpose of this research is to gather personal data on personality characteristics, financial demographic data, and financial behavior data for analysis. Although the risks and discomforts that may be caused by this survey are limited, I also understand that certain discomforts could affect me.

I verify that by consenting below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

○ I consent

○ I do not consent

What is your gender?

○ Male

○ Female

What is your household's approximate annual income (including bonuses, commissions, and endorsements) in U.S. dollars?

○ $0 - $99,999

○ $100,000 - $249,999

○ $250,000 - $499,999

○ $500,000 - $999,999

○ $1,000,000 - $2,499,999

○ $2,500,000 - $4,999,999

○ $5,000,000 - $9,999,999

○ $10,000,000- $19,999,999

○ $20,000,000+ [_____]

Do you have any deferred compensation with your employer or previous employers? (For example, a pension)

○ Yes

○ Maybe

○ No

If you answered Yes to having deferred compensation, do you know how much it will roughly equal on an annual basis and for how many years it will continue?(For example "I have a pension that will provide $20,000 a year for the rest of my life" or "I have a deferred compensation plan that provides $100,000 a year for 3 years")

[ ]

What year were you born?

[▼]

Which of the following best describes your ethnicity?

○ Hispanic or Latino

○ Not Hispanic or Latino

Which of the following best describes your race?

○ White

○ Black or African American

○ Hispanic or Latino

○ Asian

○ American Indian or Alaska Native

○ Native Hawaiian or Other Pacific Islander

○ Other

○ Prefer not to say

What is the highest level of education you have completed?

- ○ Less than High School
- ○ High School / GED
- ○ Some College
- ○ 2-year College Degree
- ○ 4-year College Degree
- ○ Masters Degree
- ○ Doctoral Degree
- ○ Professional Degree (JD, MD)

What is your current marital status?

- ○ Single, never married
- ○ Married without children
- ○ Married with children
- ○ Divorced
- ○ Separated
- ○ Widowed
- ○ Living with partner

How many children do you have (including step-children)?

[▼]

If you indicated retired, how many years have you been retired?

[▼]

Are you currently, or have you ever been in the past, a professional athlete?

[_____ ▼]

If you indicated "yes, in another sport" for the previous question, please indicate which sport below

○   Other Professional Sport: [_____]

Which of the following best describes your current employment or work status?

○   Employed, full time

○   Employed part-time

○   Not employed, looking for work

○   Not employed, NOT looking for work

○   Retired

○   Disabled, not able to work

Which of the following best describes your family's financial status during your growing up years?

○   Lower Class

○   Lower-Middle Class

○   Middle Class

○   Middle-Upper Class

○   Upper Class

What is your household's approximate total level of assets? For example, what is the sum of your home value, investment(s) value, bank account value, etc?

- ○ Less than $100,000
- ○ $100,000 – $499,999
- ○ $500,000 – $999,999
- ○ $1,000,000 – $4,999,999
- ○ $5,000,000 – $9,999,999
- ○ $10,000,000 – $24,999,999
- ○ $25,000,000 – $99,999,999
- ○ $100,000,000 – $249,999,999
- ○ $250,000,000 or more

What is your household's approximate level of debt/liabilities? For example, the sum of how much you owe on your mortgage(s), credit card debt, car debt, real estate debt, business debt, etc.

- ○ Less than $100,000
- ○ $100,000 – $499,999
- ○ $500,000 – $999,999
- ○ $1,000,000 – $2,499,999
- ○ $2,500,000 – $4,999,999
- ○ $5,000,000 – $9,999,999
- ○ $10,000,000 – $19,999,999
- ○ $20,000,000 – $99,999,999
- ○ $100,000,000 or more

Have you ever declared bankruptcy?

[▼]

If you answered yes to the previous question, what chapter of bankruptcy did you declare?

[▼]

If you answered yes to the previous questions, what was the most recent year you declared bankruptcy?

[▼]

How do you grade yourself in the following areas?

	Poor	Fair	Okay	Good	Excellent
Controlling my spending........	○ Poor	○ Fair	○ Okay	○ Good	○ Excellent
Paying my bills on time.......	○ Poor	○ Fair	○ Okay	○ Good	○ Excellent
Planning for my financial future.......	○ Poor	○ Fair	○ Okay	○ Good	○ Excellent
Providing for myself and my family.....	○ Poor	○ Fair	○ Okay	○ Good	○ Excellent
Saving money......	○ Poor	○ Fair	○ Okay	○ Good	○ Excellent

Answer the following questions according to your own feelings, rather than how you think "most people" would answer.

	I agree a lot	I agree a little	I neither agree nor disagree	I disagree a little	I Disagree a lot
In uncertain times, I usually expect the best	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
It's easy for me to relax.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
If something can go wrong for me, it will.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
I'm always optimistic about my future.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
I enjoy my friends a lot.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
It's important for me to keep busy.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
I hardly ever expect things to go my way.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot

I don't get upset too easily.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
I rarely count on good things happening to me.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot
Overall, I expect more good things to happen to me than bad.	○ I agree a lot	○ I agree a little	○ I neither agree nor disagree	○ I disagree a little	○ I Disagree a lot

Each item of this section of the questionnaire is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says. Please respond to all the items; do not leave any blank. Choose only one response to each statement. Please be as accurate and honest as you can be. Respond to each item as if it were the only item. That is, don't worry about being "consistent" in your responses. Choose from the following four response options:

	1-very true for me	2- somewhat true for me	3-somehwat false for me	4- very false for me
A person's family is the most important thing in life.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
Even if something bad is about to happen to me, I rarely experience fear or nervousness.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me

I go out of my way to get things I want.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
When I'm doing well at something I love to keep at it.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
I'm always willing to try something new if I think it will be fun.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
How I dress is important to me.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
When I get something I want, I feel excited and energized.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
Criticism or scolding hurts me quite a bit.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
When I want something I usually go all-out to get it.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
I will often do things for no other reason than that they might be fun.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
It's hard for me to find the time to do things such as get a haircut.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me
If I see a chance to get something I want I move on it right away.	○ 1-very true for me	○ 2- somewhat true for me	○ 3-somehwat false for me	○ 4- very false for me

I feel pretty worried or upset when I think or know someone is angry at me.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

When I see an opportunity for something I like I get excited right away.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

I often act on the spur of the moment.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

If I think something unpleasant is going to happen I usually get pretty "worked up".

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

I often wonder why people act the way they do.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

When good things happen to me, it affects me strongly.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

I feel worried when I think I have done poorly at something important.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

I crave excitement and new sensations.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

When I go after something I use a "no holds barred" approach.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

I have very few fears compared to my friends.

○ 1-very true for me ○ 2- somewhat true for me ○ 3-somehwat false for me ○ 4- very false for me

It would excite me to win a contest.   ○ 1-very ○ 2- somewhat ○ 3-somehwat ○ 4- very
                                          true for me true for me   false for me   false for me

I worry about making mistakes.   ○ 1-very ○ 2- somewhat ○ 3-somehwat ○ 4- very
                                          true for me true for me   false for me   false for me

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I am constantly on the lookout for new ways to improve my life	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
I feel driven to make a difference in my community, and maybe the world	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
I tend to let others take the initiative to start new projects	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree

Wherever I have been, I have been a powerful force for constructive change

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

I enjoy facing and overcoming obstacles to my ideas

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

Nothing is more exciting than seeing my ideas turn into reality

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

If I see something I don't like, I fix it

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

No matter what the odds, if I believe in something I will make it happen

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

I love being a champion for my ideas, even against others' opposition

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

I excel at identifying opportunities

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

I am always looking for better ways to do things

○ Strongly Agree   ○ Agree   ○ Neither agree nor disagree   ○ Disagree   ○ Strongly Disagree

If I believe in an idea, no obstacle will prevent me from making it happen	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
I love to challenge the status quo	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
When I have a problem, I tackle it head-on	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
I am great at turning problems into opportunities	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
I can spot a good opportunity long before others can	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree
If I see someone in trouble, I help out anyway I can	○ Strongly Agree	○ Agree	○ Neither agree nor disagree	○ Disagree	○ Strongly Disagree

Thank you for your participation in this survey. The goal of this study was to determine the effect of various personality characteristics on aspects of both negative and positive financial ratio in professional athletes and non-athletes.

Your participation is not only greatly appreciated by the researchers involved, but the data collected could possibly assist in the development of financial tools to assist in developing positive financial behavior.

If you have any questions about this study, please contact us: Schink@ksu.edu, IRB@KSU.edu

Finally, we urge you not to discuss this study with anyone else who is currently participating or might participate at a future point in time.

Thank you!

Appendix C - IRB Application Approval

KANSAS STATE
UNIVERSITY | University Research Compliance Office

TO: Sonya Britt   Proposal Number: 8338
            FSHS
            317 Justin

FROM: Rick Scheidt, Chair,
           Committee on Research Involving Human Subjects

DATE: 06/24/2016

RE: Proposal Entitled, "PROFESSIONAL ATHLETES' SELF-REGULATION OF WEALTH "

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §46.101, paragraph b, category: 2, subsection: ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

KANSAS STATE
U N I V E R S I T Y
University Research
Compliance Office

Committee for Research Involving Human Subjects (**IRB**)
Application for Approval Form
Please send your completed application to comply@k-state.edu

INSTRUCTIONS

Be sure to save the application PDF to your computer before you begin completing the form. You may not be able to save your changes if you edit this form in a web browser.

The KSU IRB is required by law to ensure that all research involving human subjects is adequately reviewed for specific information and is approved prior to inception of any proposed activity. Consequently, it is important that you answer all questions accurately. If you need help or have questions about how to complete this application, please call the Research Compliance Office at 532-3224, or e-mail us at comply@ksu.edu.

Please provide the requested information in the outlined text boxes. The text boxes are designed to accommodate responses within the body of the application. As you type your answers, the text boxes will expand where appropriate and as needed. After completion send your application by e-mail to comply@k-state.edu.

Additional material is requested with this application. Be sure to provide electronic copies of the following documents (if applicable) and submit them to comply@k-state.edu along with your application:

Consent Form (see *Administrative Information, IX. Informed Consent A.*)
Sponsor's grant application or contract as submitted to the funding agency. (See *Administrative Information*)
Surveys, instruments, etc used for data collection (see *V. Design and Procedures C.* and *X. Project Information P.*)
Debriefing statement to be utilized (see *IX. Informed Consent E.*)

FAILURE TO PROVIDE ALL INFORMATION REQUESTED MAY LEAD TO A DELAY IN PROCESSING YOUR REQUEST.

Please proof read and check spelling BEFORE submitting the form. To use Acrobat spelling check, press F7 or select EDIT, CHECK SPELLING

PLEASE CONTINUE TO THE NEXT PAGE TO BEGIN COMPLETING THE FORM

Last Revised: 02/17/2016

Appendix D - Additional Information on the Self-Regulation of Behavior

Both positive feedback loops and negative feedbacks loops are present in humans and they often work in harmony. As the discrepancy-enlarging feedback loop increases the distance of the input variable from the anti-goal, that input variable will eventually be drawn into an approach, or discrepancy-reducing loop (Rasmussen et al., 2006). For example, if a person's anti-goal is to avoid declaring bankruptcy, that anti-goal would cause the system to induce discrepancy-enlarging outputs, or behaviors, such as saving or reducing expenses. Those outputs would often then be drawn into discrepancy-reducing feedback loops such as establishing a savings account where an individual saved $100,000 annually. If that person was saving $60,000 annually, the discrepancy-reducing loop's comparator would sense an inequality between the reference value, $100,000 savings goal, and the input, $60,000. The output it would initiate cutting expenses or attempting to secure additional endorsement opportunities, all in an attempt to bring the input value of $60,000 into equality with the reference value of $100,000. At the same time, as the discrepancy reducing loop is bringing its input and reference values closer to equality, it affects the discrepancy-enlarging loop, from the anti-goal of declaring bankruptcy. In essence, a reduction in the discrepancy reducing loop, represented by the individual trying to move their annual income toward $100,000, will also work in harmony with the discrepancy enlarging loop, which has a goal of avoiding bankruptcy. As the individual earns more income, they will become less likely to declare bankruptcy and can help both feedback loops achieve their desired effect.

As a negative feedback loop attempts to reduce the discrepancy between the reference value and the input, there is another monitoring system in place to measure the rate at which that discrepancy is being reduced (Carver & Scheier, 1998). This monitoring system is tasked with measuring the velocity toward goals. Carver's feedback loop has the ability to sense not only whether equality between the input and the reference value exists but also what the "velocity" of the movement toward the reference value is. Referring back to the thermostat example, if the temperature in the room is 65 degrees and the thermostat is set at 70 degrees, the comparator can measure the speed at which the room approached the goal. If after the initial recognition of the discrepancy and initiation of output, in the form of heat, the comparator senses that the room increased in temperature from 65 degrees to 68 degrees in 30 seconds, it has the ability to "slow" down the output. In this example, it could either limit the furnace's output to 50% or lower the temperature of the air which the furnace is expelling. The idea of goal approach awareness is key to the self-regulation of behavior. If a comparator can accurately sense this approach velocity, it can adjust its output effectively. If the comparator does not accurately gauge this velocity, it may not adjust output which in turn may cause inefficiencies. This could mean that the furnace does not shut down and overheats the room to 72 degrees. This overheating would then cause the comparator to sense that the room was too hot, and in an attempt to achieve equality between the input (which is now 72 degrees) and the reference value (still 70 degrees), it may need to the furnace to expel cooler air to bring the temperature back down.

Carver and Scheier (1998) referred to this system as the "meta-loop" and described its function as that of measuring the velocity of the reduction of the discrepancy and comparing that value to its own reference value. Within the meta-loop, there exists a separate reference value which is represented by the overall expectancy of how quickly a feedback loop's reference value

input becomes equal to its reference value. This concept of a continuous process in the system to achieve the reference value of the meta-loop is key to the understanding of how a combination of personality characteristics can work symbiotically, resulting in specific behaviors and actions (Carver & Scheier, 1998). Carver and Scheier (1998) described this as a continuous recalibration of the system in an attempt to maintain a specific range of feelings between joys and doubts. The range can be larger or smaller depending on each individual's specific goals, meta-loop reference values, and ideal-self.

Sub-Categories of BIS/BAS

Within the behavioral approach system/behavioral inhibition system (BIS/BAS), Carver and White (1994) identified four sub-groups; BAS reward responsiveness, BAS drive, BAS fun-seeking, and the BIS itself (Carver & White, 1994). These four constructs work within the theoretical framework of the self-regulation of behavior theory to assess respondent sensitivity to aversive (BIS) and positive (BAS) stimuli (Newman, MacCoon, Vaughn, & Sadeh, 2005). Previous research has utilized the constructs as a single factor (i.e., BAS reward responsiveness, drive, and fun-seeking combined for one BAS score) as well as individually (Franken et al., 2006; Newman et al., 2005). The BAS drive construct is used to measure "persistence in obtaining goals" (Kane, Loxton, Staiger, & Dawe, 2004, p. 88). The BAS fun-seeking measurement is related to "seek out and engage in potentially rewarding experiences" (Kane et al., 2004, p. 88). BAS reward responsiveness centers around measurement of the "anticipation of, and positive affect in response to, previously rewarded behavior" (Kane et al., 2004, p. 88). BIS, on the other hand, measures an individual's sensitivity and response to potentially dangerous and or threatening situations (Kane et al., 2004). Previous studies have identified specific constructs of the BAS system to be related to poor financial decision making (e.g., fun-seeking and compulsive buying) (Verplanken & Sato, 2011). The purpose of this study is to

examine the constructs individually in an attempt to determine if a relationship with an individual's personal declaration of bankruptcy also exists.

Goal-Reaching Velocity Awareness (Meta-Loop)

The importance of goals and their relation to one another as well as the velocity of reducing the distance to each goal are also crucial parts of the self-regulation theory. As the distance toward one goal is reduced, distance toward another goal may be increased and at a greater velocity. For example, if an individual had the financial goals of savings $10,000 monthly and was paying off $5,000 in credit cards monthly, the distance toward each goal may be inter-related. If the individual chose to pay down the credit cards with $4,000 and then save an additional $2,000, the velocity toward the goal of paying off the credit cards would be much higher than the velocity of saving $10,000 monthly. The meta-loop allows the identification of this velocity and allows an individual to shift resources from goals that are almost accomplished to goals that may need increased velocity to be reached.

For example, the anti-goal of being destitute is a much more general goal than that of saving $100,000 a year. The idea of a hierarchy in feedback systems is represented by organization according to a structure where some loops are superordinate and some are subordinate (Powers, 1973). Powers addressed the idea that a "control hierarchy" works in a manner than organizes feedback loops in levels of superordinate and subordinate loops where the higher superordinate loops represent more general or broad concepts and the more subordinate the loop, the more specific or concrete the concept or goal.

Powers' model (see Figure 2.3) displays four levels of organization: the system concept, principles, programs, and sequences (Powers, 1973). The system concept is represented by one's ideal self which, in itself proves difficult to define (Carver & Scheier, 1998). The ideal self is represented by the combination of many different principles and can be thought of as the

personality of an individual. Powers hypothesized that overall effect of the system concept was

to provide a reference value to its subordinate loop, the principle level. The principle level is

represented by general or vague goals just as not being destitute. The principle loop then serves

as the superordinate loop to the program's level thereby providing the reference value for the

program's level. The program's level will then initiate specific activities based on that reference

value. For example, the principle level goal of not being destitute then acts as a reference value

for the activities enacted at the programs level, which could then be expressed by an activity

such as going to work. The program level then acts as a reference value for the most subordinate

level or sequences. Sequences are expressed by actual movements or actions such as getting up

at 6:00 a.m. Sequence level goals are the most concrete and are represented by an action that

must be executed all at once or not at all (Carver & Scheier, 1998). On the program level, a

person has multiple options to achieve that reference value of going to work. An individual can

get up at 6:00 a.m. or at 6:30 a.m. An individual can drive to work or take the bus. An individual

can wear a full suit or a shirt and tie. On the sequence level, that individual either will perform

the action of waking up at 6:30 a.m. or they will not.
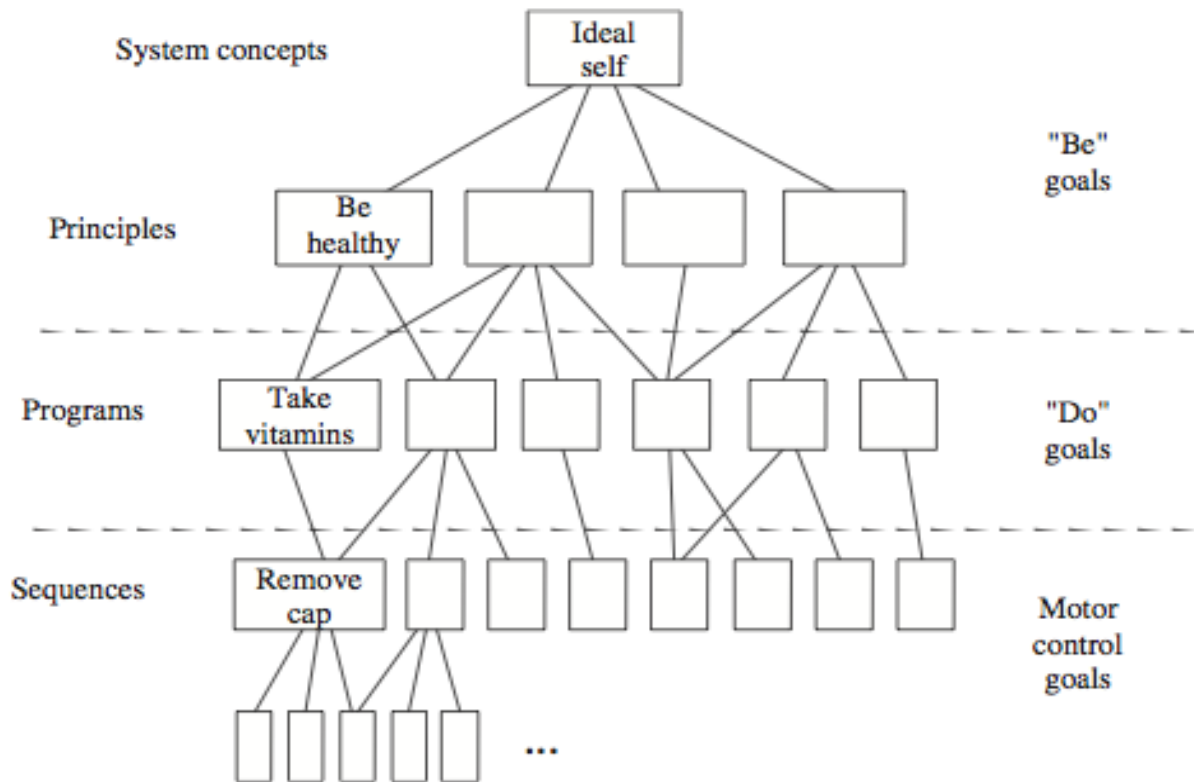
Figure D.1 Powers' Hierarchy of Goals.

The idea of Powers' (1973) hierarchy of feedback loops can be further expanded on by displaying the idea that the ideal self will have multiple principles which in-turn all have programs, which then all have sequences (Carver & Scheier, 1998). The importance of this idea lies in the fact that programs can serve as solutions to multiple principles, and the same being true for sequences benefiting multiple programs. To further explain, one can picture the idea that the program of "taking vitamins" could serve the principle of "being healthy" as well as the principle of "being responsible." This begins to explain how multiple personality characteristics act together to initiate behavior.

Looking at Powers' (1973) hierarchical model in a feedback loop diagram provides a conceptual arrangement that indicates that output of a higher level of organization then determines the reference value of the next level of organization in the model. For example, if the

ideal-self initiates an output on the principal level of "being financially stable," that principal will then influence the reference value for the program level. In this instance, that may be to "earn money." That program, or "do," goal's output then sets the reference value for the motor control goals which may be anything required by one's job, such as exercising for a professional athlete. The effect of these actions is then measured on each level of organization. For example, the effect on the environment of exercising for an athlete would be measured at the program level. Did the exercises the athlete performed meeting their goal of exercising? Yes. Did performing the exercises help that athlete earn money? Yes; by exercising, the athlete is keeping himself in shape which is how he earns a living. Did the exercises help that athlete become financially stable? Yes; by being in shape and able to perform at a high level, they earned money which helps them remain financially stable.

The concept is that higher-order powers set the reference values for lower order powers and this sequence runs all the way down to simple motor controls. Inside the hierarchy is where the psychological characteristics and their effects on the self-regulation of behavior theory become so crucial. For example, an athlete has a program goal that was more specific than simply "earn money" and was "earn $1,000,000 a month." The athletes' ideal-self remained the same, their principal of "being financially stable" remained the same, and their sequence of exercising remained the same. Looking at this sequence, suppose that the athlete is not able to earn $1,000,000 a month. In this hierarchy, the comparator at the athlete's program level would recognize a deficiency between input (earning less than $1,000,000 a month) and the reference value and would thereby alter its output, which serves as the reference value for the sequence level. By doing so, the athlete may increase the amount of exercise in their reference value in an effort to increase pay.

Keeping along this path, what if the athlete simply cannot earn $1,000,000 a month due to a number of factors. The athlete may disengage from that goal. Prior research shows a correlation between optimism and goal reengagement (Rasmussen et al., 2006). By measuring optimism within a high net-worth individual, it allows the ability to infer which respondents were more likely to have goal reengagement after reaching a goal which is unattainable. Increased goal-adjustment ability may allow athletes with high levels of optimism the ability to better reengage in substitute financial goals when an unattainable goal is reached. If an athlete can substitute the goal of earning $750,000 a month for the unattainable goal of $1,000,000 a month without sacrificing well-being, they may be more likely to stay in the league longer at a decreased pay or spend less time holding out for a contract, both of which have an overall net positive effect on their levels of wealth.

Now that the basic structure of a feedback loop and the hierarchal structure in how they are arranged have been laid out, the concept of the meta-loop becomes crucial. Going back to the idea of having a goal of saving $100,000 and currently only saving $60,000, the meta-loop's reference value or velocity could be a rate of increasing savings by $20,000 annually. If the discrepancy-reducing loop input went from saving $60,000 to $80,000 in 12 months, the reference value of the meta-loop is achieved and no output is affected. If the input went from $60,000 to $70,000 in 12 months, the meta-loop's comparator would sense a negative discrepancy and then the feeling of doubt might become present (Carver & Scheier, 1998). On the other end of the spectrum, if the discrepancy-reducing loop's input, or annual savings, went from $60,000 to $90,000 in 12 months, the meta-loop would sense a positive discrepancy resulting in feelings of joy or happiness. Although the feeling of doubt may lead to increased levels of work in an attempt to increase the velocity of reduction in the feedback loop, the feeling

of joy due to a positive discrepancy will cause the system to slow down, or coast, to bring the input velocity value of the meta-loop back down toward the reference value.

The relation of the meta-loop to financial behavior is crucial for an individual measuring the velocity of their progress toward, or away from in terms of a discrepancy-enlarging loop, their wealth goal(s). This measure of the proactive personality of one's progress allows sufficient adjustment in velocity which may decrease overall risk. For example, if you only need a single hit to win the baseball game, there is no need to swing for a homerun. This is true in solid financial planning and positive financial ratio as goal-bases financial planning allows individuals to "tune-out" market volatility, which has historically been a root cause of poor, emotionally-driven investment decisions, and focus on investment returns needed to achieve their specific financial goals (Merrill Lynch, 2014).

Appendix E - Correlation Matrix

Table E.1 Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	Debt2AssetRatio	1.000														
2.	Income	.52	1.000													
3.	FamilyClass	.30	.28	1.000												
4.	White	.31	.22	.17	1.000											
5.	Education	.22	.32	.06	.29	1.000										
6.	MarriedBinary	.36	.29	.09	.42	.19	1.000									
7.	Working	-.41	-.35	-.23	-.21	-.17	-.22	1.000								
8.	Children	-.15	-.002	.003	-.20	-.02	-.19	.03	1.000							
9.	Bankruptcy	.58	.42	.22	.39	-.09	.41	-.39	-.09	1.000						
10.	OptimismScore	.38	.27	.10	.22	.12	.32	-.27	-.14	.43	1.000					
11.	BASDrive	.15	.08	.11	-.06	-.07	-.03	-.06	.10	.11	.03	1.000				
12.	BASFun	.27	.20	.15	.08	-.04	.03	-.07	.07	.25	.04	.62	1.000			
13.	BASReward	-.03	-.11	-.01	-.13	-.19	-.11	.04	.16	-.02	-.23	.69	.53	1.000		
14.	BIS	.10	-.01	-.14	.02	-.007	.02	-.03	-.10	.09	.23	.11	.16	.27	1.000	
15.	FinBehvrScore	-.38	-.32	-.16	-.23	-.10	-.32	.24	-.12	-.37	-.43	.01	-.07	.14	-.09	1.000

Note: N = 174.

Appendix F - Coding

Bankruptcy was coded into 0= did not declare bankruptcy and 1= declared bankruptcy

The debt to income ratio was coded as follows:

Debt: 1) less than $100,000, (2) $100,000 to $499,999, (3) $500,000 to $999,999, (4) $1,000,000 to $4,999,999, (5) $5,000,000 to $9,999,999, (6) $10,000,000 to $14,999,999, (7) $20,000,000 or greater

Income was recoded into 1) $0 to $99,9999, (2) $100,000 to $299,999 and $250,000 to $499,999 were combined into one category of $100,000 to $499,999 (3) $500,000 to $999,999, (4) $1,000,000 to $4,999,999, (5) $5,000,000 to $9,999,999, (6) $10,000,000 to $14,999,999, (7) $20,000,000 or greater

Children was coded as: 1= one child, 2= two children, 3= three children, 4= four children, 5= five children, 6= six children, 7= seven children, 8= eight children, 9= nine children, 10= ten children, 11= eleven children, 12= twelve children 13=more than twelve children

White was coded into 1= White, 0= Non-white

Education was coded as 1= bachelor's degree or greater, 0= less than a bachelor's degree

Married was recoded into 1= married 0=not married

Working was coded as 1= employed 0= not-employed

Items other than 2 and 22 are reverse-scored.

BIS BAS was coded as follows

BAS Drive: 3, 9, 12, 21
BAS Fun Seeking: 5, 10, 15, 20
BAS Reward Responsiveness: 4, 7, 14, 18, 23

BIS: 2, 8, 13, 16, 19, 22, 24

Optimism/LOT-R - Items 2, 5, 6, and 8 are fillers; the remainder of the responses were combined for a total optimism score

Proactive Personality – item 3 was reverse coded; the remainder of the questions were then combined for a total proactive score

Adolescent family social class was coded as follows; 1= lower class, 2= lower-middle class, 3= middle class, 4= middle-upper class, 5= upper class.

The debt-to-assets ratio was coded as:

Debt: 1) less than $100,000, (2) $100,000 to $499,999, (3) $500,000 to $999,999, (4) $1,000,000 to $4,999,999, (5) $5,000,000 to $9,999,999, (6) $10,000,000 or more

Assets 1) less than $100,000, (2) $100,000 to $499,999, (3) $500,000 to $999,999, (4) $1,000,000 to $4,999,999, (5) $5,000,000 to $9,999,999, (6) $10,000,000 or more