RELATIONSHIP OF THE GROSS NATIONAL HAPPINESS INDEX TO THE STATE-TRAIT ANXIETY INVENTORY SCALES

A Dissertation by

Anna Caroline Chinnes

Master of Arts, Wichita State University, 2016

Bachelor of Arts, Francis Marion University, 2014

Submitted to the Department of Psychology
and the faculty of the Graduate School of
Wichita State University
in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

July 2019

RELATIONSHIP OF THE GROSS NATIONAL HAPPINESS INDEX TO THE STATE-TRAIT ANXIETY INVENTORY SCALES

The following faculty members have examined the final copy of this dissertation for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Philosophy with a major in Psychology.

_____
Charles Burdsal, Committee Chair

_____
Brendan Clark, Committee Member

_____
Samantha Gregus, Committee Member

_____
Darwin Dorr, Committee Member

_____
Nancy McKellar, Committee Member

Accepted for the College of Liberal Arts and Sciences

_____
Andrew Hippisley, Dean

Accepted for the Graduate School

_____
Kerry Wilks, Interim Dean

DEDICATION

I would not be where I am today without the unconditional love and support of my parents, Mary Mac and Jimmy Chinnes. You each are an inspiration with a beautiful mind and heart. You both instilled in me the values of compassion, hard work, perseverance, inquisitiveness, and enthusiasm that all allowed me to pursue my graduate degree with the goal of being able to positively impact people's lives. The unconditional love and support you have shown me, along with the values you have instilled within me from a young age, have given me the strength and resolve to see this exciting and sometimes exhausting adventure through.

ACKNOWLEDGEMENTS

I would like to thank Dr. Darwin (Deac) Dorr, for his continued interest and enthusiasm regarding this project. Every meeting with him led to a renewed sense of curiosity, excitement, and passion for my work that kept me moving forward. His unwavering support, patience, and mentorship, have not only helped this project come to full fruition, but also played an impactful role in my success in graduate school. I am extremely grateful for his role in my journey and for him as an individual in the world. In addition, I would like to thank his wife, Stephanie Dorr, who has also showed continued enthusiasm, interest, and support in regards to this research.

I am also thankful for Dr. Charles Burdsal, for sharing his statistical wisdom with me. His knowledge of all things relating to psychological statistics and analysis amazes and inspires me. In addition, I would like to thank my dissertation committee members for offering your time, knowledge, and expertise in support of this research.

Thank you to my brother, Andrew, who models hard work and perseverance, all with a sense of witty humor along the way. I would also like to express my gratitude to Teresa and Mike Brown for accepting me into their family, for extending love and support, and for always demonstrating a genuine interest in both my academic and professional pursuits.

I would like to thank Christopher Brown. He has been a much needed and constant source of comfort, adventures, laughter, hugs, and love over the course of this graduate school journey and beforehand. I am incredibly grateful for everything he has done for me out of support, love, and good-heartedness, and I am excited to begin this next chapter of my life with him. Last but not least, I am thankful for my pup, Sam, who has been with me through every step of this journey and offered many needed breaks of playtime, fetch, and love.

ABSTRACT

This study sought to contribute to the research literature on happiness through examining the underlying dimensions of happiness, as assessed by the Gross National Happiness Index (GNHI; Musikanski et al., 2017). In addition, this study sought to examine the relationship of those dimensions of happiness to both state and trait anxiety, as assessed by the State-Trait Anxiety Index for Adults (STAI-AD; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1977); this was to assess for any patterns of covariation and to generally better understand any existing relationships. Ultimately, this project had the goal of contributing to the psychometric base of the GNHI through assessing the dimensions it measures and utilizing the STAI-AD as an established criterion measure to search for any base of discriminant evidence of validity.

This study was exploratory in nature; however, this researcher anticipated that the two instruments would either have low positive correlations or high inverse relationships. Relations to existing literature are examined herein. In order to address this study's purpose, data were gathered from a sample of students and staff at a Midwestern university. The overall results of the various analyses indicated a six-factor solution as the most psychologically meaningful. In addition, high inverse relationships were found between the happiness dimensions and both state and trait anxiety, which supported a base of discriminant evidence of validity of the GNHI. Practical considerations and relations to clinical and community psychology are discussed, as well as limitations and directions for future research.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

CHAPTER 1: INTRODUCTION

This study first examines the nature of the dimensions that underlie the construct of happiness, as assessed by the Gross National Happiness Index (GNHI; Musikanski et al., 2017). This study also aims to examine the relationship of the GNHI dimensions to the scales of the State-Trait Anxiety Inventory for Adults (STAI-AD; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1977). This project represents an effort to contribute to the research literature on the construct of happiness by assessing the dimensionality of the GNHI and by examining the patterns of covariation between the two instruments chosen for study. The purpose of this project is to provide some understanding of how the dimensions of happiness relate to state and trait anxiety. The ultimate goal is to contribute to the psychometric base of the GNHI through assessing the dimensions it measures and to search for evidence of its discriminant validity using the STAI-AD as a criterion measure.

Herein, the etymology and primary prominent definitions of the term happiness will be summarized. Then there will be a review of the ancient historical and philosophic treatments of the construct. Third, more recent social and psychological ideas about happiness will be reviewed. Finally, the extant research literature on the two assessment instruments used will be reviewed.

Formal Definition of Happiness

Happiness, is a noun derived from the adjective, happy, which has its root in Middle English *hap, happe,* or Old Norse *happ. Happ* is defined as “good luck” or akin to Old English “suitable”. According to Webster’s Third New International Dictionary of the English Language (1961), archaic denotations of happiness refer to “good fortune” or “good luck”. Webster’s (1961) defines happiness as “a state of well being characterized by relative permanence, by

dominantly agreeable emotion ranging in value from more contentment to deep and intense joy in living, and by a natural desire for its continuation" (p. 1031). It is important to emphasize that emotion, mood, or affect seems to be central to this definition.

Historical and Philosophical Treatments of the Construct of Happiness

An early Greek philosopher who contributed to an understanding of happiness was Aristippus. Aristippus (born c. 435 BCE) was born in Cyrene and adhered to the Cyrenaic or hedonistic school of philosophy. The most distinctive tenet of this school of thought was Hedonism or the doctrine that pleasure is the "chief good." In this view, the objective in life is to generally avoid any experiences that are painful in order to experience as much pleasure as possible – spending as much time as possible engaging in things that one enjoys, and as little time as possible on things one does not enjoy. This idea focuses more on momentary pleasures and living life according to those pleasures (Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011).

Aristotle did not agree with Aristippus's idea, and believed that because one might enjoy something does not necessarily mean it is a desirable activity to pursue, and to do so may actually have negative consequences (Fave et al., 2011). *The Nicomachean Ethics* (Aristotle, Thomson, Tredennick, & Barnes, 2004) includes the teachings of Aristotle, who died in 322 BCE. The book was published from collections of his lecture notes in 349 BCE, and was later translated in 1953, republished in 1955, and further revised and republished in 1976 and then 2004. In Book I of *The Nicomachean Ethics* (Aristotle et al., 2004), Aristotle discussed a term called *eudaimonia.* Etymologically, it consists of the words *eu* ("good") and *daimōn* ("spirit"). Capuccino (2013), an interpreter of Aristotle at the University of Bologna, stated that *eudaimon* translates to "happy," while *eudaimonia* translates to "happiness."

Eudaimonia, for Aristotle, is not a state of mind, but rather, means acting in accordance with virtue over one's lifetime, in the presence of a sufficient amount of external goods. He asserted that being good does not automatically make us happy, but that happy individuals are good more often than not. Capuccino (2013) wrote, "The pursuit of happiness, for Aristotle, is the ultimate end of human action, the chief good, the best thing…" (p. 5). Aristotle stated that there are three kinds of "goods" that are a part of *eudaimonia:* internal goods of the body (such as health, strength, and beauty), the goods of the soul (seen as the greatest goods – living and acting in accordance to what one excels at the most, which is not the same for everyone), and external goods (such as friendship and wealth). Aristotle thought that in order for a person to be able to act and engage in activities according to what the individual excels at according to their own rational soul, human excellence according to the part of happiness that is the good of the soul is then partly intellectual and partly moral, thus linking happiness to morality.

According to Capuccino (2013, p. 9), Aristotle asserted that *eudaimonia* is the "perfect good" because of the fact that people choose it for its own sake, and not for the sake of aiming at gaining something else, and Capuccino (2013, p. 9) goes on to point out that in Chapter 11 of *The Nicomachean Ethics,* Aristotle defines *eudaimonia* as, "an activity of the rational soul carried out in an excellent way, in a complete life and with the addition of a sufficient amount of external goods." Fave et al. (2011) suggested that Aristotle defined *eudaimonia* as a realizing of one's potential through a pursuit of personal fulfillment (for example, volunteering for one's community or pursuing knowledge for the betterment of community or self) – a life of meaning and virtue.

Aristotle suggested that it is the aim of all human beings to both experience and consider what *eudaimonia* really is, as well as how it can be achieved (Aristotle et al., 2004). In *The*

Nicomachean Ethics, the following question is asked: “What, [in other words,] is the highest of all the goods achievable in action? As far as its name goes, most people virtually agree, for both the many and the cultivated call it happiness…. But they disagree about what happiness is…” (Aristotle et al., 2004, p. 6-7). It is likely that we have all experienced something at some point within our lives that we would call happiness, if asked. For example, we say that we have had happy periods within our lives, or happy years, or simply happy moments, showing how commonly we use the adjective ‘happy’. We think we know what happiness is, but then when someone asks us, it is in that moment that we are aware that this is not an easy thing to answer. Each of us would also likely define happiness in different ways, but we would all likely agree that it is of great importance. So then the problem becomes, if we do not know what it is, but know it is of great importance and maybe the most important thing, then how do we pursue it? (Capuccino, 2013). We will now examine the importance of happiness in society and humankind as a whole.

Happiness in Society

"Life, Liberty and the pursuit of Happiness" in the United States Declaration of Independence is a phrase that is well known. The Declaration says that these three "unalienable rights" that have been given to all human beings by their Creator, are meant to be protected by the government (Franklin, B., Jefferson, T., & The Constitutional Convention and the Second Constitutional Congress, 2011). This further substantiates the importance of this “pursuit of happiness,” as well as our understanding of the need to determine what happiness even means in the first place.

Providing further support for the importance and desirability of happiness, continuing into more recent times, Diener and Oishi (2004) found that happiness is high in college students’

value hierarchy all over the world. This finding was based on a survey Diener and Oishi (2004) developed that asked college students from 47 nations to rate the importance of happiness and other values on a scale from 1 to 9, where 1 means not at all important, and 9 means extremely important. In looking at the overall averages of their findings, happiness was rated as the most important value overall (8.0), followed by love and affection (7.9), health (7.9), meaning (7.3), wealth (6.8), getting into heaven (6.7), and attractiveness (6.3). Wealth and physical attractiveness were rated in virtually all nations as relatively less important than happiness (Diener & Oishi, 2004). This "quest" in Western societies brings about numerous sales of books, webinars, and workshops about how to be happy. One such book by the Dali Lama and Cutler (1998) is called 'The art of happiness'. While this provides further support for the importance of the construct of happiness in society, there is a pressing need for more empirical research that examines its exact nature and quality.

Citizens in Western societies call on governments to provide improvements of social conditions to foster societal happiness. For example, according to a British Broadcasting Corporation poll (BBC; 2006, question 14), 85% of the British agree that 'a government's prime aim should be achieving the greatest happiness of the people, not the greatest wealth.' Happiness has become a rising topic of interest to policy makers as well and is a topic appearing on political agendas, along with the importance of sustainable economic development (Veenhoven, 2015).

There is increasing awareness of the study of individual happiness and the potential and obvious benefits it brings to communities. In many areas of psychological research, identifying variables that are correlated with happiness or well-being has become a topic of great interest (Chang & Nayga, 2010; Dumitrescu et al., 2010; Flynn & MacLeaod, 2015; Hoggard, 2005; Lyubomirsky et al., 2005; Martin, 2005; Norrish & Vella-Brodrick, 2008; Piqueras et al., 2011;

Veenhoven, 2015). It is even suggested by some researchers (Cummins, Lau, Mellor, & Stokes, 2009), that whole societies function better when more people are substantially happier.

It is clear that happiness affects whole communities, thus creating a tie between happiness and the competencies and values of community psychology. More specifically, this relates to the community psychology idea of prevention and health promotion within communities, defined as "the ability to articulate and implement a prevention perspective, and to implement prevention and health promotion community programs" (Dalton & Wolfe, 2012). In fact, an international conference on Happiness and Wellbeing took place at the United Nations (UN) headquarters in New York in April of 2012, from which the first *World Happiness Report* was published (Thinley, 2012). Since then, the importance of measuring happiness as a means to determine social progress has risen and has become the goal of public policy. According to the U.S. Mission to the Organization for Economic Cooperation & Development, "The Organization for Economic Cooperation & Development (OECD) is a unique forum where the governments of 34 democracies with market economies work with each other, as well as with more than 70 non-member economies to promote economic growth, prosperity, and sustainable development" (2018). The OECD committed itself in June 2016 at the Meeting of the OECD Council at Ministerial Level "to redefine the growth narrative to put people's well-being at the center of governments' efforts" (Strategic Orientations of the Secretary-General, 2016, p. 5). As part of the World Government Summit in February 2017, a full-day World Happiness Meeting was held by the United Arab Emirates.

On the basis of the deliberations in the April 2012 UN conference, on June 2014, the General Assembly voted to designate March 20th each year as an 'International Day of Happiness.' This is now the same day that the World Happiness Report, which is an annual

publication of UN Sustainable Development Solutions Network, is launched each year (Helliwell, Layard, & Sachs, 2017). It provides rankings based on analysis of data on national happiness, primarily using data from the Gallup World Poll, where people were surveyed in over 140 countries. The data are based on the Cantril Ladder (Cantril, 1965), a measure of one's satisfaction with life on a scale of 1 to 10, as well as questions on six factors to understand changes in people's life satisfaction: social support, income, healthy life expectancy, perceived freedom to make life decisions, generosity, and trust in government and business. Positive and negative affect were also examined and it was found that positive affect contributes to satisfaction with life more than negative affect, and the six factors do not fully explain changes in affect, even though they provide insight into changes in life satisfaction (Helliwell et al., 2017). Helliwell et al. (2017) asserted that they were interested in life evaluation data, such as the Cantril Ladder, to gain insight into what supports better lives for people overall.

The Cantril Ladder is more specifically called The Cantril Self-Anchoring Striving Scale (Cantril, 1965). The procedure asks people to imagine a ladder with the bottom step equaling zero and the top step equaling ten, where zero means the worst possible life for you, and ten means the best possible life for you. It then asks people to rate which step of the ladder they feel they stand at this time. It also included a question asking which step people feel they will stand about five years from now (Cantril, 1965).

Utilizing Cantril's approach indicates that the measurement approach used was deliberately phenomenological/subjective. A pro of this approach is that people can respond based on their own subjective understanding of what happiness means, but a con of this approach is that while it provides some insight into overall happiness levels within various countries, it does not provide insight into the details of what happiness means for each individual who

responded. This indicates a need for further research to be conducted to better understand what happiness means. This researcher's dissertation has the goal of examining what dimensions underlie happiness and examining how happiness covaries with state and trait anxiety. This step may provide preliminary evidence of the discriminant validity of the GNHI, which will also provide additional insight into how happiness relates to specific mood states.

In the 2017 World Happiness Report, it was found that social and institutional factors account for more than half of the average difference between each country's predicted satisfaction with life score; these factors include areas such as: donating, freedom to make life choices, trust in government and business, and having someone to count on in difficult times. It was found that on a scale of 0-10, satisfaction with life scores would increase by two points if social support areas of people's lives were increased in the lowest ranking countries, and that, in the poorest nations, social factors are 16 times more impactful than increasing income (Helliwell et al., 2017).

It is common that when one states the need for greater happiness, it will soon be followed by recommendations about ways to increase happiness. When viewed at the individual level, calls for greater happiness lead to advice typically involving different ways of living, such as meditating, more physical activity, focusing on desired activities, or consuming less (Layard, 2005). At the political level, calls for an increase in happiness for a greater number of people is seen in social reform, such as more family time, longer maternity leave, educational reforms, and less competition around economics (Layard, 2005). All of this supports the community psychology perspective of prevention and health promotion (Dalton & Wolfe, 2012), as taking a happiness perspective both in individual lives and in the lives of communities, societies, and even whole nations, whether by individual means or through public policy, promotes one's

overall health and prevents declines or downfalls in areas such as physical health, social support, and mental health (Layard, 2005; Lyubomirsky et al., 2005). In fact, Lyubomirsky, King, and Diener (2003) stated that happy people are less likely to get divorced, more likely to have rewarding marriages, persist at community volunteer activities, receive higher ratings from supervisors on the job, make more money, and have better physical health.

One could look at the pursuit of greater health as similar to the pursuit of happiness. Humans can live longer now than they ever could before in human history. This is because of everything we have learned from empirical research on what the conditions are for good health and the very human aspects of motivation and compliance with healthier living. We have used that information to bring about longer and healthier human lives. The pursuit of happiness would be better understood with research looking at happiness in a similar way. We would probably also live happier longer lives if we understand and apply scientific knowledge on happiness (Veenhoven, 2015).

Webb (1915) published the first questionnaire study on happiness, and since that study, there has been increasing interest over the past century on the topic, which has led to what appears to be a "movement of happiness" within the literature and the world. Since that first 1915 study, nearly 4,000 studies have been done on the topic of happiness. The World Database of Happiness (Veenhoven, 2013a) holds findings brought about through these numerous investigations and includes some 8,000 articles and books. Because of the increasing interest in the topic, and the importance of improving people's happiness, it is imperative that researchers construct psychometrically sound instruments to measure the construct accurately for the betterment of individuals, communities, cities, and the world. Investigating the psychometric properties of a nationally utilized measure of happiness, the Gross National Happiness Index

(GNHI; Musikanski et al., 2017) will be the primary target area under investigation within the present dissertation.

As an example of the "movement of happiness," Buettner wrote an article for the *National Geographic* by the title of, "The Search for Happiness: What we can learn from Costa Rica, Denmark, and Singapore – the most joyful places on the planet" (2017). In Buettner's (2017) *National Geographic* story, he cited a Gallup poll done in 2015-2016 based on surveys of 147,000 adults in over 140 countries. He wrote that Gallup's survey was divided into five categories that contribute to happiness: Social, Purpose, Physical, Community, and Financial. The three places that had the highest happiness scores were: Costa Rica, Denmark, and Singapore. In Costa Rica, it was found that 57% of the population reported as thriving in the social category, 46% in the purpose category, 45% in the physical category, 44% in the community category, and 25% in the financial category. Buettner (2017) wrote that Costa Rica scored especially high in "enjoying life day to day the pleasure strand of happiness" (p. 43). He statistically associated this in Costa Rica's case to their universal health care, equality, peace, faith, and especially generosity.

In the Denmark sample, it was found that 58% of Danes were thriving when it comes to financial well-being, 50% in community engagement, 43% for purpose, and then 33% in physical, and 27% social. Of all European countries, Denmark scored the highest in daily positive experiences. Buettner (2017) wrote, "Danish society, it seems, encourages the kind of balance between engaging work and rewarding play that results in a sense of time described as flow" (p. 49).

In the Gallup poll, Singapore was the third highest-ranking place when it comes to happiness. Specifically, it was found that 56% of the population reported to be thriving in the

area of financial well-being. After that, 27% reported to be thriving in the area of community engagement, 24% socially, 21% in physical well-being, and then 17% in purpose. Buettner (2017) wrote that the "people of Singapore today exemplify the third strand of happiness – what experts call life satisfaction. You score high when you're living your values and are proud of what you've accomplished. You tend to be financially secure, have a high degree of status, and feel a sense of belonging. To achieve this type of happiness can take years, and it often comes at the expense of enjoying moment-to-moment daily pleasures" (p. 53).

Buettner's (2017) article in the *National Geographic* highlights the relevance and expansion of the contemporary happiness literature. This gives us an understanding of the importance of the topic around the world. It is worth noting that much of the material in Buettner's (2017) *National Geographic* article was taken from his book, "The Blue Zones of Happiness: Lessons from the World's Happiest People" (2017), published by *National Geographic.*

We can now assert that the pursuit of happiness is an ideal recognized by ancient philosophers such as Aristotle, as well as a contemporary ideal, but there is not much literature on how to empirically measure happiness. We are much better at measuring unhappiness/psychopathology. Indeed, the cardinal focus of this dissertation is to make a contribution to the empirical basis of the happiness research literature and, thus, the happiness movement. In an effort to further examine what we really mean when we discuss the term "happiness," we will first turn to how previous literature has defined the word. Later, as a part of this researcher's dissertation, it is the hope that there will be more clarification with what is meant by the term as well.

The Psychology of Happiness

Maslow's Hierarchy of Needs is consistent with Aristotle's *eudaimonic* approach, which suggested that in order to achieve happiness, more than just momentary pleasures is needed; people must feel safe and have opportunities for self-improvement. More recent years see the hedonic and eudaimonic approaches to happiness as a spectrum, and that we should find a balance between the two – balancing virtue, self-improvement, and meaning, also with momentary pleasure (Fave et al., 2011). This stems from the positive psychology idea, which takes an integrated approach, proposing that happiness includes the areas of meaning, engagement with others, and pleasure (Peterson & Seligman, 2004; Seligman, 2002), and that the greatest happiness occurs with a life including all three, and that meaning and engagement with others are the most important of the three, rather than pleasure (Peterson, Park, & Seligman, 2005; Vella-Brodrick, Park, & Peterson, 2009).

Clinical psychology, as defined by the American Psychological Association (2018), "is the psychological specialty that provides continuing and comprehensive mental and behavioral health care for individuals and families; consultation to agencies and communities; training, education, and supervision; and research-based practice" (para. 1). The current researcher believes that clinical psychologists providing therapy services have the capacity to attempt to improve quality of life of individuals, families, and groups through taking a positive psychology approach of focusing on people's strengths and weaknesses, rather than only their weaknesses, and making continuous efforts to build upon their strengths to improve quality of life, rather than simply to eliminate the presence of symptoms of a mental illness. This perspective takes a holistic approach of the clients seen within therapy services, with the idea that seeing the whole

person will increase the likelihood of improving overall happiness and mental health, rather than simply eliminating some deficit.

In the psychological research area much of what some refer to as happiness has been studied as positive emotions and mood. The APA Commission on Accreditation (2018) prefers the term affect. Affect means emotions and/or mood. For example, the APA Commission on Accreditation strongly emphasized the importance of the study of emotion/mood/affect in professional psychology programs.

Diener and Oishi (2004) discuss affect as it relates to subjective well-being, which they also call "happiness":

> Subjective well-being (SWB) is defined as people's assessments of the quality of their lives. People evaluate their lives in several ways. First, people make judgments about their lives – whether their lives are fulfilling, satisfying, and meaningful. People also evaluate specific aspects of their lives such as their marriages, health, work, and leisure time. In addition, people react to events with affect (moods and emotions): positive or pleasant affect when things are going well, and negative or unpleasant affect when things are going badly. Thus, the affect system provides an ongoing or 'on-line' evaluation of life. Thus, the more a person experiences pleasant emotions, and the less he or she experiences unpleasant emotions, the more the individual's affect system is evaluating life in positive terms. Thus, SWB is an umbrella term that refers to these different forms of evaluation of one's life – and colloquially called 'happiness'. (p. 1)

Researchers Diener and Oishi (2004) went on to question whether emotions are similar or different across cultures. They pointed to research by Berridge (1999), which explained that certain emotions – joy, fear, sadness, anger, and affection – exist across cultures and even animal

species. Diener and Oishi (2004) also wanted to know whether emotions are related to one another in the same ways or show the same or similar structures across cultures. They provided the example that it would be confusing if those who experience the most joy also experience the most anger. They also wanted to know whether the same emotions are felt across cultures as unpleasant or pleasant, and they provided the example that the concept of happiness would then be confusing if some cultures thought that joy was actually undesirable and unpleasant. Following this lead, Diener and Oishi (2004) described work by Scollon, Diener, Oishi, and Biswas-Diener (2004), which studied numerous emotions of college students across 47 nations:

> We found a structure of emotions that is similar across cultures, with Sadness, Anger, and Unpleasantness forming a negative cluster of feelings, and Cheerfulness, Happiness, and Pleasant[ness] forming a positive cluster. In addition, there are certain emotions such as affection that cluster close to the core positive cluster, and certain emotions such as guilt and jealousy that tend to fall close to the core negative cluster. These findings suggest that many of the same emotions are [seen as] pleasant or unpleasant, regardless of culture, although there might be exceptional occasions when an emotion might have a different value (e.g., the fear when riding a roller coaster). (p. 9)

The theoretical and empirical work of Watson and Tellegen (1985) and their colleagues is especially relevant to the empirical study of happiness because it is one of the few psychological paradigms that recognizes a polarity of emotions ranging from pleasantness (happy) to unpleasantness (unhappy), the subject of this dissertation. This paradigm may provide a theoretical base for this dissertation. In their seminal 1985 article "Toward a consensual structure of mood" Watson and Tellegen wrote:

> Reanalysis of a number of studies of self-reported mood indicate that Positive and Negative Affect consistently emerge as the first two Varimax rotated dimensions in orthogonal factor analyses or as the first two second-order factors derived from oblique solutions. The two factors emerged with varying sets of descriptors and were even replicated in several data sets characterized by possible methodological problems noted by earlier writers (acquiescence response bias, inappropriate response formats and so on). (p. 219)

In this major article, Watson and Tellegen presented a figure depicting their two-factor structure of affect discussed below. This figure is reproduced and can be found as Figure 1 in Appendix A of this dissertation. They reported that two factors labeled Positive Affect (PA) and Negative Affect (NA) could account for a substantial amount of variance in affective states that were self-reported. PA was described as a bipolar dimension marked by adjectives on its high end of "active, elated, enthusiastic, excited, peppy, strong," and on its low end of "drowsy, dull, sleepy, sluggish" (Watson & Tellegen, 1985, p. 221). NA was described as a bipolar dimension including the descriptors of "distressed, fearful, hostile, jittery, nervous, scornful" at its high end, and "at rest, calm, placid, relaxed" at its low end (Watson & Tellegen, 1985, p. 221).

Watson and Tellegen (1985) also identified a second two-factor structure achieved by a 45-degree rotation of these factors, which yielded bipolar factors labeled Pleasantness/Unpleasantness (PU). "Pleasantness" has the descriptors of "content, *happy*[1], kindly, pleased, satisfied, warmhearted," while "Unpleasantness" has the descriptors "blue,

xv

[1] Italics added for emphasis.

grouchy, lonely, sad, sorry, *unhappy*[2]*"* (Watson & Tellegen, 1985, p. 221). The PU dimension was also referred to as *Happiness/Unhappiness* (Tellegen, Watson, & Clark, 1999a, 1999b).

Indeed, commenting on the 1993 Green, Goldman, and Salovey article, Tellegen et al. (1999b) in "On the dimensional and hierarchical structure of affect" wrote the following:

> Removal of random and non-random error contributions through structural equation modeling resulted in latent correlations between happiness and sadness of -.84, -.91, and -.87. These very high negative correlations clearly indicate a structure that is largely bipolar in the previously indicated sense. (p. 298)

Please note that one of the adjectives used to describe the affective state of a person who is high on Negative Affect is "nervous," which could be thought of as synonymous to anxious. Adjectives used to describe a person who tends to fall at the Low Negative Affect end of this bipolar dimension are "calm" or "relaxed" (i.e., not very anxious). This was supported by Hall (1977), who found that NA and PA were related differentially to depression and anxiety. Specifically, he found that anxiety was highly related to negative affect, but not to positive affect, while depression was related more to low PA than to NA, which suggested that these mood factors may prove useful clinically in distinguishing depression from anxiety (Watson & Tellegen, 1985).

In 1999, Tellegen, Watson, and Clark (1999a, 1999b) reaffirmed their hierarchical model of affect. These two articles, in part, were responses to criticism of their model by Green, Goldman and Salovey (1993) and a defense and clarification of their model of affect. Of greatest relevance to this dissertation is that Tellegen, Watson and Clark (1999b) affirm that "Happiness and sadness form a largely unidimensional bipolar structure…" (p. 297).

xvi

[2] Italics added for emphasis.

Terms Commonly Associated with Happiness

As we can see within the World Happiness Report (Helliwell et al., 2017), the concepts of life satisfaction and a sense of well-being have been linked to happiness. These two concepts have also been defined in many ways. Diener, Emmons, Larsen, and Griffen (1985a) defined life satisfaction as the overall cognitive evaluation of one's whole life. According to Ryu, Chang, Song, and Oh (2013), life satisfaction can be an indicator of overall life quality. According to research by Diaz, Stavraki, Blanco, and Gandarillos (2015), well-being consists of satisfaction with life, happiness, pleasure or displeasure, and positive or negative affect. According to Lucas, Diener, and Suh (1996) as well as Diener, Suh, Lucas, and Smith (1999), subjective well-being consists of three components: negative affect, positive affect, and life satisfaction. In the past, much of the research around this topic was focused on positive and negative affect (Pavot & Diener, 1993), but more recently, the research in this area has shifted to focus on the cognitive component of life satisfaction through the Satisfaction with Life Scale (SWLS; Diener et al., 1985a; Pavot & Diener, 1993, 2008). Diener and Oishi (2004) stated that subjective well-being "is an umbrella term that refers to different forms of evaluation of one's life," (p. 1) including making judgments about one's life – whether it is meaningful, satisfying, or fulfilling; evaluating specific aspects of one's life, such as health, relationships, leisure time, and work; and reacting to events in life with affect (moods or emotions), including pleasant affect when things are going well and unpleasant affect when things are going poorly. They stated that subjective well-being is more colloquially called "happiness" (p. 1). As we can see, definitions of happiness, well-being, and life satisfaction tend to be intertwined, and like happiness, the research has shown that an individual feeling a sense of life satisfaction or well-being tends to bring about positive effects in numerous life domains.

Variables Associated with Happiness

It is important to examine what previous literature has found when it comes to what is associated with a person's happiness. The studies of happiness tend to be distributional findings focused on the happiness of people at a particular place and time, or correlational findings about various things that covary with more or less happiness. As an example of some of the research on happiness, it is well known within the literature on the topic of happiness that increased happiness brings about multiple benefits in a person's life, including increased physical and mental health (Lyubomirsky et al., 2005). Numerous positive health behaviors have been correlated with happiness, such as better oral health practices (Dumitrescu, Kawamura, Dogaru, & Dogaru, 2010), being more physically active (Piqueras, Kuhne, Vera-Villarroel, van Straten, & Cuijpers, 2011), and maintenance of normal body weight (Chang & Nayga, 2010; Piqueras et al., 2011). According to the industrial organizational literature, happiness is correlated with higher sales, greater success, and greater productivity at work (Hoggard, 2005; Lyubomirsky, King, & Diener, 2005). Happiness has also been found to be correlated with individuals reporting being more sociable, altruistic, energetic, having marriages that are more fulfilling, more fulfilling friendships, and even a longer life (Martin, 2005; Norrish & Vella-Brodrick, 2008). Within the World Database of Happiness, one can see that happiness has been correlated with things such as: meaning of life, physical activity, mental health, work-life balance, amount of social support, satisfaction with environment, satisfaction with local community, and the list continues (Veenhoven, 2015).

Research by Yoon (2006) suggested that increased life satisfaction in the general population is significantly associated with social network support. It has also been found that well-being occurs as a result of an interaction among the quality of the society where people live

(such as social equality, respect for civil liberties and human rights, access to different levels of education, and economic prosperity) (Veenhoven, 1994), "the cognitive and motivational processes that serve to maintain or enhance both enduring happiness and transient mood" (Lyubomirsky, 2001, p. 240), and sociodemographic factors and personality traits (Keyes, Shmotkin, & Ryff, 2002). According to Diaz et al (2015), life satisfaction is linked to actualization of one's own potential and personal growth. Neugarten, Havinghurst, and Tobin (1961) indicated that necessary conditions for well-being are finding meaning in life and having a positive image about oneself. Ryff (1989a) proposed a construct called psychological well-being, which she measured with the Psychological Well-Being Scales (PWBS; Ryff 1989b). These scales suggest that someone's psychological well-being is made up of six dimensions: self-acceptance, control of the environment, personal growth, autonomy, positive relations, and purpose in life. Kashdan, Biswas-Diener, and King (2008) found that people are often satisfied with their lives more when they are involved in virtuous activities and meaningful pursuits.

History and Construction of the GNHI

The primary purpose of this study is to contribute to the happiness movement by buttressing the psychometric base of a commonly used instrument measuring happiness; this instrument is the Gross National Happiness Index (GNHI; Musikanski et al., 2017). A review of the extant research literature on this instrument reveals that it has credible face validity, but its psychometric base is insubstantial. In view of the primary goal of this dissertation, it may be helpful to review the history and construction of the GNHI. Any extant literature on the psychometric properties of the instrument is detailed in the methods section of this dissertation.

The GNHI was created by a nonprofit organization called The Happiness Alliance. The overarching goal of the Alliance is to foster a view of "a world where all beings can thrive. It

was founded on a mission to improve societal well-being by increasing public understanding and appreciation of factors that lead to life satisfaction, resilience, and sustainability" (Musikanski et al., 2017, p. 5). The organization bases its mission on evidence that implementing happiness measures can lead to increased value of others' well-being, individual happiness, and caring about the sustainability of the planet (Cloutier, Jambeck, & Scott, 2014; Pfeifer & Cloutier, 2016; Zidansek, 2007). The organization hopes for improved ecological sustainability, public policy, and personal and community happiness (Frey & Stutzer, 2011; Musikanski et al., 2017).

The Happiness Alliance originally used as its evaluative tool, the 2010 Greater Victoria Well-Being Survey (Victoria Foundation, 2010), but then later modeled its own Happiness Index after the Gross National Happiness Index of the Kingdom of Bhutan (Happiness Alliance, 2014b). Bhutan was chosen for study because in this country, there were pressures from government leaders to use Gross National Product as the primary goal and measure of success for the government; this led to the development of the concept of gross national happiness (GNH) in response (Ura, Alkire, Zangmo, & Wangdi, 2012). Musikanski et al. (2017) wrote that, composed of high-level officials, Secretaries of all ministries, and the Prime Minister, Bhutan's Gross National Happiness Commission (n.d.) developed a mandate "to ensure all development policies and plans are formulated and implemented in line with the principles of GNH" (p. 5).

The Happiness Alliance was inspired by the work in Bhutan, and developed its own survey instrument between 2011 and 2016. It has been called the GNHI and the Happiness Index interchangeably. The present researcher will call it the GNHI. According to Musikanski et al. (2017), it is the only survey instrument of its kind that has been translated into over 10 languages and is available freely worldwide. The Happiness Alliance intended for the GNHI to be useful for policy makers, researchers, and community organizers in working towards a greater

understanding of and enhancing community well-being, individual happiness, environmental sustainability, economic equality, and social justice. They hope to bring about social change through having the survey instrument freely available to researchers, government, organizations, community organizers, students, educators, and more. Users can take the survey for themselves to see their own levels of happiness in the various dimensions. They can also use the survey for their own target population. If interested, users can also freely access The Happiness Alliance's data set to compare to their own target population's responses. Musikanski et al. (2017) also reported that the instrument has been found to have practical utility through its years of development, and its use by over 200 groups, including community organizers, therapists, consultants, academics, policy makers, and others. Musikanski et al. (2017) suggested that "the survey and its data can serve: group assessment, individual assessment, identification of vulnerability in populations, fundraising, policy and program guidance, resource allocation, awareness raising, education and outreach, life-skill development, academic research, community engagement, and program or project evaluation, among other functions" (p. 13).

In the Methods section of this dissertation, the reader will find a review of the extant psychometric research on the Gross National Happiness Index and will likely further understand the need for this dissertation. In order to proceed with this project, a decision must be made regarding the choice of a criterion variable to be used to search for evidence of validity in the GNHI. This matter will be reviewed in the next section.

Explanation of Choice of a Criterion Variable to Search for Evidence of Discriminant Validity of the GNHI

At this point, the narrative will focus on the criterion that will be used in this initial assessment of the validity of the GNHI. But first, it will be necessary to provide some

explanation and definitions. According to Urbina (2014), validation research is of a multifaceted nature. There are many routes to validation.

Additionally, according to Urbina (2014), evidence based on relations to other variables can take two forms: convergence and differentiation. Urbina (2014) wrote, "Consistently high correlations between measures designed to assess a given construct…may be taken as *convergent* evidence of validity, that is, evidence regarding the similarity, or identity, of the constructs they are evaluating. By the same token, *discriminant* evidence of validity, based on patterns of divergence such as consistently low correlations between measures that are supposed to differ, also may be used to substantiate the identities of constructs they tap" (p. 195). To illustrate the second (divergent) case, Urbina (2014) cited that the correlation between the Bipolar, Manic scale of the MCMI-III and the MMPI-2 Depression scale was low (r = .06) and the correlation between the Major Depression scale of the MCMI-III and Hypomania on the MMPI-2 was also low (r = .08; Millon, Millon & Davis, 1994). Both correlation coefficients reveal that clinical depression appears to be independent of bipolar disorder.

Another example of how a discriminant validity paradigm may be helpful to the endeavor of understanding psychological constructs is cited in this dissertation. As explained in the section focusing on Literature Linking Happiness to Anxiety, the work of Diener et al. (1985a) found that while the correlation between The Satisfaction With Life Scale (SWLS) and the Rosenberg (1965) Self-Esteem Scale was .54 (convergent validity), the SWLS correlated -.41 with the Symptom Checklist, a measure of psychopathology, by Derogatis et al. (1974), providing evidence of discriminant validity. Moreover, in this same study it was found that the SWLS correlated -.48 with the Neuroticism scale of the Eysenck Personality Inventory (Eysenck & Eysenck, 1964). That is, a sense of life satisfaction is negatively related to the presence of

psychiatric symptoms and neuroticism. These large negative correlations provide validity evidence that the constructs being measured covary (inversely) in psychologically meaningful ways. Finally, in 1997 Anastasi and Urbina wrote "Discriminant validation is also especially relevant to the validation of personality tests, in which irrelevant variables may affect scores in a variety of ways" (p. 130).

To emphasize the gravity of Anastasi and Urbina's pronouncement one need only review the history of the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943), one of the most widely used psychological assessment instruments in the history of applied psychology. The MMPI was first published in 1943. In spite of its popularity in clinical circles, it lacked a critical psychometric quality, discriminant validity. All of its clinical scales intercorrelated highly. Indeed, early factor analytic studies of the MMPI discovered a single "first factor" (Eichman, 1961; Millimet, 1970; Welsh, 1956, 2000), and all the clinical scales were saturated with this factor. That is, the original scales did not discriminate. Finally, sixty years after the publication of the original MMPI, a new MMPI scale was introduced that was intended to improve the discriminant validities of the clinical scales (Tellegen et al., 2003).

It should be emphasized here that a likely candidate for a criterion variable for the GNHI might be some other more heavily validated measure of happiness. One such example might be the Cantril Self-Anchoring Striving Scale (Cantril, 1965). It is a brief survey item that asks people to rate where they feel they personally stand on the ladder at the present time, where the top of the ladder – 10 – represents the best possible life for you, and the bottom of the ladder – 0 – represents the worst possible life for you. However, this scale was not chosen as a criterion variable for three reasons. First, it is a one-item scale and it is not possible to conduct traditional psychometric analyses (e.g., internal consistency statistics) with a one-item scale. The second

reason the Cantril Ladder was not used as a criterion variable is that it was judged to have an insufficient psychometric base. In fact, speaking of Cantril's measurement device, Levin and Currie (2013) stated, "it has never been formally validated" (p. 1047). Levin and Currie were able to provide some preliminary empirical support of its reliability and convergent validity, but the base of evidence was very slim. Clearly there is a need for additional research on the reliability and validity of the scale. A third reason the Cantril Ladder was not used as a criterion measure is that it is based on people's subjective understanding of what the best and worst possible life for them would mean, and it is not able to address the empirically based psychological variables that are likely associated with happiness. Similarly, the five-item Satisfaction with Life Scale (Diener et al., 1985a) also would not work as a criterion variable for this researcher's purposes, as it is based on subjective, overall life satisfaction questions, and also would not provide any information regarding the dimensions underlying happiness.

Hence, the decision to use the STAI-AD as a criterion variable was based on its extremely large research foundation. This dissertation, in part, searches for a pattern of divergence between happiness (GNHI) and anxiety (STAI-AD), which would provide initial empirical evidence of discriminant validity of the GNHI. In view of the nascent state of psychometric development research on the GNHI, it seemed wise to choose a criterion variable with an extraordinarily large research foundation. We now turn to a review of some of the literature on the construct of anxiety.

Previous Examination of Anxiety

In support of shifting our attention now to anxiety, Diener and Oishi (2004) reported findings by Diener and Seligman (2002), who stated:

> That even the happiest people, the top 10 percent in happiness, have moods that go up and down – they are not stuck in euphoria. It is functional to have a mood system that reacts to events, including negative events. In some circumstances unpleasant emotions such as anxiety and sadness can facilitate effective functioning, and the happiest people occasionally feel such emotions – it is just that they do not do so very often. Furthermore, we have not found an individual who is at the very top of the happiness scale who is still at that level two years later. The happiest individuals seem to be in the 8 or 9 range on a 10-point scale, but do not experience continuing ecstasy, which would probably be dysfunctional. (p. 14)

This supports the idea that an individual's affect is not necessarily a constant, that those with higher positive affect tend to have lower amounts of negative emotions or negative emotions that do not last as long, and that unpleasant emotions such as sadness and anxiety are normal and even healthy to a certain extent, suggesting that anxiety, like happiness, exists on a continuum. Further, this supports the thought that anxiety can be a normal, adaptive emotion within normal limits, as well as a disorder when present in maladaptive extremes.

In *Kaplan & Sadock's Synopsis of Psychiatry,* Sadock, Sadock, and Ruiz (2015) recognized that "everyone experiences anxiety" (p. 387). The authors characterized anxiety as a vague, diffuse, unpleasant sense of apprehension, that is often accompanied by autonomic symptoms such as palpitations, mild stomach discomfort, perspiration, restlessness – including an inability to stand or sit still for long, tightness in the chest, and headaches, and that the combination of symptoms that individuals feel when they experience anxiety tends to vary across persons. They recognized that "anxiety is an alerting signal; it warns of impending danger and enables a person to take measures to deal with a threat" (p. 387). The authors went on to state

that anxiety to a certain extent can be an adaptive and normal response that can save our lives as well as warn us of threats of bodily damage, helplessness, pain, the frustration of bodily or social needs, or possible punishment; of a menace to one's status or success; of separation from loved ones; and ultimately, of threats to wholeness or unity. Specifically, Sadock et al. (2015) stated:

> It prompts a person to take the necessary steps to prevent the threat or to lessen its consequences. This preparation is accompanied by increased somatic and autonomic activity controlled by the interaction of the sympathetic and parasympathetic nervous systems. Examples of a person warding off threats in daily life include getting down to the hard work of preparing for an examination, dodging a ball thrown at the head, sneaking into the dormitory after curfew to prevent punishment, and running to catch the last commuter train. Thus, anxiety prevents damage by alerting the person to carry out certain acts that forestall the danger. (p. 388)

Similarly, the Yerkes-Dodson (inverted U) law asserts that anxiety is beneficial to performance up to a certain point. Specifically, this law predicts that increases in anxiety tends to positively affect performance until a medium, asymptotic level of stress is reached, and that if anxiety continues to increase after that optimal point, then performance will decline (Yerkes & Dodson, 1908). This also supports the idea that anxiety is on a continuum, and that it is adaptive to a certain extent, but too much can lead to impairment.

According to a 12-month prevalence study, anxiety disorders affect 18.1% of the U.S. adult population. Of these, 22.8% of cases (4.1% of the adult U.S. population) are classified as "severe" (Kessler, Chiu, Demler, & Walters, 2005). When examining lifetime prevalence in population-based, large surveys, up to 33.7% of the population is affected by an anxiety disorder at some point in their lifetimes (Bandelow & Michaelis, 2015). It was found that anxiety

disorders, including generalized anxiety disorder, specific phobias, separation anxiety disorder, panic disorders, agoraphobia, and social anxiety disorder, are the most common mental disorders, followed by mood disorders; anxiety disorders are often comorbid with other anxiety disorders and with mood disorders, respectively (Bandelow &Michaelis, 2015; Kessler et al., 2005).

According to the American Psychological Association (2013), the latest Association for University and College Counseling Center Directors' survey of counseling center directors found that the number of students on their campuses with severe psychological problems is increasing. This association is an international organization that includes counseling center directors at colleges and universities in Canada, the United States, the Middle East, Australia, Asia, and Europe. The 400 counseling directors who participated in the survey reported that the top presenting concern among college students is anxiety (41.6 percent), followed next by depression at 36.4 percent, and then relationship problems at 35.8 percent (APA, 2013).

It has also been found that women are more likely than men to experience an anxiety disorder; specifically, they are 60% more likely than men to experience an anxiety disorder over the course of their lifetime (McLean, Asnaani, Litz, & Hofmann, 2011). Neurobiological and genetic factors, as well as psychosocial contributors such as chronic stressors or childhood sexual abuse, have been discussed as possible causes for the higher prevalence of anxiety disorders found in women (Bandelow & Michaelis, 2015). It has also been found that with higher socioeconomic status, the prevalence of anxiety disorders decreases (Sadock et al., 2015).

Anxiety disorders are associated with immense healthcare costs. In a 2013 study examining total direct medical expenditure, it was found that anxiety disorders accounted for approximately 33.71 billion US dollars, showing that this category of mental illnesses absorbs a significant portion of healthcare resources in the US (Shirneshan et al., 2013).

There is evidence that shows that anxiety disorders can successfully be treated with psychological therapies such as Cognitive Behavioral Therapy and with medication (Baldwin et al., 2008). At the same time, it has been reported that there is substantial undertreatment and underrecognition of anxiety disorders and depression, by both providers and consumers of mental health services. Many individuals with an anxiety disorder have the disorder for years before they are referred to a specialist. According to a survey conducted with psychiatrists who were experienced in treating anxiety disorders, 45% of patients lived with Generalized Anxiety Disorder symptoms for two or more years before being correctly diagnosed with the disorder (Baldwin, Allgulander, Bandelow, Ferre, & Pallanti, 2012). Many affected individuals are also reluctant to seek treatment from mental health professionals because of the stigma associated with mental disorders (Baldwin & Michaelis, 2015). Individuals often suffer from their anxiety disorder for years or even decades, suggesting that anxiety disorders are chronic. They do not, however, always last throughout the rest of a person's life. They tend to emerge in childhood, adolescence, or early adulthood, then reach a peak around middle age, and then have a tendency to decrease as people reach older age – even without treatment. Anxiety disorders rarely require inpatient treatment; patients are usually treated as outpatients. Because of this, people with anxiety disorders probably do not receive as much attention from mental health specialists as those with other disorders that are less frequent but require inpatient treatment, such as bipolar disorders or schizophrenia (Bandelow & Michaelis, 2015).

Robert Burton wrote *The Anatomy of Melancholy,* in 1621, in which he described symptoms of anxiety attacks in socially anxious people. He wrote, "Many lamentable effects this fear causeth in man, as to be red, pale, tremble, sweat; it makes sudden cold and heat come over all the body, palpitation of the heart, syncope, etc. It amazeth many men that are to speak or

show themselves in public." Hippocrates also wrote about one of his patients, who appears to suffer from what we would call "social anxiety disorder" today: "He dare not come into company for fear he should be misused, disgraced, overshoot himself in gestures or speeches, or be sick; he thinks every man observeth him" (Burton, 1621). Anxiety such as this has always existed in humans, both in older times such as in these writings, and in modern times, such as in the 21st century. At times, it is difficult to draw a clear line between what is well-founded fear and pathological anxiety. However, individuals without any fear would likely not survive for long. Anxiety is something that appears in our daily life (Bandelow & Michaelis, 2015). Whether it progresses and develops into an anxiety disorder differs among individuals, but we have all felt anxiety to some extent.

Defining Anxiety

According to the World Health Organization (WHO, 2006), "Normally, emotions such as anxiety, anger … pain or joy interact to motivate a person to a goal-directed action. However, when certain emotions predominate and persist beyond their usefulness in motivating people for their goal-directed behavior, they become morbid or pathological." This provides an argument for the necessity of assessing and monitoring emotional states in clinical settings in both diagnosis and treatment, as well as in community settings when it comes to assessing anxiety levels and preventing the development of anxiety disorders. This would provide us with information about mental health, just as physicians regularly measure vital signs such as temperature, pulse rate, and blood pressure to provide needed information about physical health (Spielberger & Reheiser, 2009). Because we have all felt the emotion of anxiety, and it is a common human phenomenon affecting all of our lives to some extent, it is important to understand what we mean when we discuss the term "anxiety."

Darwin (1872/1965) considered the emotions of rage and fear to be characteristics that were universal to both animals and humans, and that because they facilitate successful survival and adaptation, have evolved over time (Plutchik, 2001). According to Darwin, fear is "… the most depressing of all the emotions; and it soon induces utter, helpless prostration" (1872/1965, p. 81). He also stated, "If we expect to suffer, we are anxious; if we have no hope of relief, we despair" (Darwin, 1872/1965, p. 176). Freud (1924) defined anxiety as "something felt," an emotional condition or state that is unpleasant and specific and includes tension, physiological arousal, worry, and apprehension. He also described anxiety as the "fundamental phenomenon and the central problem of neurosis" (Freud, 1936, p. 85). Hippocrates wrote about both anxiety and depression through his writings about the Greek term, *melancholia,* which he described as a "black mood" that involved both prolonged sadness and fear (Jackson, 1995). Galen then extended Hippocrates' view of melancholia to include somatic symptoms, affective feelings, and self-depreciating cognitions, and this viewpoint was utilized for the following 1,500 years. For over half a century, the measurement of anxiety has received significant attention as it relates to research, diagnosis, and treatment planning (Spielberger, 1983; Taylor, 1953). With the ascent of behaviorism, research on emotions shifted from examining subjective feelings to evaluating behavioral and physiological variables that could be measured objectively. Antecedents that were carefully defined and possibly manipulated were measured to assess their impact on physiological, behavioral, and cognitive responses that could be measured objectively. Then, in the 1960s, with the evolution of cognitive psychology, feelings and thoughts were studied in detail to see how they impacted emotional reactions and behavior (Spielberger & Reheiser, 2009). Spielberger (1966) stated that emotions are generally defined now as "psychobiological states" that are complex and consist of physiological arousal, affective feelings, and cognitions.

State and Trait Anxiety

In this research, state and trait anxiety will be assessed with the State-Trait Anxiety Inventory for Adults (STAI-AD; Spielberger et al., 1977). It is important that we understand what is meant when discussing these terms, as well as discussing the development of the STAI-AD and research regarding its reliability and validity. Spielberger and colleagues (1983) saw the term *anxiety* as referring to two different, but related, constructs. They recognized that anxiety most often describes an emotional condition or state that is unpleasant, but they also asserted that anxiety describes a personality trait characterized by individual differences in anxiety-proneness (Spielberger et al., 1983). Spielberger (1966, 1972a, 1972b, 1977, 1979a, 1983) elaborated on Cattell's (1966a; Cattell & Scheier, 1958, 1963) concepts of state and trait anxiety in order to develop the conceptual framework for the construction of the STAI. Spielberger (1972a) stated that emotional reactions are seen as expressions of a person's personality states. He explained, "An emotional state exists at a given moment in time and at a particular level of intensity" (Spielberger et al., 1983, p. 4).

State anxiety (S-Anxiety) was defined as the subjective feelings of apprehension, tension, worry, and nervousness, and the intensity of these subjective feelings at a particular time, with associated arousal or activation of the autonomic nervous system (Spielberger & Reheiser, 2009). Often transitory, personality states can recur when appropriate stimuli evoke them, and, if the conditions that evoked them persist, they may even endure over time. Where emotional states can be seen as transitory, personality traits can be seen as differences among people that are relatively enduring with regards to how they tend to perceive the world and their tendencies to behave or react in a certain way with regularity that is predictable (Spielberger et al., 1983). Trait anxiety (T-Anxiety) was defined as differences in a person's anxiety-proneness that is relatively

stable. This refers to differences between people in how often they tend to perceive stressful situations as threatening or dangerous, and how often they tend to react to such situations with the intensity of their S-Anxiety reactions elevating. T-Anxiety also tends to provide insight into how often and how intense past anxiety states have manifested, as well as the probability that similar S-Anxiety states will manifest again in the future. The stronger a person's T-Anxiety, the higher the likelihood that the individual will experience elevations in S-Anxiety that are more intense in dangerous or threatening situations (Spielberger et al., 1983).

History and Construction of the STAI. According to Spielberger, Gorsuch, and Lushene (1970), the initial goal of the STAI when test construction began in 1964, was to have the inventory consist of a single set of items that could assess both trait and state anxiety with the use of different instructions. Items were adapted from existing anxiety measures, adjusting the formatting so that the same item could assess either T-Anxiety or S-Anxiety with different instructions, and new items were also written to gather information on the absence or presence of anxiety. The instructions for assessing T-Anxiety asked participants to rate the frequency of how much they tend to experience anxiety-related symptoms, feelings, and cognitions as described in the items, while the instructions for assessing S-Anxiety had participants answer according to the intensity of their anxiety-related feelings, "right now, at this moment," (Spielberger & Reheiser, 2009). More than 60 anxiety items were administered to large numbers of psychiatric patients and university students, with state instructions, and then with trait instructions. A final set of 20 items was selected for inclusion in the preliminary form of the STAI, after extensive item-validity research was conducted with data from more than 2,000 participants (Spielberger et al., 1970).

After further research conducted by Spielberger and colleagues (1970) on the preliminary form of the STAI, it was found that simply altering the instructions was not enough to be able to fully differentiate between individuals' state and trait anxiety; certain key words indicated either trait or state anxiety more than the researchers had initially realized. Because of the problems associated with using the same items to measure both types of anxiety, the decision was made to establish two separate 20-item sets to assess T-Anxiety and S-Anxiety after modification of the test-construction strategy of the STAI. For what became the 20-item STAI (Form X) S-Anxiety Scale, items that had substantially higher scores in stressful conditions rather than non-stressful conditions, indicating the best construct validity, when given with state instructions, were chosen. The 20-item STAI (Form X) T-Anxiety Scale consisted of items with the best concurrent validity, as indicated by the highest correlations with Cattell and Scheier's (1963) Anxiety Scale Questionnaire (ASQ) and Taylor's (1953) Manifest Anxiety Scale (MAS), as well as items that were the most stable over time when given with trait instructions. After these changes, 15 items in each of the scales were measures that were unique to either trait or state anxiety, while only five of the Form X version of the STAI items were the same in both the 20-item T-Anxiety scales and the 20-item S-Anxiety scales (Spielberger et al., 1970).

More than a decade of research led to further revision of the STAI after the publication of Form X in 1970. The goal was then to develop "purer measures" for assessing trait and state anxiety. The STAI items with the best psychometric properties were carefully scrutinized, leading to 30 percent of the original Form X items being replaced after item selection and validation procedures, leading to the development of the current STAI, Form Y (Spielberger, 1983), which is also the one used by this author in the current research. More than 5,000 participants were tested as a part of the construction and validation process of the STAI Form Y.

Distinct trait and state anxiety items were identified through factor analyses of Form Y (Spielberger, Vagg, Barker, Donham, & Westberry, 1980), which were for the most part consistent with results from STAI Form X factor studies (Gaudry, Spielberger, & Vagg, 1975). However, there was a better balance between the number of T-Anxiety absent and present items in Form Y, indicating that the T-Anxiety factors had better simple structure than the corresponding Form X factors, and were also more differentiated and stronger than the Form X factors (Spielberger et al., 1980).

More than 10,000 adults and adolescents were tested throughout the test construction and validation process of the STAI in order to secure its empirical foundations (Spielberger & Reheiser, 2009). Norms for military personnel; medical, surgical, and psychiatric patients; working adults; prison inmates; and college and high school students are reported within the Test Manual for the STAI (Form Y; Spielberger et al., 1983). There has even been a STAI for Children between the ages of 9 to 12 developed, the STAIC (Spielberger, 1973), which has been used in a number of studies of children with physical or emotional challenges (Spielberger & Reheiser, 2009).

Spielberger (1989) reported that the STAI has been cited in over 14,000 archival studies, and has been adapted in 60 different dialects and languages since it was first introduced (Spielberger & Gorsuch, 1966). Spielberger and Reheiser (2009) reported that the STAI has been utilized in numerous studies in the areas of medical, psychosomatic, and psychiatric disorders. It has also been used as an outcome measure in research examining the effectiveness of cognitive, biofeedback, and behavioral treatments; investigations of general psychological processes, such as academic achievement, attention, learning, and memory; and examinations of the effects of

anxiety on phenomena that are situation-specific, such as sports competition and speech anxiety (Spielberger & Reheiser, 2009).

To this researcher's knowledge, the STAI-AD has never been utilized with the GNHI to measure specifically how state and trait anxiety relate to happiness, and to act as a concurrent, criterion, discriminant measure to work towards establishing the psychometric base of the GNHI, while contributing to the happiness literature. Further discussion regarding the reliability and validity of the STAI-AD can be found within the methods section of this dissertation.

Literature Linking Happiness to Anxiety

This researcher did not come across any direct empirical evidence of a significant high negative correlation between measures of happiness and state and trait anxiety. For this reason, this researcher then looked for "companion" constructs assessing well being or life satisfaction. What follows is related literature, which this researcher then extrapolates, expecting the findings of the present study examining the relation of happiness to state and trait anxiety might at least approximate those of related studies.

It is well known within the literature on the topic of happiness that increased happiness brings about multiple benefits in a person's life, including improved mental health (Lyubomirsky et al., 2005). Within the World Database of Happiness, one can see that in numerous studies, happiness has been correlated with mental health (Veenhoven, 2015). Since the concepts of life satisfaction and well-being have been shown to be intertwined within the definition of happiness, it is important to look at the fundamental foundations of life satisfaction and well-being and how these relate to mental health. The Satisfaction With Life Scale (SWLS) has been found to be negatively correlated to anxiety, depression, and psychological distress (Arrindell, Meeuwesen, & Huyse, 1991). Researchers Diener et al. (1985a) found a correlation of .54 between their

SWLS and the Rosenberg (1965) self-esteem scale. These researchers also found a correlation of -.41 between their Satisfaction With Life Scale and Derogatis, Lipman, Rickels, and Plomin's (1974) symptom checklist, which provides psychometric evidence of the discriminant validity of the SWLS. Also, when comparing their SWLS to the Neuroticism scale of the Eysenck Personality Inventory (Eysenck & Eysenck, 1964), they found a correlation of -.48, again providing psychometric evidence of the discriminant validity of the SWLS. Based on these findings, it appears that these researchers found that in general, satisfaction with one's life is correlated with high self-esteem, low symptomology, and low neuroticism (Diener et. al, 1985a). It is important to note that these researchers' SWLS provided an overall rating of one's satisfaction with one's life, but it did not explore one's satisfaction with life in particular life domains, such as income or health (Diener et. al, 1985a).

Watson and Tellegen's (1985) two-factor structure of affect provides a paradigm that may guide us in understanding the relationship of happiness to anxiety. This model was mentioned in the "Psychology of Happiness" section of this dissertation in order to expand on their view of happiness as a dimension that is on a continuum of happy to unhappy; this model is mentioned here to shed light on how the model relates to this dissertation's aim of examining the relationship of anxiety to happiness. It may be helpful to begin this section by emphasizing that this model was chosen to provide some theoretical basis for the dissertation. It was also chosen because it is one of the few models that provides a schematization of a largely unidimensional bi-polar structure of happiness and unhappiness. Tellegen, Watson and Clark (1999) emphasized that the 1985 Watson and Clark two-dimensional map was "not designed to be exhaustive or exact" (p. 298) nor was it "intended to represent an actual circumplex" (p. 298). It is also important to emphasize, however, that their two-dimensional map includes a unidimensional

bipolar schematization of a polarity ranging from happiness (Pleasantness) and unhappiness (Unpleasantness) (or the PU dimension), which would seem to be fairly close to the phenomena being studied in this dissertation. It is also important to emphasize that in the model we are using, the exact opposite of happiness is not anxiety; it is unhappiness. In fact pure anxiety "resides" in the high negative realm of the model (High NA). Adjectives describing affect in the High NA realm are distressed, fearful, jittery and nervous. However, the Unpleasant (sad/unhappy) realm of the PU dimension resides only one octant from High NA. In fact, according to Ben-Porath (2012), subjects who fall emotionally in the Unpleasantness realm (equidistant from Low Positive affect (depression) and High Negative Affect (Anxious)) are thought to be demoralized. Ben-Porath (2012) goes on to state that "Tellegen's (1985) conception of this mood dimension, marked on its dysfunctional end by a combination of high NA and low PA, and characterized by adjectives such as sad, discouraged, and blameworthy, is the common demoralization component of self-report measures of personality and psychopathology. A comparison of the adjectives just listed with Frank's (1985) description of demoralization, [describes the demoralized person as]: - 'the demoralized person suffers from a sense of failure, a loss of self-esteem, feelings of hopelessness and helplessness, of alienation or isolation'" (p. 47).

Hence, the Unpleasant realm of Watson and Tellegen's two-dimensional map is associated with demoralization. We might ask what the relationship might be between demoralization and anxiety. In 2010, Padilla wrote her dissertation on the Relationship of MMPI-2-RC Demoralization Scale to MCMI-III Scales in Psychiatric Patients. Based on her sample of 444 psychiatric inpatients, she found that the zero order correlation between the RC Demoralization scale and the MCMI-III Anxiety scale was .64. In her factor analysis, she found that rotating four factors provided the best solution; within the first of the four factors, which she

labeled Negative Affect, the Demoralization Scale had a weight of .477 and the MCMI-III Anxiety Scale had a weight of .76.

While Watson and Tellegen's (1985) model does not predict a perfect inverse relationship between anxiety and happiness, it shows that they were close to one another within their circumplex model of mood, indicating that further study would likely be beneficial to examine the direct relationship of anxiety to happiness, specifically how state and trait anxiety relate to happiness.

Researchers Spielberger and Reheiser (2009) recognize that anxiety, depression, and anger are considered "critical psychological vital signs" that are strongly related to a person's well being. They provide an argument that in order to gain essential information about an individual's mental health, it is necessary that these are measured in order to better understand how this impacts the life of the individual. It is the argument of the current researcher that just as Spielberger and Reheiser (2009) argue that anxiety is an emotional state that should be measured, the emotional state of happiness is something that should be measured and understood. This would be in order to have a more holistic picture of the mental health of an individual, and to work towards a more prevention and health promotion community psychology approach, along with a positive psychology approach within clinical psychology of recognizing a person's strengths and weaknesses, rather than only focusing on the "issues" or "deficits." This can also be supported through Spielberger and Reheiser's (2009) assertion that "Items indicating positive feelings or the absence of negative emotions should be included for assessing the full range of an emotion" (p. 295). Just as there are questions within Form Y of the STAI that measure the absence of anxiety, it is this researcher's argument that we should also measure the possible

presence of happiness in individuals and the relation of the two in order to gain a fuller picture of a person's mental health.

CHAPTER 2: PURPOSE OF THE STUDY

The Need for Further Study of the Validity of the GNHI

The GNHI has good face validity, but there are no publicly available empirical reports of its concurrent validity – convergent nor divergent (discriminant). The study of what constitutes happiness would appear to be a worthy goal, but it is essential that the GNHI also be subjected to basic psychometric research. Hence, this study examined the relationship of the GNHI to the STAI-AD in a convenience sample of WSU undergraduate and graduate students as well as staff. Data were analyzed through an exploratory factor analysis followed by Promax rotations because the dimensions of happiness were related. This researcher also conducted zero order correlations and a canonical correlation, based on the dimensions of happiness within the GNHI with the state and trait anxiety scales within the STAI-AD.

The purpose of this study was to contribute to the happiness literature by assessing what dimensions underlie happiness through conducting an exploratory factor analysis on data collected in this study on the GNHI, and to then examine the nature of how the GNHI dimensions relate to the scales of the STAI-AD. This step may provide insight into how dimensions of happiness relate to state and trait anxiety. In this manner, this study utilized the established STAI-AD as a concurrent criterion measure. It was the hope of this researcher that this would begin to provide empirical support towards establishing the base of evidence of discriminant validity of the GNHI. This then provides a start towards examining the construct validity of the GNHI as a measure of happiness. The author knows of no other study examining the direct relationship of state and trait anxiety, as measured by the STAI-AD, to happiness, as measured by the GNHI.

Because there is no publicly available empirical data with details of the psychometric properties of the GNHI, the STAI-AD was chosen as a criterion variable because of the enormous size of its technical literature. This study will be a first step in the validation process, which must eventually be replicated in a multitude of ways. Because several previous studies have found an inverse relationship between measures of well being and measures of psychopathology and emotional discomfort, it was anticipated that the two variables under study herein would be inversely related or have low positive correlations, which would provide empirical support towards beginning to assess discriminant validity of the GNHI. However, by its nature, this study was exploratory; thus, no formal hypotheses were articulated.

The STAI-AD is widely used in both clinical and research settings. The GNHI has been used nationally in both community and research settings. The concepts of anxiety and happiness are relevant in relation to clinical and community settings. Clinically, this relates to clients who may be living with anxiety and trying to find happiness. This relates to the community psychology concept of prevention and health promotion through prevention of further negative symptoms and promotion of mental health and happiness. Perhaps focusing on anxiety and happiness is a good preventive, health promotion focus to keep people from needing treatment in the first place, or a way to keep them from needing it again in the future. This study also relates to the positive psychology concept of looking at the whole person, rather than only the "negative." For example, if a clinician is working with a depressed client, they could not only assess for symptoms of depression, but could also assess for levels of happiness in various areas, taking a community psychology, positive psychology, holistic approach while trying to fully understand the individual and move them towards recovery. The same could be said for a clinician working with a client whose presenting problem is anxiety. For these reasons, this study is relevant and

necessary in the fields of both clinical and community psychology. Therefore, assessing what happiness means, understanding the relationship between anxiety and happiness, and providing empirical support towards buttressing the psychometric base of the GNHI will help to further establish the measurability of happiness and the role each plays in people's lives.

CHAPTER 3: METHODOLOGY

Participants

This sample included students and staff within a Midwestern university. A random panel of 3,000 students and staff were invited to partake in the survey, and there was a 19.69% response rate. In total, there were 630 responses. Any participants who had less than 60% of the total number of questions completed were deleted, which led to deleting data from 131 participants and leaving a data set of 499 total participants. There are 90 survey questions not including demographics within this dissertation.

Out of the 499 total, there were 417 students and 72 staff. The majority of students identified as Seniors, followed by Juniors, Graduate Students, Freshman, then Sophomores. Out of students and staff, the majority reported their highest level of education as some college. The age of participants ranged from 18 to 77 years. There were more female respondents than male, Transgender, preferred not to answer, or other. Respondents were mostly White/Caucasian, followed by Hispanic, African American, Asian, Mixed Race, Other, Native American, and Pacific Islander. The majority of respondents were never married. Most were employed part-time, reporting a yearly household income of less than $10,000. See Table 1 for additional participant demographics in table format below.

Table 1. *Participant Demographics*

Variable	*n*	*%*
Students	417	85.3
Staff	72	14.7
Current Enrollment Status (Students Only)		
Freshman	74	17.9
Sophomore	66	15.9
Junior	92	22.2
Senior	107	25.8
Graduate Student	75	18.1

Table 1 (continued).

Variable	*n*	*%*
Demographic Questions for Students and Staff:		
Highest Level of Education		
High school degree	80	16.4
Some college	163	33.3
Associates Degree	89	18.2
Bachelors Degree	63	12.9
Some graduate education	42	8.6
Masters Degree	47	9.6
Doctoral Degree	5	1.0
Age*		
Gender		
Female	331	68
Male	145	29.8
Transgender	2	0.4
Prefer Not to Answer	3	0.6
Other	6	1.2
Ethnicity		
African American	25	5.1
Asian	23	4.7
Hispanic	37	7.6
Mixed Race	23	4.7
Native American	4	0.8
Pacific Islander	2	0.4
White/Caucasian	367	75.4
Other	6	1.2
Marital Status		
Married	122	25.1
Domestic Partnership	10	2.1
Cohabitation	15	3.1
Divorced	20	4.1
Widowed	4	0.8
Separated	4	0.8
Never Married	312	64.1
Current Employment Status		
Employed full-time	169	34.8
Employed part-time	206	42.5
Currently unemployed	23	4.7
Not working due to being a student	87	17.9
Yearly Household Income		
Less than $10,000	95	20.3
$10,000 - $19,999	50	10.7
$20,000 - $29,999	45	9.6
$30,000 - $39,999	47	10

*Age of participants ranged from 18 – 77.

Table 1 (continued).

Variable	*n*	*%*
Yearly Household Income (continued)		
$40,000 - $49,999	36	7.7
$50,000 - $59,999	20	4.3
$60,000 - $69,999	21	4.5
$70,000 - $79,999	22	4.7
$80,000 - $89,999	15	3.2
$90,000 - $99,999	22	4.7
$100,000 - $109,999	15	3.2
$110,000 - $119,999	10	2.1
$120,000 - $129,999	7	1.5
$130,000 - $139,999	5	1.1
$140,000 - $149,999	7	1.5
$150,000 - $159,999	3	0.6
$160,000 - $169,999	0	0
$170,000 - $179,999	4	0.9
$180,000 - $189,999	0	0
$190,000 - $199,999	3	0.6
$200,000 or higher	3	0.6
Prefer Not to Answer	38	8.1

Measures

Gross National Happiness Index (GNHI)

The Gross National Happiness Index (GNHI; Musikanski et al., 2017) is a commonly used instrument measuring happiness. It was created by a nonprofit organization called The Happiness Alliance, whose overarching goal is to foster a view of "a world where all beings can thrive" through bringing about a better understanding of happiness and the factors that lead to it in order to improve individual, community, and societal happiness, as well as potentially impacting public policy (Musikanski et al., 2017, p. 5).

The Happiness Alliance developed its own survey instrument between 2011 and 2016, and it has been called the GNHI and the Happiness Index interchangeably. The present researcher will call it the GNHI. According to Musikanski et al. (2017), it is the only survey

instrument of its kind that has been translated into over 10 languages and is available freely worldwide.

In the following subsection, the writer will review the extant psychometric research on the Gross National Happiness Index. Much of this literature is incomplete and lacking in detail. But, she will summarize technical data, where available, while delineating the many methodological limitations in this field that will hopefully be addressed in this dissertation. The majority of the material that follows was taken from Musikanski et al. (2017).

The GNHI was developed in four rounds. For a visual depiction of the four rounds, as well as the phases of round 1, see Figures 2 and 3 in Appendices B and C. Round 1 of the GNHI was inspired by the Kingdom of Bhutan. The data gathering and analyses for Round 1 were done by the San Francisco State University's Personality and Well-Being Laboratory, which was hired by The Happiness Alliance. The Happiness Alliance reports that the San Francisco State University Laboratory did not provide them with the results of their analyses, but assured them that the instrument was valid (Musikanski et al., 2017). Obviously this bit of information tells us little. But to continue, Round 1 consisted of a five-phase process. The terms domains and dimensions will be used interchangeably in the sections to follow. Phase 1 consisted of the dimensions developed by Bhutan, with additional domains added. According to Musikanski et al. (2017), "it consisted of the following domains, in order: (a) Satisfaction with Life, (b) Positive and Negative Experiences, (c) Domain Satisfaction, (d) Psychological Well-Being, (e) Health, (f) Time Balance, (g) Community Vitality, (h) Social Support, (i) Access to Education, Arts, and Culture, (j) Your Neighborhood, (k) Environmental Quality, (l) Governance, (m) Material Well-Being, and (n) Work, followed by a section on demographics" (p. 10). This was an hour-long survey, distributed to approximately 10,000 people via email, with a total of 515 respondents (a

5% response rate). Specifically, this had been distributed through an already existing email list that had been generated from a national organization that raises awareness around the issue of overworking, Take Back Your Time, and a national organization focused on regional sustainability indicators, Sustainable Seattle.

Researchers at the Personality and Well-Being Laboratory at San Francisco State University conducted a factor analysis, and various reliability and validity analyses within Phase 2. Musikanski et al. (2017) reported that the laboratory, again, did not provide them with the results, but assured them of the instrument's validity. As a result of the factor analyses conducted in Phase 2, 15 domains were identified within the survey. According to Musikanski et al. (2017), this factor analytic work combined with analysis of participant feedback to determine which questions best fit each domain, which led to modifications to the instrument. Specifically, this led to a reduction in the number of survey items that reduced the time to complete the survey to 30 minutes.

For Phase 3, the refined survey was distributed to another group, the Mechanical Turk (MTurk) website through Amazon.com, where participants were paid for participation. The goal of this phase was to reduce the number of items within each domain to eight or less, hoping to improve internal consistency and predictive validity. Convergent validity was also assessed by asking participants to indicate how satisfied they were with the questions that were within each happiness domain, and how well they thought those questions were defining that domain. As a result of Phase 3, the survey time was reduced to 15 minutes, while the number of items within each domain was reduced to an average of eight (Musikanski et al., 2017). This researcher would like to note that what is described as convergent validity within Phase 3, appears more similar to what would be considered face validity.

For Phase 4, the new version of the survey was redistributed again through Amazon's MTurk website, where original participants were excluded from participating. The response scales were now 5-point Likert scales for all domains but the first two. The San Francisco State University Laboratory then analyzed the scales to ensure that the instrument had alpha reliability coefficients greater than .70 – providing evidence of acceptable internal consistency (Musikanski et al., 2017).

In Phase 5, 578 participants completed the survey through SurveyMonkey.com. Musikanski et al. (2017) stated that "a factor analysis of variance, internal consistency of data, and correlation with the satisfaction rating confirmed the validity of the survey" (p. 11). While this may not be specified very clearly, this author wants the reader to know that there were multiple phases within Round 1, but then not in the following rounds. We will next turn to Round 2.

In order to make the survey more user-friendly, the goal of Round 2 of development was to reduce the time it took participants to take the survey to approximately 12 minutes or less, or to 60 questions or less. This was recommended to The Happiness Alliance through their conversations with Gallop's professional pollsters, who previously conducted the Gallup World Poll (Gallup World Poll, 2008; Musikanski et al., 2017). As a result, both domains and questions were eliminated. Specifically, the domains of Domain Satisfaction and Your Neighborhood were eliminated. The section on Access to Education, Arts, and Culture had four questions removed. The Positive and Negative Experiences domain, which initially had 12 questions, was reduced to four questions. Round 2 now had 12 domains and took a total of approximately 12-15 minutes (Musikanski et al., 2017).

In Round 3, The Happiness Alliance used the United Kingdom's happiness/well-being module to replace the Positive and Negative experiences domain. Musikanski et al. (2017) report a focus on standardization and shortening the length of the survey within this phase.

Round 4 focused on further shortening the survey, through analyzing which items did not provide new statistical information (Musikanski et al., 2017). A convenience sample took the survey online, where participants learned about the survey through grassroots activists who used the survey in their own work and had taken The Happiness Alliance's trainings, word of mouth, and the media. Respondents came from around the world, with 85% from the United States. The survey data had all been collected into one database from 2011 to 2014, where the survey had been translated into Chinese Simple, Romanian, Somali, Oromo, Filipino (Tagalog), Chinese Traditional, Vietnamese, and Spanish. Fourteen questions were removed, leaving a survey with 12 domains and 50 total questions (Musikanski et al., 2017).

Round 4 of the GNHI, the Happiness Alliance's most current version of the instrument, measures the following 12 domains: life satisfaction; the feeling of happiness; time balance; community; work; material well-being; education, arts, and culture; environment; governance; psychological well-being; health; and social support (Happiness Alliance, 2014a; Happiness Alliance, 2014c). See Happiness Alliance (2014a) and Musikanski et al. (2017) for a detailed listing of each question within the survey and the sources of each question. The present researcher utilized the Round 4 version of the GNHI in this dissertation; the Round 4 version of the GNHI has 50 questions.

This researcher completed her second year project (Chinnes, 2016) by conducting a factor analysis of the Round 3 version of the Gross National Happiness Index (GNHI; Happiness Alliance, 2013), including all sixty-three questions from the round three version as well as

questions from other established measures that have been shown to be reliable and valid (Kroenke, K., Spitzer, R., & Williams, J., 2001; United Kingdom Department of Health, 2006; Victoria Foundation, 2010), to examine what domains underlie the concept of happiness. These additional items were selected to more fully assess happiness and things that have previously been correlated with happiness, such as mental health and life balance. The researcher developed this slightly "adapted" edition of the Round 3 version of the GNHI in order to further attain an overall picture of what the fundamental foundations of happiness are in a sample of students, faculty, and staff within this Midwestern university setting. The majority of items within the survey were assessed on a scale of one to six, where one means, "strongly disagree" and six means "strongly agree." Specifically, an exploratory factor analysis was conducted, including a scree test, an iterative principal axis solution, and a Promax oblique rotation. The results of that study showed that there were 11 primary factors of happiness: overall life satisfaction, mental health challenges, social support, time balance, environmental satisfaction, work satisfaction, healthy lifestyle, satisfaction with government, involvement in community, physical health, and finances (Chinnes, 2016).

While these results provide us with some more information about the construct of happiness, there is much more to do to strengthen its psychometric characteristics. Of note, these results were based on an adapted round three version of the survey. Since then, round four of the survey has been developed, therefore necessitating the study of that edition of the instrument. For this reason, this researcher's second year project provides some background information and further information about happiness, but is only a starting point. This then leads to the current study, which seeks to establish a base of discriminant validity for the round 4 version of the

GNHI, thus hoping to further our understanding of the dimensions of happiness, while also examining its relation to anxiety as measured by the STAI-AD (Spielberger et al., 1977).

Musikanski et al. (2017) stated, "The Happiness Alliance contends that the index, as it stands currently, has established face validity through a cocreative iterative development process, spanning several years of research by multiple academic and professional institutions" (p. 7). While Musikanski et al. (2017) provided information relating to the development and construction of the instrument, this researcher is not aware at this time of any further detailed information regarding the specific analyses and results relating to the psychometrics of the instrument. While it appears that validity research was conducted with Round 1 of the survey, we do not have details regarding the results, and thus cannot affirm that we have evidence of the validity of the instrument. In addition, there would need to be further validity work conducted on the Round 4 version of the survey to clarify the psychometric properties of this particular edition of the survey. This provides further support for this researcher's work, which aimed to provide a base for examining the discriminant validity of the instrument, and hoped to also further our understanding of the dimensions underlying happiness and, thus, add to the literature in this area.

State-Trait Anxiety Inventory for Adults (STAI-AD)

The concurrent criterion measure that was used for an initial assessment of the discriminant validity of the GNHI was the State-Trait Anxiety Inventory for Adults (STAI-AD; Spielberger et al., 1977). To this researcher's knowledge, the STAI-AD has never been assessed with the GNHI to measure specifically how state and trait anxiety relate to happiness, and to act as a concurrent, criterion, discriminant measure to work towards establishing the psychometric base of the GNHI, while contributing to the happiness literature.

Spielberger and Reheiser (2009) defined state anxiety (S-Anxiety) as the subjective feelings of apprehension, tension, worry, and nervousness, and the intensity of these subjective feelings at a particular time, with associated arousal or activation of the autonomic nervous system. Trait anxiety (T-Anxiety) was defined as differences in a person's anxiety-proneness that is relatively stable. This refers to differences between people in how often they tend to perceive stressful situations as threatening or dangerous, and how often they tend to react to such situations with the intensity of their S-Anxiety reactions elevating. T-Anxiety also tends to provide insight into how often and how intense past anxiety states have manifested, as well as the probability that similar S-Anxiety states will manifest again in the future. The stronger a person's T-Anxiety, the higher the likelihood that the individual will experience elevations in S-Anxiety that are more intense in dangerous or threatening situations (Spielberger et al., 1983).

More than 10,000 adults and adolescents have been tested throughout the test construction and validation process of the STAI in order to secure its empirical foundations (Spielberger & Reheiser, 2009). Norms for military personnel; medical, surgical, and psychiatric patients; working adults; prison inmates; and college and high school students are reported within the Test Manual for the STAI (Form Y; Spielberger et al., 1983). Spielberger (1989) reported that the STAI has been cited in over 14,000 archival studies, and has been adapted in 60 different dialects and languages since it was first introduced (Spielberger & Gorsuch, 1966).

Form Y of the STAI-AD, which this researcher used within her dissertation, contains 40 questions. For the first 20 questions, participants are instructed to respond based on how they feel "right now" and "at this moment" – assessing S-Anxiety; the second 20 questions ask participants to respond according to how they "generally feel" – assessing T-Anxiety (Spielberger et al., 1977).

Reliability of the STAI (Form Y). Test-retest stability coefficients for the T-Anxiety scale were determined for large groups of college and high school students, ranging from .73 to.86, over intervals of 20 to 104 days. As was expected, test-retest stability coefficients for the S-Anxiety scale had a median *r* of .33, which is relatively low. This is desirable psychometrically because varying situational factors around the time of testing influence the scores, and thus show a valid measure of state anxiety (Spielberger et al., 1983).

Because it is expected that state anxiety will fluctuate in intensity because of perceived current stress, test-retest stability coefficients were expectedly low. However, internal consistency reliability must also be assessed in considering the psychometric properties of the S-Anxiety scale. Spielberger et al. (1983) thus calculated alpha reliability coefficients as a measure of internal consistency for the S-Anxiety scale of the STAI (Form Y). When computed by Cronbach's (1951) modified Formula KR-20, with female and male college and high school students, military recruits, and working adults of large, independent samples, these were .86 or stronger, with an across groups median of .93 (Spielberger et al., 1983). The alpha coefficients of the T-Anxiety scale were also high for these groups, with a median alpha at .90 (Spielberger & Reheiser, 2009).

The alpha coefficients change slightly for the S-Anxiety scale when given under stressful conditions versus neutral conditions. The distribution of scores reach a normal distribution under stressful conditions and are positively skewed under neutral conditions. Thus, when given under conditions of greater perceived psychological stress, the alpha coefficients tended to be somewhat higher. For example, when given to a group of college males after a brief period of relaxation training, the S-Anxiety scale's alpha coefficient was .89. When given to the same group following a distressing film, where subjects were then instructed to answer according to

how they felt while viewing the film, the S-Anxiety scale's alpha reliability coefficient was .94 (Spielberger & Reheiser, 2009).

Validity of the STAI (Form Y). At each stage of the test development process, stringent validity criteria were required for each of the individual STAI items (Spielberger et al., 1983; Spielberger & Gorsuch, 1966; Spielberger et al., 1970). According to Spielberger et al. (1970), concurrent validity was utilized to select the items of the original STAI (Form X), based on what were widely used measures of anxiety at the time the STAI was initially developed, and its significant correlations with those. After further examination, Spielberger et al. (1970) found that there was not enough discriminant validity, as many of the items that had been adapted from the Taylor (1953) MAS were a reflection of depression rather than anxiety, indicating that the differentiation of anxiety from depression was not clear enough in items within the STAI (Form X). Examples of such items were, "I cry easily," and "I feel blue." The conceptual definitions of trait and state anxiety were improved after that, and the revised STAI (Form Y) was developed. With Form Y, the depression items were replaced with new items that better aligned with these more developed definitions, and the new items were found to have better discriminant validity than the previous ones (Spielberger et al., 1983).

The concurrent validity of the STAI (Form Y) was provided by high correlations with the ASQ and the MAS, ranging from .73 to .85; this provides evidence that all three measures do, indeed, measure trait anxiety. Spielberger et al. (1983) stated that the MAS is more contaminated with depression than the revised STAI (Form Y), and that the STAI (Form Y) takes about half the time to administer when compared to the ASQ, which has 43 items, and the MAS, which has 50 items. As far as the STAI (Form Y) S-Anxiety scale's correlations with the ASQ and the

MAS, they were similar to the correlations between the STAI (Form Y) Trait and State scales, and were less than .50 (Spielberger & Reheiser, 2009).

Spielberger et al. (1983) were also interested in demonstrating construct validity of the STAI (Form Y), for both the state and trait anxiety scales. Scores of S-Anxiety among college students were significantly lower when tested after relaxation training when compared to being tested after class periods that were non-stressful, and were also significantly higher during examinations. When compared to the college students within a relatively non-stressful class period, military recruits who participated in a highly stressful training program had substantially increased S-Anxiety scale scores, further demonstrating construct validity.

Regarding construct validity of the T-Anxiety scale, mean scores for various neuropsychiatric patient groups, for whom a major symptom was anxiety, were gathered and were found to be relatively high (American Psychiatric Association, 1994; Spielberger et al., 1983). When compared to "normal" subjects, all neuropsychiatric patient diagnostic groups, other than those with character disorders, had T-Anxiety scores that were substantially higher (Spielberger et al., 1983). It was also found that T-Anxiety scores were higher for general medical and surgical patients who had psychiatric complications than they were for those who did not have those complications, providing evidence that the T-Anxiety scale of the STAI (Form Y) can be utilized to identify emotional difficulties within non-psychiatric patients (Spielberger & Reheiser, 2009).

Procedures

A random sample of students and staff was selected from a Midwestern university to receive the survey. The panel of participants excluded faculty due to an expectation of a higher response rate from students and staff. International students were also excluded due to this not

being a homogenous group, and for generalizability purposes. All participants were provided informed consent before inclusion in the study. Inclusion criteria also included being 18 years of age or older. The GNHI, STAI-AD, and the demographics questions were completed confidentially through Qualtrics, an online system. Participants had the opportunity to enter into a drawing for ten possible winners of $10 Amazon gift cards. After data were collected, 10 winners were randomly chosen, and gift cards were distributed via email. At the end of the survey, participants were presented with a debriefing statement thanking them for their participation, providing information on whom they can contact if they have any questions, and providing them with links if interested in additional general information on happiness, mindfulness, and similar topics, phone apps relating to this, or the university counseling center. On average, it took participants 105.25 minutes to complete the survey, keeping in mind that they were given the ability to start the survey and complete it on a different day.

The Analytic Plan

This dissertation involved two major analyses, each with multiple parts, and where the second major analysis builds on the first one. This researcher conducted an exploratory factor analysis using pairwise deletion on the data from the GNHI in order to examine what dimensions underlie happiness, as it is addressed by this survey. Specifically, Velicer's (1976) original Minimum Average Partial (MAP) test and Velicer, Eaton, and Fava's (2000) revised Minimum Average Partial test (with partial correlations raised to the 4^{th} power rather than squared) were used to examine the number of factors. This was followed by principal axis factoring with a fixed number of factors based on MAP results and judgments of psychological meaningfulness (Cattell, 1966b; Gorsuch, 1983) to determine which items from the GNHI loaded onto which factors. This researcher then used a Promax rotation, assuming that the dimensions of happiness

would be related. Based on MAP and visual analysis of Scree results, 4, 5, and 6 factor solutions were rotated and examined in order to determine which solution yielded the clearest and most psychologically meaningful results.

Once the factor analysis of the GNHI was complete, this researcher examined Pearson correlations of factor scores from the most psychologically meaningful factor solution with the state anxiety and trait anxiety scales, followed by examining Pearson correlations of all 90 items from both surveys. Lastly, this researcher conducted a more sophisticated canonical correlation in order to examine how happiness and anxiety covary, based on the dimensions that emerged from the GNHI and the state and trait anxiety scales of the STAI-AD.

These procedures were done to address the following research questions: 1) What dimensions underlie the construct of happiness, as assessed by the GNHI? and 2) How are the dimensions of happiness, as determined by the factor analysis results on the GNHI, related to state and trait anxiety in a representative sample of students and staff of a Midwestern university, based on Pearson correlations and canonical correlations between the two? Answering these research questions will provide a base of empirical support for the discriminant validity of the GNHI, using the STAI-AD as the criterion variable. The prediction was that the dimensions of happiness would be inversely related to the dimensions of trait and state anxiety.

Anticipated Results

Because the nature of this research was exploratory, no formal hypothesis was offered. However, it was informally hypothesized or suspected that the dimensions of happiness from the GNHI will covary inversely or have low positive correlations with the state and trait anxiety scales from the STAI-AD. It was also the hope of this researcher that utilizing the STAI-AD as a concurrent, criterion measure would provide empirical support towards starting to establish the

discriminant validity for the GNHI through the likely existence of inverse covariations or low positive correlations between the dimensions of happiness of the GNHI and the state and trait anxiety scales of the STAI-AD. This researcher hoped that this study would provide a template for future validity studies of the GNHI.

CHAPTER 4: RESULTS

Exploratory Factor Analysis

In order to examine the dimensions of happiness, an exploratory factor analysis was conducted. Velicer's (1976) original Minimum Average Partial (MAP) test and Velicer, Eaton, and Fava's (2000) revised Minimum Average Partial test (with partial correlations raised to the 4^{th} power rather than squared) were examined, along with Cattell's Scree test (Cattell, 1966b), indicating the presence of a possible 4, 5, or 6 factor solution. Refer to Figure 4 in order to view the Scree plot. This researcher then utilized principal axis factoring with a fixed number of four, five, then six factors based on MAP and visual analysis of Scree results to determine which items from the GNHI loaded onto which factors. Promax rotation was used because the dimensions of happiness were related. The beta weights for the six-factor solution are shown in this results section, but the interested reader may see the beta weights for the four and five factor solutions in Appendices D and E. Meaningful findings were obscured in both the rotations of four and five factors, where they could be better explained conceptually by the 6-factor solution. The resulting factor correlations for the six primary factors can be found in Table 2, while Tables 3 – 8 show salient loadings for each primary factor. For each factor's beta weights, a cutoff of .40 was used. While factor names and salient loadings are shown in tables below, the meaning of each factor in the 6-factor solution will be discussed in further detail in the discussion section of this dissertation. The factor labels were chosen based on reviewing the items with the highest weights. However, undoubtedly the influence of previous analyses entered in the label choices as well. Items listed herein are utilized with permission of Musikanski et al. (2017); for further details, see Appendix G – Details Regarding Attribution and Copyright Information of the Gross National Happiness Index.

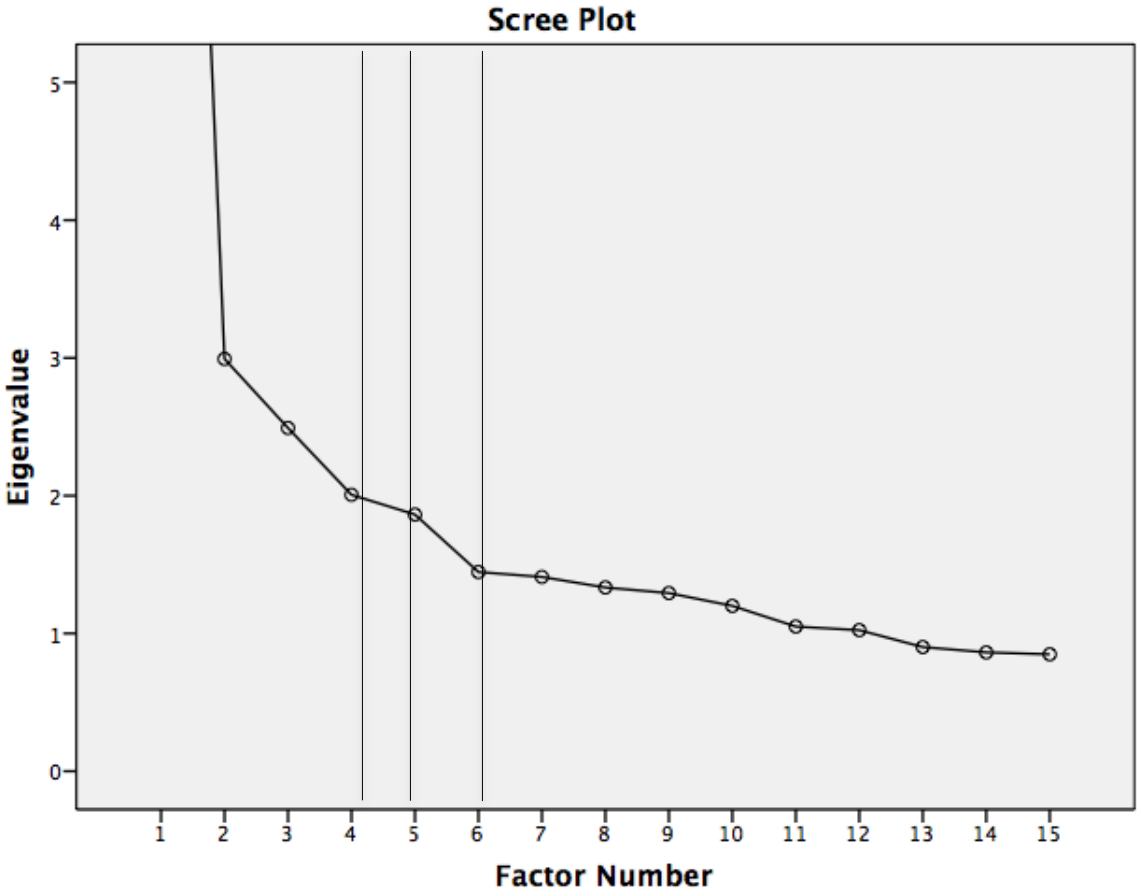

Figure 4. *Scree plot*

Table 2. *Factor Correlations: 6-Factor Solution*

I Positive Affect and Meaning	1.00					
II Social and Physical Environment	.55	1.00				
III Work Satisfaction	.50	.39	1.00			
IV Financial Satisfaction	.52	.44	.46	1.00		
V Government Satisfaction	.37	.48	.23	.27	1.00	
VI Time Balance	.18	.23	.19	.19	.18	1.00
	I	II	III	IV	V	VI

Table 3. *Factor 1: Positive Affect and Meaning*

0.92	Overall, to what extent do you feel the things you do in your life are worthwhile?
0.85	I lead a purposeful and meaningful life.
0.82	Overall, how satisfied are you with your life nowadays?
0.80	In general, I feel positive about myself.
0.79	I am engaged and interested in my daily activities.
0.79	I am optimistic about my future.
0.76	Most days, I feel a sense of accomplishment from what I do.
0.71	How satisfied are you with your personal relationships?
0.71	Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?
0.70	Overall, how happy did you feel yesterday?
0.66	Please indicate how much of the time during the past week you felt loved.
0.64	How satisfied were you with your ability to perform your daily living activities?
0.57	People in my life care about me.
-0.54	Please indicate how much of the time during the past week you felt lonely.
0.52	Please indicate how much of the time during the past week you had a lot of energy.
0.49	In general, I would say my health is….

Table 4. *Factor 2: Social and Physical Environment*

0.72	In your neighborhood or community, how satisfied are you with your access to artistic and cultural activities?
0.62	In your neighborhood or community, how satisfied are you with your access to sports and recreational activities?
0.60	In your neighborhood or community, how satisfied are you with your access to activities to develop skills through informal education?
0.54	How satisfied are you with the opportunities that you have to enjoy nature?
0.54	Please tell us how many of the following people you trust: your neighbors.
0.51	How satisfied are you with the air quality in your environment?
0.48	Please tell us how many of the following people you trust: businesses in your community.
0.48	How satisfied are you with the efforts being made to preserve the natural environment in your neighborhood?
0.43	Imagine that you lost a wallet or purse that contained two hundred dollars. Please indicate how likely you think it would be to have all of your money returned to you if it was found by someone who lives close by.

Table 5. *Factor 3: Work Satisfaction*

0.79	All things considered, how satisfied are you with your current work life? (Note: if you work or volunteer at more than one job, you should answer about the job you spend the longest time working at.)
0.64	I am allowed to decide how to go about getting my job done.
0.62	The conditions of my job allow me to be about as productive as I could be.
0.56	How much of the time do you find your current work life interesting?
0.52	Considering all my efforts and achievements in my job, I feel I get paid appropriately.
0.43	How satisfied are you with the balance between the time you spend on your job and the time you spend on other aspects of your life?

Table 6. *Factor 4: Financial Satisfaction*

0.76	In general, how much stress do you feel about your personal finances?
0.75	How frequently do you find yourself just getting by financially and living paycheck to paycheck?
0.73	I have enough money to buy things I want.
0.60	Please indicate how frequently you have had the following experiences in the past 12 months: You ate less because there wasn't enough food or money for food.

Table 7. *Factor 5: Government Satisfaction*

0.77	Please indicate how much confidence you have in the following organizations: Local government.
0.55	The public officials in my city or town pay attention to what people think.
0.50	Please indicate how much confidence you have in the following organizations: National government.
-0.42	Corruption is widespread throughout the government in my city or town.

Table 8. *Factor 6: Time Balance*

0.60	Here are some statements about how things are going in your life. When indicating your agreement with each statement, please think specifically about how things were for you over the past week: I have had plenty of spare time.
0.45	In a typical week, how much of your time are you able to spend doing the kinds of things that you enjoy?
-0.45	Here are some statements about how things are going in your life. When indicating your agreement with each statement, please think specifically about how things were for you over the past week: My life has been too rushed.

Zero Order Correlations

After examining each factor solution and determining the six-factor solution yielded the most psychologically meaningful results, this researcher then analyzed Pearson correlations of the six factor scores with the state and trait anxiety scales in order to examine the relationships among them. These results can be seen in Table 20 below. Of note, all of these results were significant and showing the expected high negative correlations between the factors of happiness with state and trait anxiety. Due to the rather large sample size in this study, shared variance *r*-squared effect sizes were also examined, which can be seen in Table 21 below. Factors one through four and SA and TA appeared to be contributing most to the overall results. This was followed by examining Pearson correlations of all 90 items (all 50 items from GNHI and all 40 items from STAI-AD) in order to examine patterns among individual items. Overall, these also showed the expected high negative correlations between GNHI items and STAI-AD items. The interested reader may find these results in Table 22 in Appendix F.

Table 20. *Pearson Correlations: 6 Factor Scores with State Anxiety and Trait Anxiety*

	F1	F2	F3	F4	F5	F6	SA	TA
F1	1							
F2	.603**	1						
F3	.556**	.457**	1					
F4	.570**	.506**	.538**	1				
F5	.426**	.570**	.271**	.336**	1			
F6	.211**	.291**	.250**	.248**	.245**	1		
SA	-.755**	-.525**	-.515**	-.637**	-.376**	-.328**	1	
TA	-.804**	-.540**	-.481**	-.636**	-.359**	-.286**	.866**	1
	F1	F2	F3	F4	F5	F6	SA	TA

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

Legend. F1 = Positive Affect and Meaning, F2 = Social and Physical Environment, F3 = Work Satisfaction, F4 = Financial Satisfaction, F5 = Government Satisfaction, F6 = Time Balance, SA = State Anxiety, TA = Trait Anxiety.

Table 21. *r^2 Effect Sizes: 6 Factor Scores with State Anxiety and Trait Anxiety*

	F1	F2	F3	F4	F5	F6	SA	TA
F1	1							
F2	.364*	1						
F3	.309*	.209*	1					
F4	.325*	.256*	.289*	1				
F5	.181	.325*	.073	.113	1			
F6	.045	.085	.063	.062	.060	1		
SA	.570**	.276*	.265*	.406*	.141	.108	1	
TA	.646**	.292*	.231*	.404*	.129	.082	.750***	1
	F1	F2	F3	F4	F5	F6	SA	TA

Legend. F1 = Positive Affect and Meaning, F2 = Social and Physical Environment, F3 = Work Satisfaction, F4 = Financial Satisfaction, F5 = Government Satisfaction, F6 = Time Balance, SA = State Anxiety, TA = Trait Anxiety.

Canonical Correlation

This researcher then conducted a canonical correlation analysis using the two anxiety scales as predictors of the six happiness factors in order to evaluate the multivariate shared relationship between the two variable sets (whether and in what ways the scales from the STAI-AD relate to the factors of the GNHI). The analysis yielded two functions with squared canonical correlations (R^2_C) of .727 and .040. All together, the full model across all functions was statistically significant using the Wilks's $\lambda = .263$ criterion, $F(12, 960.00) = 76.144$, $p < .001$. We can thus reject the null hypothesis that there was no relationship between the variable sets, concluding that there likely was a relationship. However, we do not yet know about the magnitude of the relationship and thus must look at effect size. By taking $1 - \lambda$, we will be able to determine the full model effect size in an r^2 metric, because Wilks's λ represents the variance unexplained by the model. For this set of two canonical functions, the r^2 type effect size was .737, indicating that the full model explained a substantial portion, about 74%, of the variance shared between the variable sets. The full model was thus both significant and had a rather large effect size.

As a part of the dimension reduction analysis, we are next able to test the hierarchical arrangement of functions for statistical significance. As noted, the full model (Functions 1 to 2) was statistically significant. Function 2 to 2 was also statistically significant, $F(5, 481.00) = 3.676$, $p = .003$.

In examining the R^2_C effects, only the full model (Functions 1 to 2) warrants interpretation for this study, as it explains 72.7% of shared variance, while Functions 2 to 2 only explained 3.7% of the remaining variance in the variable sets after extraction of the prior functions.

We can thus far say that due to the statistical significance and effect size, there was a noteworthy relationship between our variable sets. This relationship was captured largely by the first function within the canonical model. We can now turn to evaluating what variables are contributing to the relationship between the variable sets within the first function. For this study, we are interested in learning what anxiety variables were related to what happiness variables in this multivariate analysis and in what ways.

Table 23 shows the standardized canonical function coefficients (weights), structure coefficients (correlations), and squared canonical structure coefficients (effect sizes) for Function 1. The standardized canonical function coefficients (*Stan. Coef*) are the standardized weights for Function 1 for the criterion variable set (F1 through F6) and the predictor variable set (SA and TA). The structure coefficients (r_s) is the Pearson *r* correlation between an observed variable and the canonical function scores for the variable's set (Sherry & Henson, 2005); here we examine this for the criterion and predictor variable sets (the observed variables) with the synthetic variable created from all the criterion and predictor variables via the linear equation. The squared canonical structure coefficients (r^2_s) are the structure coefficients squared and in percentage

format. This indicates the proportion of variance an observed variable (F1 through F6 and SA and TA) shares linearly with the synthetic variable generated from the observed variable's set, and it can be thought of as the same as any other r^2-type effect size (Sherry & Henson, 2005).

Table 23. *Canonical Solution for Anxiety Predicting Happiness for Function 1*

	Function 1		
Variable	*Stan. Coef*	r_s	r^2_s (%)
F1 - Positive Affect and Meaning	-.761	-.952	90.63
F2 - Social and Physical Environment	-.011	-.648	41.99
F3 - Work Satisfaction	.036	-.596	35.52
F4 - Financial Satisfaction	-.323	-.771	59.44
F5 – Government Satisfaction	.023	-.442	19.54
F6 - Time Balance	-.137	-.368	13.54
SA (StateAnx)	.388	.946	89.49
TA (TraitAnx)	.645	.981	96.24

Note. Structure coefficients (r_s) greater than |.45| are underlined. *Stan. Coef* = standardized canonical function coefficients (weights) ; r_s = structure coefficients (correlations); r^2_s = squared canonical structure coefficients.

In viewing the Function 1 structure coefficients (correlations), we see that the most relevant criterion variables were primarily Factors 1 through 4. This conclusion was supported mainly by the squared structure coefficients (effect sizes), indicating a larger effect size for these happiness variables. These happiness variables also tended to have the larger standardized canonical function coefficients (weights). An exception involves F2 and F3, which had low function coefficients (weights) but large structure coefficients (correlations) and squared canonical structure coefficients (effect sizes). Sherry and Henson (2005) state that typically in regression equations, it is assumed that variables would not be correlated with one another. However, within this study, the happiness dimensions are correlated with one another. They stated that when this occurs, this then likely means that the linear equation which utilized the weights to combine the criterion variables on Function 1 only modestly incorporated the variance

of the factors with the lower weights (in this case F2 and F3), when those variables could have actually contributed substantially to the created synthetic variable. In this case, this is supported through examining the correlations and effect sizes. Furthermore, the structure coefficients (correlations) of all of these variables had the same sign, indicating that they were all related to one another.

Regarding the predictor variable set in Function 1, both state and trait anxiety variables contributed to the predictor synthetic variable. This can be seen by the very large structure coefficients (correlations), squared structure coefficients (effect sizes), and the modest to large standardized canonical function coefficients (weights). Because the structure coefficient (correlation) for both was positive, while each of the structure coefficients for the criterion variables was negative, both state and trait anxiety were highly inversely related to all happiness factors and vice versa. These results were generally supportive of the theoretically expected relationships between anxiety types and happiness factors, and this researcher has labeled Function 1 as "Happiness and Anxiety" (for rationale, see Discussion section).

CHAPTER 5: DISCUSSION

The current study sought to contribute to the research literature on happiness by examining the dimensions that underlie the construct of happiness, as assessed by the Gross National Happiness Index (GNHI; Musikanski et al., 2017). This study also examined the relationship of the dimensions of happiness to state and trait anxiety, as assessed by the State-Trait Anxiety Index for Adults (STAI-AD; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1977), to examine patterns of covariation and better understand any relationships that exist. The ultimate goal and fundamental form of this project was to contribute to the psychometric base of the GNHI by assessing the dimensions it measures and to utilize the STAI-AD as an established criterion measure to search for a base of evidence of its discriminant validity.

Because this study was exploratory, no formal hypotheses were formulated; however, this researcher anticipated either low positive correlations or high inverse relationships between the two instruments. In order to address the purposes of this study, data were gathered from a sample of students and staff within a Midwestern university. Overall, the results of the various analyses indicated a six-factor solution as the most psychologically meaningful. In addition, high inverse relationships were found between the dimensions of happiness and state and trait anxiety.

Four vs. Five vs. Six Factors

The various methods of determining the number of factors to rotate (i.e., MAP and visual analysis of Scree results) suggested rotating 4, 5, or 6 factors may provide a satisfactory factor solution. Meaningful findings were obscured in the rotations of four and five factors, where they could be better explained conceptually by the six-factor solution. Therefore, the six-factor solution was deemed the clearest and most psychologically meaningful. Rotation of four factors collapsed Work and Financial Satisfaction into one factor and collapsed Government items into a

Social and Physical Environment factor. Rotation of five factors had some merit, but still collapsed the Government items into a Social and Physical Environment factor. The six-factor solution clearly delineated each factor and had no overlap of items. The final decision was to rotate six factors as it provided the clearest solution in terms of simple structure and, ultimately, psychological meaningfulness.

Note Regarding Chinnes's (2016) 11-Factor Solution, Musikanski et al.'s (2017) 12-Factor Solution, and Chinnes's (2019) Six-Factor Solution

Here we will review previous extant examinations of the factor structure of the GNHI, specifically the results of Chinnes's (2016) examination of an adapted Round 3 version of the GNHI, Musikanski et al.'s (2017) Round 4 factor analytic results, and the factor analytic results of this study's examination of the Round 4 version of the GNHI to determine if there are any similarities in factors.

This researcher's second year project provided some background empirical information on an "adapted" Round 3 version (Round 3 plus additional questions of relevance to this study) of the GNHI (Happiness Alliance, 2013). After assessing a scree test and principal axis factoring with Promax rotation, Chinnes (2016) identified an 11-factor solution: Overall Life Satisfaction, Mental Health Challenges, Social Support, Time Balance, Environmental Satisfaction, Work Satisfaction, Healthy Lifestyle, Satisfaction with Government, Involvement in Community, Physical Health, and Finances. However, that study examined an adapted Round 3 version of the GNHI, including all 63 items from Round 3 of the GNHI plus items from additional reliable and valid established measures (Kroenke, K., Spitzer, R., & Williams, J., 2001; United Kingdom Department of Health, 2006; Victoria Foundation, 2010), to examine what domains underlie the

concept of happiness. The additional items were selected as a means to also assess things that have previously been correlated with happiness, such as mental health and life balance.

While this provides some background information, it does not provide us with information on what the factors would be on the round 3 version of the survey without the additional items that were added. In addition, it would still be necessary to evaluate the factors of the Round 4 version of the GNHI, as this is the most current version of the survey; this was addressed in this researcher's current study.

Musikanski et al. (2017) reported that the Round 4 version of the GNHI measures the following 12 domains in the following order: Cantril Ladder; Satisfaction with Life; Psychological Well-Being; Health; Time Balance; Lifelong Learning, Arts, and Culture; Community; Social Support; Environment; Governance; Standard of Living/Economy; and Work. See Happiness Alliance (2014a) and Musikanski et al. (2017) for a detailed listing of each question within the survey and the sources of each question.

While Musikanski et al. (2017) reported these dimensions of happiness for the Happiness Alliance's Round 4 version of the GNHI, the exact numerical data relating to these results is unclear. Musikanski et al. (2017) provided information relating to the development and construction of the instrument as a whole, but this researcher is not aware at this time of any further detailed information regarding the specific analyses and results relating to the psychometrics of the instrument. It appears that validity research was conducted with Round 1 of the survey; however, Musikanski et al. (2017) stated the laboratory that conducted this research did not provide them with the numerical results, but "provide[d] assurance of validity determined by their own analyses" (p. 11). Therefore, this researcher cannot affirm that there is quantitative evidence of validity of the instrument at this time. In addition, there would need to be further

validity research conducted on the current Round 4 version of the survey to examine the psychometric properties of that particular version of the survey.

This provided support for this researcher's work, which utilized the current Round 4 version of the GNHI and aimed to provide a base of evidence of discriminant validity, while furthering our understanding of the dimensions underlying happiness to add to the literature in these areas. Details of the analyses conducted and numerical results can be found in the Results chapter of this dissertation. This researcher came to the conclusion that the most psychologically meaningful results provided evidence of a six-factor solution with these dimensions of happiness: Positive Affect and Meaning; Social and Physical Environment; Work Satisfaction; Financial Satisfaction; Government Satisfaction; and Time Balance.

A potential reason why Musikanski et al. (2017) and this researcher report differing overall numbers regarding their factor solutions could be a result of the factor analytic methods used. It is unclear what exact methods Musikanski et al. (2017) utilized. This researcher's methods can be found in the Methods and Results chapters of this dissertation. However, this researcher has observed some reasonable degree of overlap of her results and the results of Musikanski et al. (2017). For example, both researchers found evidence of factors relating to the areas of work, finances, government, and time balance. While Musikanski et al. (2017) report evidence of factors including Cantril Ladder, Satisfaction with Life, Psychological Well-Being, and Health, this researcher reports a factor called Positive Affect and Meaning, which includes elements of each of those. In addition, while Musikanski et al. (2017) reported evidence of factors of Lifelong Learning, Arts, and Culture; Community; Social Support; and Environment, this researcher found evidence of a factor called Social and Physical Environment, which includes elements of all of those. While the numbers of factors in each researcher's factor

solutions varies, the content of the factors would appear to be largely similar, providing a base of evidence of the existence of these dimensions of happiness, with this research providing evidence of its numerical results and details of methods utilized.

Chinnes (2019) Six-Factor Solution and Relations to Existing Literature

This section will begin with a succinct report of the findings of the Six-Factor Solution, which will be followed by a more detailed review devoted to the possible meaning of each factor and its association with the extant literature in relevant areas of study.

As noted in the prior section, within this dissertation, this researcher found evidence supporting a six-factor solution for the Round 4 version of the GNHI (Musikanski et. al, 2017). The resulting six dimensions of happiness include: Positive Affect and Meaning; Social and Physical Environment; Work Satisfaction; Financial Satisfaction; Government Satisfaction; and Time Balance. This researcher chooses to think of the first two factors as overall aspects of happiness, and factors three through six as avenues to happiness.

Factor one, Positive Affect and Meaning, includes whether one feels a sense of purpose and meaning in life. It includes feeling positive about oneself, optimistic about the future, and satisfied with personal relationships. It also alludes to feeling one has good physical health. The second factor, Social and Physical Environment, includes one's satisfaction with their access to various community activities (artistic and cultural activities, sports and recreational activities, and activities to develop skills through informal education). It also involves one's satisfaction with opportunities to enjoy nature, with the air quality in one's environment, and with efforts being made to preserve the natural environment in one's neighborhood. In addition, it includes trusting one's neighbors and businesses in one's community. The third factor found within the results of this dissertation, Work Satisfaction, includes whether one is satisfied with their current

work life, feels they have autonomy in their job, feels they can be productive in their job, feels they get paid appropriately, and feels some sense of work-life balance. Factor four, Financial Satisfaction, is about one's perception of their finances, related stress, whether they have enough for necessities such as food, and whether they can occasionally buy things they want. The fifth dimension, Government Satisfaction, includes whether one feels confident in their local and national government, whether they feel public officials in their city/town pay attention to what people think, and whether they feel corruption is widespread throughout the government in their city/town. The last dimension found within this study, Time Balance, includes whether one feels they have spare time, feels rushed in life, and are able to spend time doing things they enjoy.

This study's first factor, Positive Affect and Meaning, includes an aspect of feeling satisfied with one's physical health. Previous research has found that increased happiness tends to bring about increased physical and mental health for people (Lyubomirsky et al., 2005). Piqueras et al. (2011) also found that happiness has been correlated with being more physically active. These are examples of research on variables associated with or correlated to happiness, whereas this researcher's study provided evidence of satisfaction with physical health being an aspect of an individual's happiness. Related to other aspects of this study's Positive Affect and Meaning dimension, Veenhoven (2015) provided evidence that happiness has been correlated with meaning of life, physical health, and mental health. In addition, researchers Neugarten et al. (1961) indicated that necessary conditions for well-being are finding meaning in life and having a positive image about oneself.

In line with this study's second dimension, Social and Physical Environment, past research has found happiness to be correlated with individuals reporting being more sociable, energetic, altruistic, having more fulfilling friendships, more fulfilling marriages, and even a

longer life (Martin, 2005; Norrish & Vella-Brodrick, 2008). Happiness has been correlated previously with amount of social support, one's satisfaction with their environment, and satisfaction with their local community (Veenhoven, 2015). Yoon (2006) suggested that increased life satisfaction in the general population has been associated significantly with social network support.

The third dimension of happiness found within this dissertation was Work Satisfaction. Multiple researchers within the industrial organizational psychology literature have found happiness to be correlated with higher sales, greater productivity at work, and greater success (Hoggard, 2005; Lyubomirsky et al., 2005). Related to this third dimension, Work Satisfaction, as well as this study's sixth dimension, Time Balance, existing literature shows that happiness has been correlated with work-life balance (Veenhoven, 2015).

Buettner (2017) wrote an article in *The National Geographic* about a Gallup poll conducted in 2015-2016 based on surveys in over 140 countries of 147,000 adults. He wrote that the Gallup survey was divided into five dimensions that are associated with happiness: Social, Purpose, Physical, Community, and Financial. The three places that had the highest happiness scores within these data were: Costa Rica, Denmark, and Singapore. The dimensions of the Gallup survey would appear to be similar to this researcher's first, second, and fourth dimensions (Positive Affect and Meaning, Social and Physical Environment, and Financial Satisfaction). The labels they use appear to be similar, but we do not have access to their exact items to be sure. While this provides evidence of some potential factor analytic work examining dimensions of happiness, this researcher's study aimed to further explore dimensions of happiness and provide a psychometric base of evidence of discriminant validity of the GNHI, a freely available happiness survey available online.

This researcher did not find much existing literature on government satisfaction being a dimension of or correlate of an individual's happiness. Of note, there has been a shifting idea over time that governments should focus on gross national happiness (GNH) rather than only gross domestic product (GDP); this can be seen within the Kingdom of Bhutan (Ura et al., 2012). Musikanski et al. (2017) wrote that Bhutan's Gross National Happiness Commission (composed of high-level officials, Secretaries of all ministries, and the Prime Minister) developed a mandate "to ensure all development policies and plans are formulated and implemented in line with the principles of GNH" (p. 5). In addition, a British Broadcasting Corporation poll in 2006 showed that 85% of the British agree that governments should be focused on achieving happiness within their people, rather than achieving the greatest wealth (BBC, 2006). Veenhoven (2015) stated that happiness has become a rising topic of interest to policy makers and is a topic appearing on public agendas, along with sustainable economic development.

In 2012, an International Conference on Happiness and Wellbeing took place at the United Nations headquarters in New York, leading to the first *World Happiness Report* being published (Thinley, 2012). Since then, the importance of measuring happiness as a goal of public policy and to determine social progress has risen. The Organization for Economic Cooperation and Development (OECD; where the governments of 34 democracies with market economies work with one another, along with 70 non-member economies to promote economic prosperity, growth, and sustainable development), committed itself in 2016 "to redefine the growth narrative to put people's well-being at the center of governments' efforts" (Strategic Orientations of the Secretary-General, 2016, p. 5). As a result of the 2012 UN conference, on June 2014, the General Assembly voted to designate March 20th of each year as the International Day of Happiness, and this is the same day the World Happiness Report (an annual publication of UN Sustainable

Development Solutions Network) is launched each year (Helliwell et al., 2017). Because this is all a fairly recent shift in governments' perspectives of what should be measured (GNH as opposed to only GDP/economic sustainability), this could explain why there does not appear to be much of a history of existing literature on the topic of one's individual happiness including an aspect of their satisfaction with their government. This could be an area to examine further in future research.

According to Maslow's Hierarchy of Needs, people must feel safe and have their basic needs such as safety, food, clothing, and shelter met, before they can move up to obtain areas of love and belonging, self-esteem, positive affect, and self-actualization and purpose (Fave et al., 2011). Related to this, the current researcher's data show evidence of having enough money for basic necessities such as food as being part of a dimension of happiness called Financial Satisfaction, this study's fourth factor. The importance of feeling love and belonging relates to this study's second factor, Social and Physical Environment. Feeling a sense of self-esteem, self-actualization and purpose relates to this study's first factor, Positive Affect and Meaning.

Aristotle's idea of *eudaimonia* includes finding purpose and meaning in life, along with having friendships, wealth, and health, with meaning being the most important (Fave et al., 2011). This relates to this study's first dimension of happiness, Positive Affect and Meaning, second dimension, Social and Physical Environment, and fourth dimension, Financial Satisfaction.

In addition, Positive Psychology proposes that happiness includes the areas of meaning, engagement with others, and pleasure (Peterson & Seligman, 2004; Seligman, 2002), and that happiness occurs in its greatest form when people live a life including all three – with meaning and engagement with others as the most important, followed by pleasure (Peterson et al., 2005;

Vella-Brodrick et al., 2009). This relates to this study's first, second, and sixth dimensions – Positive Affect and Meaning, Social and Physical Environment, and Time Balance.

This study's sixth dimension, Time Balance, includes whether one feels rushed in life or as though they have spare time, and whether they feel they have time to do things they enjoy. This also relates to Aristippus's hedonic view on happiness, except that Aristippus's viewpoint was that the most important thing was living a life including as many momentary pleasures as possible and as few pains as possible (Fave et al., 2011). This is in contrast to the viewpoints of Aristotle and Positive Psychology, which view having meaning in one's life as the most important thing (Fave et al., 2011; Peterson & Seligman, 2004; Peterson et al., 2005; Seligman, 2002; Vella-Brodrick et al., 2009), which this study's data also support, while also balancing that with some things one enjoys along with the other dimensions found in this study.

Review of Zero Order Correlations and Canonical Correlational Analyses and Relation to Existing Literature

The results of this study showed evidence of high negative correlations between the six dimensions of happiness with state and trait anxiety, with the correlations of factors one through four with state and trait anxiety being the highest. Correlations of all 90 items (all 50 items from the GNHI and all 40 items from the STAI-AD) overall also showed the expected high negative correlations between the GNHI items and STAI-AD items, providing further evidence of discriminant validity. The canonical correlation results also confirmed the existence of a relationship between happiness and anxiety variables. Overall, these results also showed a high inverse relationship between happiness and anxiety variables, with factors one through four contributing the most.

Research relating to these findings includes the work of Watson and Tellegen (1985), as this was one of the few psychological paradigms that recognized a polarity of emotions ranging from happiness (Pleasantness) to unhappiness (Unpleasantness). The two-factor structure of affect (Watson & Tellegen, 1985) can be seen as Figure 1 in Appendix A of this dissertation. These researchers found two main bipolar dimensions – positive affect (high and low positive affect) and negative affect (high and low negative affect). When conducting additional rotations on factors, they also found a second two-factor structure, including bipolar factors of pleasantness (pleasantness and unpleasantness) and engagement (strong engagement and disengagement). The Pleasantness/Unpleasantness dimension was later renamed Happiness/Unhappiness (Tellegen et al., 1999a, 1999b).

Watson and Tellegen (1985) also cited Hall (1977) who found that anxiety was highly related to negative affect (high negative affect), while depression was related to positive affect (low positive affect). Of note, in their model, the exact opposite of happiness is not anxiety; it is unhappiness. However, the unhappiness (Unpleasantness) realm resides only one octant away from High Negative Affect (anxiety). Ben-Porath (2012) stated that people who fall in the Unpleasantness (unhappy) realm are thought to be demoralized – a combination of anxiety and depression and equidistant from high negative affect (anxiety) and low positive affect (depression) in Watson and Tellegen's (1985) structure. While this does not depict a perfect inverse relationship between anxiety and happiness, it showed that they were close to one another within Watson and Tellegen's (1985) circumplex model of mood. This provided further theoretical support for this study, which examined the direct relationship of anxiety to happiness, and specifically how state and trait anxiety related to happiness. While this provides some theoretical support, additional support for why studying the direct relationship of happiness to

anxiety is both psychologically meaningful and important psychometrically to further work towards psychometrically sound practical utility can be seen in the sections that follow.

Base of Discriminant Evidence of Validity

The primary purpose of this study was to contribute to the happiness literature by examining dimensions of happiness and buttressing the psychometric base of a commonly used, freely available online instrument measuring happiness – the Gross National Happiness Index (GNHI; Musikanski et al., 2017). While this instrument has face validity, further work was needed on the Round 4 version of the survey to examine aspects of its psychometric properties. The results of this researcher's study provide a base of evidence of its discriminant validity, owing to the high negative correlational relationship between the dimensions of the GNHI and scales of the well-established State-Trait Anxiety Index for Adults (STAI-AD; Spielberger et al., 1977). Future studies will need to replicate this study and ones like it to provide additional evidence of discriminant validity. Future studies also should further examine the survey's reliability and other forms (as well as the same form) of validity as much as possible, before we could confidently claim that the survey has a psychometrically sound foundation.

An example of research supporting the need to examine this includes Urbina (2014), who stated that validation research is of a multifaceted nature, with many possible routes to validation. One such route is differentiation, or establishing evidence of discriminant validity. Urbina (2014) wrote, "discriminant evidence of validity, based on patterns of divergence such as consistently low correlations [or moderate to high negative correlations] between measures that are supposed to differ, … may be used to substantiate the identities of the constructs they tap" (p. 195). In order to provide an example of this, Urbina (2014) cited the low correlation (r = .06) between the MMPI-2 Depression scale and the Bipolar, Manic scale of the MCMI-III, as well as the low

correlation (r = .08) between the Hypomania scale of the MMPI-2 and the Major Depression scale of the MCMI-III (Millon et al., 1994). Both of these examples provided evidence that bipolar disorder appears to be independent of clinical depression within those measures.

Additional examples of prior research examining discriminant validity are cited within this dissertation. For example, Diener et al. (1985a) found that the Satisfaction With Life Scale (SWLS) had a negative correlation (r = .41) with Derogatis et al.'s (1974) symptom checklist of psychopathology; this showed discriminant evidence of validity. In a similar manner, the SWLS was found to have a negative correlation (r = -.48) with the Eysenck Personality Inventory Neuroticism scale (Diener et al., 1985a; Eysenck & Eysenck, 1964). Psychiatric symptoms and neuroticism were thus found to be negatively related to a sense of life satisfaction. These moderately large negative correlations provide discriminant evidence of validity, and show that the constructs being measured covary inversely in psychologically meaningful ways.

This researcher's study also provides initial evidence of discriminant validity of the Round 4 version of the GNHI through using the STAI-AD as the established criterion variable. In doing this, this study found results of high negative correlations between the dimensions of happiness within this researcher's data on the GNHI with the state and trait anxiety scales of the STAI-AD, showing that the dimensions of happiness covary inversely in psychologically meaningful ways with both state and trait anxiety. This researcher hopes that additional psychometric studies will be completed in the future that will increase our confidence that the GNHI is an instrument with a psychometrically sound foundation.

Practical Considerations and Relations to Clinical and Community Psychology

The creators of the GNHI, Musikanski et al. (2017), suggested that "the survey and its data can serve: group assessment, individual assessment, identification of vulnerability in

populations, fundraising, policy and program guidance, resource allocation, awareness raising, education and outreach, life-skill development, academic research, community engagement, and program or project evaluation, among other functions" (p. 13). This suggests practical utility of the GNHI, and provides evidence of the relation of this study to both clinical and community psychology.

Specifically, this study relates to the community psychology competency of prevention and health promotion within communities, defined as "the ability to articulate and implement a prevention perspective, and to implement prevention and health promotion community programs" (Dalton & Wolfe, 2012). Musikanski et al. (2017) suggest the GNHI can be used as a means of improving the happiness of whole communities, guiding program development and implementation, program evaluation, and identifying vulnerability in populations. It is this researcher's opinion, then, that this study not only relates to the community psychology perspective of prevention and health promotion, but also to the competencies of: ecological perspectives; empowerment; program development, implementation, and management; community leadership and mentoring; community development; community organizing and community advocacy; community education, information dissemination, and building public awareness; participatory community research; and program evaluation. See Dalton and Wolfe (2012) for a full description of each of these community psychology competencies.

This study also relates to the field of clinical psychology in numerous ways. The American Psychological Association (APA, 2018) defines clinical psychology as, "the psychological specialty that provides continuing and comprehensive mental and behavioral health care for individuals and families; consultation to agencies and communities; training, education, and supervision; and research-based practice" (para. 1). In this researcher's opinion,

clinical psychologists can take a positive psychology perspective and impact their client's mental health challenges, as well as their happiness levels. This also takes a holistic approach on the individuals, families, and groups we are treating, with the idea that seeing the whole person will increase the likelihood of improving overall mental health and happiness, rather than simply eliminating some deficit. Depending on people's presenting problems, the current researcher, when in a therapeutic role, regularly asks active clients to rate their happiness and anxiety on a 1-10 scale. This embraces the principles of positive psychology in the therapeutic process and contributes to focusing on the whole person.

As a student who embraces the philosophy of a clinical-community graduate program, the CC worldview easily appears to be complementary. Each view complements the other, and we can use that framework within our work with individuals and families. We clinical psychologists can take a community psychology perspective within our work, working not only with the individuals and families in our offices, but also through consulting with agencies and communities regarding program development and evaluation, and empowering, training, and educating other clinical psychologists on providing research-based practice where we can take this community psychology and positive psychology theoretical approach when working with our clients.

The APA Commission on Accreditation (2018) also emphasizes the importance of the study of emotion/mood/affect in professional psychology programs, providing further support of the range of emotions/moods/affect being important to the clinical and community psychologist. It is also important for clinical and community psychologists to have psychometrically sound instruments when measuring various aspects of emotions/moods/affect for therapy and evaluation purposes. This researcher's study provides evidence of a base of psychometric

support of discriminant validity for the GNHI (Musikanski et al., 2017), which is the only survey of its kind that is freely available online.

Clinical psychologists also work on happiness/life satisfaction/well-being when they work with individuals on the areas such as behavioral activation (which seeks to increase a person's activities that may bring enjoyment versus staying immobile and in a depressive state) or committed action to values (learning and defining what one values and finds meaningful in their life and breaking down ways they can work towards those values in actionable steps in everyday life through committed action). These could be seen as related to this study's sixth and first dimensions of happiness, respectively (i.e., Time Balance, Positive Affect and Meaning). In this researcher's opinion, Cognitive Behavioral Therapy's cognitive reframing could be seen as related to dimension one of this study as well (i.e., Positive Affect and Meaning), in that cognitive reframing often results in improved internal schemas about oneself and improved moods and affect over time as a result.

Therapy often focuses on areas such as improving people's social supports, as well as potentially learning improved methods of navigating one's work environment and finances. At times, therapy may also focus on distress relating to changing government structures and politics. These subjective experiences of this researcher when in a therapeutic role also relate this study to the field of clinical psychology. As the GNHI gains an expanding empirical base of evidence of reliability and validity of the Round 4 version of the survey, the Round 4 version of the GNHI could potentially be utilized as a pre-, mid-, post- outcome measure that therapists could utilize as a method of examining progress, areas to potentially focus on in therapy, and measuring outcomes of therapy and how various dimensions of their happiness improved. This would be

used in addition to various mental health measures as a means of measuring pre-therapy functioning, progress, and outcomes/therapeutic impact on happiness and mental health.

Limitations

While this study had a rather large sample size, it was a sample of university students and staff. This means that the results speak to the happiness dimensions and relation of those dimensions to state and trait anxiety specifically for that sample. While these results may be similar to results found in other university samples, the results do not automatically generalize to the larger population, and they do not provide information on what the details of happiness and anxiety may entail in general community or psychiatric populations, for example. Further studies would need to examine additional iterations of this study in a variety of samples to be able to more readily generalize results to larger populations and a variety of populations and settings.

In addition, there are some disadvantages and limitations of using factor analytic methods (Tabachnick & Fidell, 2001), although they do contribute to the ability to examine psychological constructs. Often, variables are presumed to be correlated, which, when variables correlate with several factors, can lead to difficulty in defining factors. Also, the value and interpretability of various factor solutions is dependent on the researcher's assessment, which can vary from one researcher to the next, because there are no set standard objective criteria researchers must use to select the "correct" factor solution. Some researchers consider factor analytic methods less preferable, because they attempt to assist in explaining typically complex and abstract constructs (Tabachnick & Fidell, 2001). Notably, to assist in correcting for these limitations, this researcher examined a variety of factor analytic methods, the widely used MAP (Velicer, 1976; Velicer et al., 2000) and Scree tests (Cattell, 1966b), to determine the most psychologically meaningful results, which also led to no overlap of variables among factors.

Future Directions

As noted within the limitations section, while this study provides preliminary evidence of the dimensions of happiness and their relations to state and trait anxiety within a university sample, it would be beneficial for future studies to examine these same areas within other samples, such as community or psychiatric samples, in order to potentially provide cross validation with a variety of settings.

Future studies could also further investigate potential ways of weighing and/or summing items to gather totals for each scale and overall, so people can see where they fall and what their total happiness score is. This could allow them to identify what areas they have to improve. While Musikanski et al (2017) did this in their website happycounts.org, this would need to be redone with future iterations of this study, as the number of dimensions has changed and as additional psychometric work is conducted on the Round 4 version of the GNHI.

As noted, while the expected high negative correlations were found overall among the dimensions of happiness and state and trait anxiety, factors one through four contributed the most, both in the correlational and canonical analyses. Future studies could potentially further explore factor five, Government Satisfaction, and factor six, Time Balance, to see whether there is a pattern of them showing lowest correlations after future iterations of this project and to see whether/how much these factors are contributing overall to any relationship with state and trait anxiety.

While this study provided a base of evidence of discriminant validity of the Round 4 version of the GNHI, there need to be additional validity studies, along with reliability studies, conducted in the future before we can confidently say the Round 4 version of the GNHI has a reliable and valid psychometric foundation. This researcher's study provides a starting point for a

promising survey with potential for large positive impact to individuals and communities, but future iterations of this research could continue to examine the reliability and validity before we could assert that it is an empirically psychometrically sound instrument.

Due to the fairly recent shift of governments focusing on GNH as opposed to only GDP/economic sustainability, there does not appear to be much existing literature relating to one's happiness including their satisfaction with government, whereas this researcher's data show this as the fifth dimension of happiness. Research could further explore this dimension as it relates to people's overall happiness, as a means of gathering additional insights.

Future studies could potentially study the GNHI (as a tool for clinical psychologists to use in therapy) as it relates to depression and behavioral activation and/or to utilize it as a measure while working on increasing one's committed action to values, as these areas relate to this study's factors six and one (i.e., Time Balance and Positive Affect and Meaning). Future studies could potentially utilize the GNHI as a means of examining progress and therapeutic impact when working on cognitive reframing as a part of Cognitive Behavioral Therapy, as this relates to this study's factor one, Positive Affect and Meaning. In addition, future studies could potentially examine how the GNHI relates to DBT dialectics where two opposites can both be true at the same time (for example, examining how one could potentially be both anxious and happy simultaneously). This could potentially be related to Aristotle's life of meaning, the positive psychology perspective of emphasizing meaning first, along with Acceptance and Commitment Therapy's committed action to values, where meaning may override one's negative reaction due to anxiety, for example, and individuals can then experience both at the same time while living a life according to things they find meaningful. Future studies could potentially examine these areas further, along with utilizing this measure in community psychology

capacities, such as for community advocacy, program implementation, management, and evaluation, information dissemination and building public awareness, and potentially impacting public policies.

REFERENCES

REFERENCES

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing.* Washington, DC: American Educational Research Association.

American Psychological Association. (2018). *Clinical Psychology.* Retrieved from http://www.apa.org/ed/graduate/specialize/clinical.aspx

American Psychological Association. (2013, June). College students' mental health is a growing concern, survey finds. *Monitor on Psychology, 44*(6), pp 13. Retrieved from http://www.apa.org/monitor/2013/06/college-students.aspx

American Psychological Association. (2018). *Commission on Accreditation.* Retrieved from http://www.apa.org/ed/accreditation/about/coa/

American Psychiatric Association. (1994). *Diagnostic and statistical manual* (DSM-IV) (4th edn., revised). Washington, DC: American Psychiatric Association.

Anastasi, A., & Urbina, S. (1997). *Psychological testing* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Aristotle, Thomson, J. A. K., Tredennick, H., & Barnes, J. (2004). *The Nicomachean Ethics*. London: Penguin Books.

Arrindell, W. A., Meeuwesen, L., & Huyse, F. J. (1991). The Satisfaction With Life Scale (SWLS): Psychometric properties in a non-psychiatric medical outpatients sample. *Personality and Individual Differences, 12,* 117–123.

Baldwin, D. S., Allgulander, C., Bandelow, B., Ferre, F., & Pallanti, S. (2012). An international survey of reported prescribing practice in the treatment of patients with generalized anxiety disorder. *The World Journal of Biological Psychiatry, 13*(7), 510-516.

Baldwin, D. S., Anderson, I. M., Nutt, D. J., Bandelow, B., Bond, A., Davidson, J. R., & … Wittchen, H. (2014). Evidence-based guidelines for the pharmacological treatment of anxiety disorders: recommendations from the British Association for Psychopharmacology. *Journal of Psychopharmacology, 19*(6), 567.

Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21st century. *Dialogues in Clinical Neuroscience, 17*(3), 327-335.

Bandelow, B., Zohar, J., Hollander, E., Kasper, S., Möller, H., Zohar, J., & ... Vega, J. (2008). World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the pharmacological treatment of anxiety, obsessive-compulsive and post-traumatic stress disorders - first revision. *The World Journal Of Biological Psychiatry: The Official Journal Of The World Federation Of Societies Of Biological Psychiatry, 9*(4), 248-312.

BBC. (2006). *The happiness formula: Opinion poll.* Retrieved from http://news.bbc.co.uk/nol/shared/bsp/hi/pdfs/29_03_06_happiness_gfkpoll.pdf.

Ben-Porath, Y. S. (2012). *Interpreting the MMPI-2-RF.* Minneapolis, MN: University of Minnesota Press.

Berridge, K. C. (1999). Pleasure, pain, desire, and dread: Hidden core processes of emotion. In Kahneman, D., Diener, E., & Schwarz, N. (eds.) *Well-being: the foundations of hedonic psychology* (pp. 525-557). New York: Russell Sage Foundation.

Buettner, D. (2017). *The Blue Zones of Happiness: Lessons from the World's Happiest People.* Washington, DC: National Geographic Partners, LLC.

Buettner, D. (2017, November). The Search for Happiness: What we can learn from Costa Rica, Denmark, and Singapore – the most joyful places on the planet. *National Geographic, 232*(5), 30-59.

Burton, R. *The anatomy of melancholy.* London, UK: 1621.

Cantril, H. (1965). *The pattern of human concerns.* New Brunswick, NJ: Rutgers University Press.

Capuccino, C. (2013). Happiness and Aristotle's Definition of Eudaimonia, *Philosophical Topics, 41*(1)*, 1-26.*

Cattell, R. B. (1966a). Patterns of change: Measurement in relation to state-dimension, trait change, lability, and process concepts. In R. B. Cattell (Ed.), *Handbook of multivariate experimental psychology* (pp. 1905-1998). Chicago, IL: Rand McNally.

Cattell, R. C. (1966b). The scree test for the number of factors. *Multivariate Behavioral Research, 1,* 245-276.

Cattell, R. B., & Scheier, I. H. (1958). The nature of anxiety: A review of thirteen multivariate analyses comprising 814 variables. *Psychological Reports, 4,* 351-388.

Cattell, R. B., & Scheier, I. H. (1963). *Handbook for the IPAT Anxiety Scale* (2nd edn.). Champaign, IL: Institute for Personality and Ability Testing.

Chang, H. H., & Nayga, R. M., Jr. (2010). Childhood obesity and unhappiness; the influence of soft drinks and fast food consumption. *Journal of Happiness Studies, 11,* 261-275.

Chinnes, A. C. (2016). *A Factor Analytic Analysis of Happiness*. Unpublished master's thesis, Wichita State University: Department of Psychology, 1-48.

Cloutier, S., Jambeck, J., & Scott, N. (2014). The sustainable neighborhoods for happiness index (SNHI): A metric for assessing a community's sustainability and potential influence on happiness. *Ecological Indicators, 40,* 147-152.

Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38,* 668-678.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16,* 297-335.

Cummins, R., Lau, A., Mellor, D., & Stokes, M. (2009). Encouraging governments to enhance the happiness of their nation: step 1: understand subjective well-being. *Social Indicators Research, 91*(1), 23-36.

Dalton, J. & Wolfe, S. (2012). Joint Column: Education Connection and The Community Practitioner. *The Community Psychologist, 45*(4), 7-14.

Darwin, C. (1965 version, original publication 1872). *The expression of emotions in man and animals.* Chicago, IL: University of Chicago Press.

Derogatis, L. R., Lipman, R. S., Rickels, J., & Covi, L. (1974). The Hopkins Symptom Checklist: A measure of primary symptom dimensions. In P. Pichot (Ed.), *Psychological measurements in psychopharmacology: Modern problems in pharmacopsychiatry.* Basel, Switzerland: S. Krager.

Diaz, D., Stavraki, M., Blanco, A., & Gandarillas, B. (2015). The eudaimonic component of satisfaction with life and psychological well-being in Spanish cultures. *Psicothema, 27*(3), 247-253.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffen, Sharon. (1985a). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.

Diener, E., Larson, R. J., Levine, S., & Emmons, R. A. (1985b). Intensity and frequency: Dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology, 48,* 1253-1265.

Diener, E., & Oishi, S. (2004). Are Scandinavians happier than Asians? Issues in comparing nations on subjective well-being. In: F. Columbus (Ed.), *Asian economic and political issues*, *20,* 1-25.

Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 119-139). Oxford, England: Pergamon Press.

Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science, 13,* 80-83.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125,* 276-302.

Dumitrescu, A. L., Kawamura, M., Dogaru, B. C., & Dogaru, C. D. (2010). Relations of achievement motives, satisfaction with life, happiness and oral health in Romanian university students. *Oral Health & Prevention Dentistry, 8,* 15-22.

Eysenck, H. J., & Eysenck, S. B. G. (1964). *Manual of the Eysenck personality inventory.* San Diego, CA: Educational and Industrial Testing Service.

Eysenck, H. J., & Eysenck, S. B. (1969). *Personality structure and measurement.* San Diego: Knapp.

Fave, A. D., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research, 100,* 185-207.

Flynn, D. M., & MacLeod, S. (2015). Determinants of happiness in undergraduate university students. *College Student Journal, 49*(3), 452-460.

Franklin, B., Jefferson, T., & The Constitutional Convention and the Second Continental Congress (2011). *The Constitution of the United States, The Declaration of Independence, The Articles of the Confederation, The Constitutional Dictionary and other historical documents.* Delaware: Montecristo Publishing LLC.

Freud, S. (1924). *Collected papers* (Vol. 1). London: Hogarth Press.

Freud, S. (1936). *The problem of anxiety.* New York: W. W. Norton.

Frey, B., & Stutzer, A. (2011). The use of happiness research for public policy. *Social Choice and Welfare, 38,* 659-674.

Gallup World Poll. (2008). *World poll questions.* Retrieved from http://media.gallup.com/dataviz/www/WP_Questions_WHITE.pdf

Gaundry, E., Spielberger, C. D., & Vagg, P. R. (1975). Validation of the state-trait distinction in anxiety research. *Multivariate Behavior Research, 10,* 331-341.

Gorsuch, R.L. (1983). *Factor analysis* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Green, D. P., Goldman, S. L., & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology, 64*, 1029-1041.

Gross National Happiness Commission. (n.d.) Mandate. Retrieved from http://www.gnhc.gov.bt/mandate [accessed May, 2018]

Hall, C. A. (1977). *Differential relationships of pleasure and distress with depression and anxiety over a past, present, and future time framework.* Unpublished doctoral dissertation, University of Minnesota.

Happiness Alliance (2013). *Gross National Happiness Index Round 3 – 2013*. Retrieved from https://www.slideshare.net/TheHappinessInitiative/gross-national-happiness-index-round-3-the-happiness-initiative-happiness-alliance

Happiness Alliance. (2014a). *Gross National Happiness Index Round 4 – 2014*. Retrieved from http://www.slideshare.net/TheHappinessInitiative/gross-national-happiness-index-2015

Happiness Alliance. (2014b). *Project history of the Happiness Alliance home of the Happiness Index and Gross National Happiness Index*. Retrieved from http://www.slideshare.net/TheHappinessInitiative/happiness-alliance-home-of-the-happiness-initiatives-project-history

Happiness Alliance. (2014c). *The domains of happiness for the Gross National Happiness Index*. Retrieved from http://www.slideshare.net/TheHappinessInitiative/the-domains-of-happiness-for-the-gross-national-happiness-index

Hathaway, S.R. & McKinley, J.C. (1943). *Minnesota Multiphasic Personality Inventory.* Minneapolis: University of Minnesota Press.

Helliwell, J., Layard, R., & Sachs, J. (2017) *World Happiness Report*. Retrieved from http://worldhappiness.report/wp-content/uploads/sites/2/2017/03/HR17.pdf

Hoggard, L. (2005). How to be happy. London: B.B.C. Books.

Jackson, S. W. (1995). A history of melancholia and depression. In G. H. Pollock & H. M. Visotsky (Eds.), *Depression and Stress, 1,* 3-42.

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *Journal of Positive Psychology, 3,* 219-233.

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the national comorbidity survey replication (NCS-R). *Archives of General Psychiatry, 62*(6), 617-627.

Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82,* 1007-1022.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606-613.

Lama, D., & Cutler, H. (1998). *The art of happiness. A handbook for living.* New York: Riverhead Press.

Layard, R. (2005). *Happiness: Lessons from a new science.* London: Penguin Books.

Levin, K. A., & Currie, C. (2013). Reliability and validity of an adapted version of the Cantril ladder for use with adolescent samples. *Social Indicators Research, 119*(2), 1047-1063.

Lucas, R. E., Diener, E., & Suh, E. M. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology, 71,* 616-628.

Lyubomirsky, S. (2001). Why are some people happier than others?: The role of cognitive and motivational processes in well-being. *American Psychologist, 56,* 239-249.

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*(6), 803-855.

Martin, P. (2005). *Making happy people*. London: Harper Perennial.

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research, 5*(8), 1027-1035.

Millon, T., Millon, C., & Davis, R. (1994). *MCMI-III manual: Millon Clinical Multiaxial Inventory-III.* Minneapolis, MN: National Computer Systems.

Musikanski, L., Cloutier, S., Bejarano, E., Briggs, D., Colbert, J., Strasser, G., & Russell, S. (2017). Happiness index methodology. *Journal of Social Change, 9*(1), 4-31.

Neugarten, B. L., Havighurst, R., & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology, 16,* 134-143.

Norrish, J. M., & Vella-Brodrick, D. A. (2008). Is the study of happiness a worthy scientific pursuit? *Social Indicators Research, 87*(3), 393-407.

Padilla, S. (2010). *Relationship of the MMPI-2-RC Demoralization Scale to MCMI-III Scales in Psychiatric Inpatients.* Unpublished doctoral dissertation, Wichita State University: Department of Psychology.

Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment, 5,* 164-172.

Pavot, W., & Diener, E. (2008). The Satisfaction with Life Scale and the emerging construct of life satisfaction. *Journal of Positive Psychology, 3,* 137-152.

Peterson, C., Park, N., & Seligman, Me. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies, 6,* 25-41.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* Washington, DC: American Psychological Association/New York: Oxford University Press.

Pfeiffer, D., & Cloutier, S. (2016). Planning for happy neighborhoods. *Journal of the American Planning Association, 83,* 267-279.

Piqueras, J. A., Kuhne, W., Vera-Villarroel, P, van Straten, A., & Cuijpers, P. (2011). Happiness and health behaviors in Chilean college students. *Journal of Religion and Health, 52,* 450-453.

Plutchik, R. (2001). The nature of emotions. *American Scientist, July-August,* 89.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Ryff, C. (1989a). Beyond Ponce de Leon and life satisfaction: New directions in quest and successful aging. *International Journal of Behavioral Development, 12,* 35-55.

Ryff, C. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57,* 1069-1081.

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: An eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9,* 13-39.

Ryu, H. S., Chang, S-O., Song, J-A., & Oh, Y. (2013) Effect of domain-specific life satisfaction on depressive symptoms in adulthood and old age: results of a cross-sectional descriptive survey. *Archives of Psychiatric Nursing, 27,* 101-107.

Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). *Kaplan & Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry.* Philadelphia, PA: Wolters Kluwer.

Scollon, C. N., Diener, E., Oishi, S., & Biswas-Diener, R. (2004). Emotions across cultures and methods. *Journal of Cross-Cultural Psychology, 35,* 304-326.

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment.* New York: Free Press.

Sherry, A., & Henson, R. K. (2005). Conducting and interpreting canonical correlation analysis in personality research: A user-friendly approach. *Journal of Personality Assessment, 84*(1), 37-48.

Shirneshan, E., Bailey, J., Relyea, G., Franklin, B. E., Solomon, D. K., and Brown, L. M. (2013). Incremental direct medical expenditures associated with anxiety disorders for the US adult population: Evidence from the medical expenditure panel survey. *Journal of Anxiety Disorders, 27*(7), 720-727.

Spielberger, C. D. (1966). Theory and research on anxiety. In C. D. Spielberger (Ed.), *Anxiety and behavior* (pp. 3-20). New York: Academic Press.

Spielberger, C. D. (1972a). Anxiety as an emotional state. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 1, pp. 24-49). New York: Academic Press.

Spielberger, C. D. (1972b). Current trends in theory and research on anxiety. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 1, pp. 3-19). New York: Academic Press.

Spielberger, C. D. (1973). *Manual for the State-Trait Anxiety Inventory for Children.* Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D. (1977). Anxiety: Theory and research. In B. B. Wolman (Ed.), *International Encyclopedia of Neurology, Psychiatry, Psychoanalysis, and Psychology* (pp. 81-84). New York: Human Science Press.

Spielberger, C. D. (1979a). *Understanding stress and anxiety.* London: Harper and Row.

Spielberger, C. D. (1989). *State-Trait Anxiety Inventory: A comprehensive bibliography* (2nd edn.). Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D., & Gorsuch, R. L. (1966). The development of the State-Trait Anxiety Inventory. In C. D. Spielberger & R. L. Gorsuch, *Mediating processes in verbal conditioning.* Final report to the National Institutes of Health, US Public Health Service on Grants MH-7229, MH-7446, and HD-947.

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. D. (1970). *STAI: Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D., & Reheiser, E. C. (2009). Assessment of emotions: anxiety, anger, depression, and curiosity. *Applied Psychology: Health and Well-Being, 1*(3), 271-302.

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory (STAI).* Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1968, 1977). *State-Trait Anxiety Inventory for Adults: Self-Evaluation Questionnaire (STAI-AD).* Palo Alto, CA: Consulting Psychologists Press.

Spielberger, C. D., Vagg, P. R., Barker, L. R., Donham, G. W., & Westberry, L. G. (1980). The factor structure of the State-Trait Anxiety Inventory. In I. G. Sarason & C. D. Spielberger (Eds.), *Stress and anxiety* (Vol. 7, pp. 95-109). Washington, DC: Hemisphere.

Strategic Orientations of the Secretary-General (2016, June). *Meeting of the OECD Council at Ministerial Level.* Retrieved from https://www.oecd.org/mcm/documents/strategic-orientations-of-the-secretary-general-2016.pdf

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.

Taylor, J. A. (1953). A personality scale of manifest anxiety. *Journal of Abnormal Social Psychology, 48,* 285-290.

Tellegen, A. (1984). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the anxiety disorders.* Hillsdale, NJ: Erlbaum.

Tellegen, A., Watson, D., & Clark, L. A. (1999a). Further support for a hierarchical model of affect: Reply to Green and Salovey. *Psychological Science, 10*(4), 307-309.

Tellegen, A., Watson, D., & Clark, L. A. (1999b). On the dimensional and hierarchical structure of affect. *Psychological Science, 10*(4), 297-303.

Thinley, J. (2012). *High level meeting on happiness and well-being: Defining a new economic paradigm.* Retrieved from http://world-happiness.org/past-events/high-level-meeting-on-happiness-and-wellbeing-april-2-2012/.

United Kingdom Department of Health (2006). *The general practice physical activity questionnaire*. Retrieved from http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_063813.pdf

Ura, K., Alkire, S., Zangmo, T., & Wangdi, K. (2012, May). *An extensive analysis of the GNH index. Centre for Bhutan Studies.* Retrieved from http://www.grossnationalhappiness.com/wp-content/uploads/2012/10/An%20Extensive%20Analysis%20of%20GNH%20Index.pdf

Urbina, S. (2014). *Essentials of Psychological Testing.* Hoboken, New Jersey: John Wiley & Sons, Inc.

U.S. Mission to the Organization For Economic Cooperation & Development (2018). *What is the OECD?* Retrieved from https://usoecd.usmission.gov/our-relationship/about-the-oecd/what-is-the-oecd/

Veenhoven, R. (1994). El studio de la satisfaccion con la vida [The study of Life Satisfaction]. *Intervencion Psicosocial, 3,* 87-116.

Veenhoven, R. (2013a). *World database of happiness.* Netherlands: Erasmus University Rotterdam. Retrieved from http://worlddatabaseofhappiness.eur.nl

Veenhoven, R. (2015). Informed Pursuit of Happiness: What we should know, do know, and can get to know. *Journal of Happiness Studies, 16,* 1035-1071.

Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. Psychometrika, 41, 321-327.

Velicer, W. F., Eaton, C. A., and Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. Pp. 41-71 in R. D. Goffin and E. Helmes, eds., Problems and solutions in human assessment Boston: Kluwer.

Vella-Brodrick, D. A., Park, N., & Peterson, C. (2009). Three ways to be happy: Pleasure, engagement, and meaning: Findings from Australian and US samples. *Social Indicators Research, 90,* 165-179.

Victoria Foundation. (2010). *2010 Greater Victoria Well-Being Survey*. Retrieved from http://www.slideshare.net/TheHappinessInitiative/2010-greater-victoria-wellbeing-survey

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*(2), 219-235.

Webb, E. (1915). *Character and intelligence: An attempt at an exact study of character.* London: Cambridge University Press.

Webster's Third New International Dictionary of the English Language (1961). Springfield, Massachusetts: Merriam-Webster, Inc.

WHO (2006). (URL). www.who.int/en/Section1174/Section1199/Section1567/Section1826_8103.htm

Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*(5), 459-482.

Yoon, D. P. (2006). Factors affecting subjective well-being for rural elderly individuals: The importance of spirituality, religiousness, and social support. *Journal of Religion and Spirituality in Social Work: Social Thought, 25*(2), 59-75.

Zidansek, A. (2007). Sustainable development and happiness in nations. *Energy, 32,* 891-897.

APPENDICES

APPENDIX A

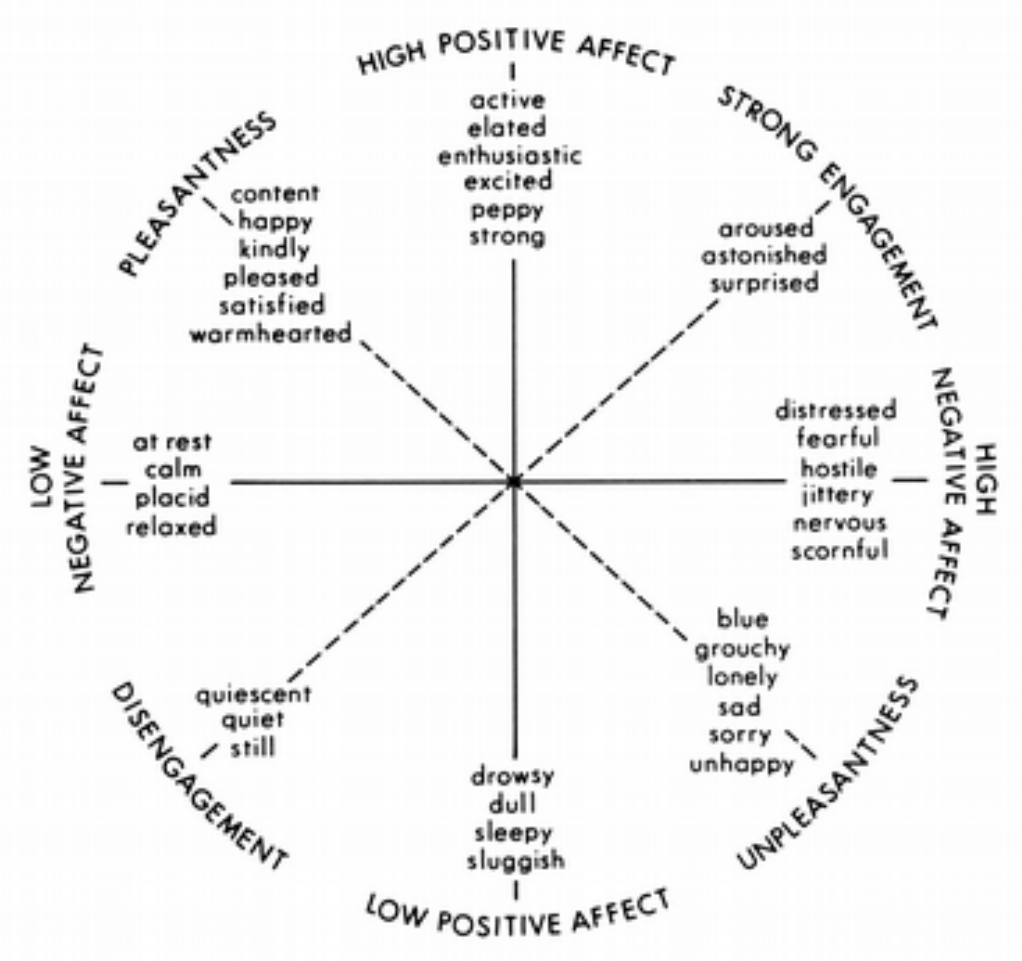

Figure 1. The two-factor structure of affect (Watson & Tellegen, 1985).

APPENDIX B

Figure 2. GNHI Development in Four Rounds Flowchart[3] (Musikanski et al., 2017).

cii

[3] Round 4 without the demographic questions contains a total of 50 questions; this researcher utilized the Round 4 version of the GNHI within this dissertation.

APPENDIX C

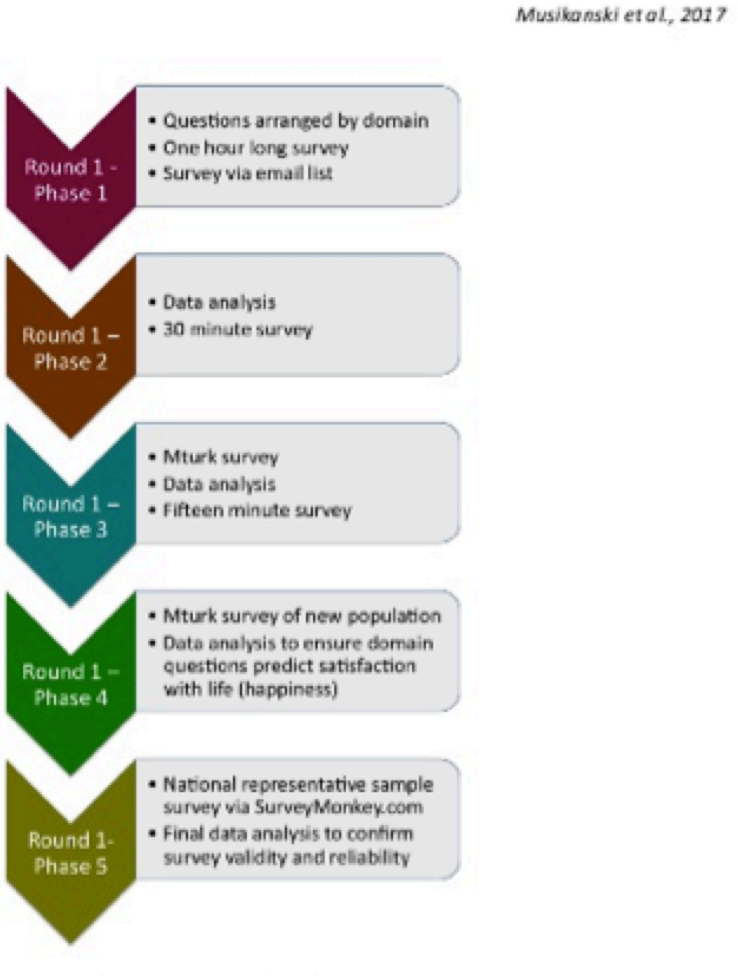

Figure 3. GNHI Round 1 Phases Flowchart[4] (Musikanski et al., 2017).

ciii

[4] While within the flowchart section on Round 1-Phase 5, it is stated that there was "final data analysis to confirm survey validity and reliability," (Musikanski et al., 2017, p. 10) the researcher of this dissertation wants to make clear that we cannot actually say that we are confirming the validity and reliability of the survey since we do not have evidence of the details of these results, and since the survey has been updated since Round 1, hence the need for this dissertation.

APPENDIX D

Four-Factor Solution

Table 9. *Factor Correlations: 4-Factor Solution*

I Positive Affect and Meaning	1.00			
II Social and Physical Environment	.57	1.00		
III Work and Financial Satisfaction	.60	.50	1.00	
IV Time Balance	.13	.18	.16	1.00
	I	II	III	IV

Table 10. *Factor 1: Positive Affect and Meaning*

0.93	Overall, to what extent do you feel the things you do in your life are worthwhile?
0.86	I lead a purposeful and meaningful life.
0.81	Overall, how satisfied are you with your life nowadays?
0.80	I am engaged and interested in my daily activities.
0.80	In general, I feel positive about myself.
0.80	I am optimistic about my future.
0.76	Most days, I feel a sense of accomplishment from what I do.
0.70	Overall, how happy did you feel yesterday?
0.70	Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?
0.70	How satisfied are you with your personal relationships?
0.66	Please indicate how much of the time during the past week you felt loved.
0.64	How satisfied were you with your ability to perform your daily living activities?
0.56	People in my life care about me.
-0.52	Please indicate how much of the time during the past week you felt lonely.
0.51	Please indicate how much of the time during the past week you had a lot of energy.
0.49	In general, I would say my health is….

Table 11. *Factor 2: Social and Physical Environment*

0.60	Please tell us how many of the following people you trust: your neighbors.
0.59	In your neighborhood or community, how satisfied are you with your access to artistic and cultural activities?
0.58	Please tell us how many of the following people you trust: businesses in your community.
0.55	In your neighborhood or community, how satisfied are you with your access to sports and recreational activities?
0.55	How satisfied are you with the opportunities that you have to enjoy nature?
0.52	The public officials in my city or town pay attention to what people think.
0.52	How satisfied are you with the air quality in your environment?
0.51	Please indicate how much confidence you have in the following organizations: local government.
0.51	How satisfied are you with the efforts being made to preserve the natural environment in your neighborhood?
0.49	In your neighborhood or community, how satisfied are you with your access to activities to develop skills through informal education?
0.44	Imagine that you lost a wallet or purse that contained two hundred dollars. Please indicate how likely you think it would be to have all of your money returned to you if it was found by someone who lives close by.
0.42	Please indicate how much confidence you have in the following organizations: national government.
0.41	How would you describe your feeling of belonging to your local community?
-0.40	Corruption is widespread throughout the government in my city or town.

Table 12. *Factor 3: Work and Financial Satisfaction*

0.68	In general, how much stress do you feel about your personal finances?
0.63	All things considered, how satisfied are you with your current work life? (Note: if you work or volunteer at more than one job, you should answer about the job you spend the longest time working at.)
0.63	I have enough money to buy things I want.
0.59	Please indicate how frequently you have had the following experiences in the past 12 months: You ate less because there wasn't enough food or money for food.
0.58	How frequently do you find yourself just getting by financially and living paycheck to paycheck?
0.55	I am allowed to decide how to go about getting my job done.
0.52	Considering all my efforts and achievements in my job, I feel I get paid appropriately.
0.51	The conditions of my job allow me to be about as productive as I could be.
0.51	How much of the time do you find your current work life interesting?
0.46	How satisfied are you with the balance between the time you spend on your job and the time you spend on other aspects of your life?

Table 13. *Factor 4: Time Balance*

0.56	Here are some statements about how things are going in your life. When indicating your agreement with each statement, please think specifically about how things were for you over the past week: I have had plenty of spare time.
0.44	In a typical week, how much of your time are you able to spend doing the kinds of things that you enjoy?

APPENDIX E

Five-Factor Solution

Table 14. *Factor Correlations: 5-Factor Solution*

I Positive Affect and Meaning	1.00				
II Social and Physical Environment	.56	1.00			
III Work Satisfaction	.50	.39	1.00		
IV Financial Satisfaction	.52	.44	.45	1.00	
V Time Balance	.19	.24	.17	.21	1.00
	I	II	III	IV	V

Table 15. *Factor 1: Positive Affect and Meaning*

0.93	Overall, to what extent do you feel the things you do in your life are worthwhile?
0.86	I lead a purposeful and meaningful life.
0.82	Overall, how satisfied are you with your life nowadays?
0.80	In general, I feel positive about myself.
0.79	I am engaged and interested in my daily activities.
0.79	I am optimistic about my future.
0.76	Most days, I feel a sense of accomplishment from what I do.
0.71	Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?
0.71	Overall, how happy did you feel yesterday?
0.71	How satisfied are you with your personal relationships?
0.70	Please indicate how much of the time during the past week you felt loved.
0.64	How satisfied were you with your ability to perform your daily living activities?
0.57	People in my life care about me.
-0.54	Please indicate how much of the time during the past week you felt lonely.
0.52	Please indicate how much of the time during the past week you had a lot of energy.
0.49	In general, I would say my health is….

Table 16. *Factor 2: Social and Physical Environment*

0.60	Please tell us how many of the following people you trust: your neighbors.
0.58	In your neighborhood or community, how satisfied are you with your access to artistic and cultural activities?
0.58	Please tell us how many of the following people you trust: businesses in your community.
0.58	How satisfied are you with the opportunities that you have to enjoy nature?
0.55	How satisfied are you with the efforts being made to preserve the natural environment in your neighborhood?
0.54	How satisfied are you with the air quality in your environment?
0.53	In your neighborhood or community, how satisfied are you with your access to sports and recreational activities?
0.49	In your neighborhood or community, how satisfied are you with your access to activities to develop skills through informal education?
0.48	The public officials in my city or town pay attention to what people think.
0.48	Please indicate how much confidence you have in the following organizations: local government.
0.43	Imagine that you lost a wallet or purse that contained two hundred dollars. Please indicate how likely you think it would be to have all of your money returned to you if it was found by someone who lives close by.
0.42	How would you describe your feeling of belonging to your local community?

Table 17. *Factor 3: Work Satisfaction*

0.75	All things considered, how satisfied are you with your current work life? (Note: if you work or volunteer at more than one job, you should answer about the job you spend the longest time working at.)
0.66	I am allowed to decide how to go about getting my job done.
0.61	The conditions of my job allow me to be about as productive as I could be.
0.56	How much of the time do you find your current work life interesting?
0.50	Considering all my efforts and achievements in my job, I feel I get paid appropriately.
0.44	How satisfied are you with the balance between the time you spend on your job and the time you spend on other aspects of your life?

Table 18. *Factor 4: Financial Satisfaction*

0.76	In general, how much stress do you feel about your personal finances?
0.75	How frequently do you find yourself just getting by financially and living paycheck to paycheck?
0.73	I have enough money to buy things I want.
0.59	Please indicate how frequently you have had the following experiences in the past 12 months: You ate less because there wasn't enough food or money for food.

Table 19. *Factor 5: Time Balance*

0.59	Here are some statements about how things are going in your life. When indicating your agreement with each statement, please think specifically about how things were for you over the past week: I have had plenty of spare time.
-0.45	Here are some statements about how things are going in your life. When indicating your agreement with each statement, please think specifically about how things were for you over the past week: My life has been too rushed.
0.44	In a typical week, how much of your time are you able to spend doing the kinds of things that you enjoy?

APPENDIX F

Table 22. *Pearson Correlations: All 90 Items*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Q1_Ladder	1						
Q2_LifeSatisfaction	.797**	1					
Q3_Meaning	.662**	.732**	1				
Q4_Happiness	.597**	.669**	.618**	1			
Q5_Anxious	-.310**	-.337**	-.239**	-.377**	1		
Q6_Purpose	.549**	.637**	.748**	.510**	-.207**	1	
Q7_Engagement	.537**	.614**	.687**	.527**	-.227**	.643**	1
Q8_Optimism	.523**	.580**	.594**	.464**	-.225**	.606**	.546**
Q9_Accomplishment	.505**	.585**	.675**	.496**	-.264**	.641**	.648**
Q10_PositiveAbtSelf	.523**	.644**	.647**	.580**	-.337**	.634**	.581**
Q11_OverallPhysHealth	.463**	.510**	.449**	.396**	-.225**	.438**	.427**
Q12_Energy	.452**	.479**	.435**	.461**	-.324**	.416**	.458**
Q13_Sat_w_AbilitytoPerformADLs	.527**	.577**	.591**	.471**	-.292**	.515**	.540**
Q14_Sat_w_QualityofExercise	.275**	.306**	.376**	.291**	-.166**	.350**	.331**
Q15_TimeBalance	.369**	.396**	.308**	.369**	-.293**	.260**	.346**
Q16_LifeTooRushed	-.117**	-.155**	-.090*	-.089*	.238**	-0.051	-0.084
Q17_SpareTime	.101*	.143**	0.02	.134**	-.111*	0.032	0.052
Q18_AccesstoSportsandRec	.279**	.249**	.201**	.264**	-.181**	.228**	.170**
Q19_AccesstoArtandCulturalActivities	.280**	.300**	.294**	.250**	-.098*	.322**	.230**
Q20_AccesstoInformalEd	.378**	.395**	.327**	.318**	-.192**	.329**	.248**
Q21_DiscomfortduetoDiversity	-.206**	-.258**	-.193**	-.157**	.166**	-.213**	-.168**
Q22_CommunityBelongingFeelings	.366**	.392**	.368**	.275**	-.126**	.388**	.374**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Q23_TrustNeighbors	.284**	.277**	.270**	.263**	-.173**	.233**	.250**
Q24_TrustBusinessesinCommunity	.286**	.365**	.321**	.269**	-.128**	.238**	.266**
Q25_BelieveWalletReturned	.209**	.227**	.208**	.165**	-.099*	.213**	.160**
Q26_SatisfactionwPersonalSafety	.187**	.226**	.233**	.167**	-.160**	.210**	.200**
Q27_FrequencyofVolunteering	-.222**	-.146**	-.114*	-0.081	0.064	-.121**	-.103*
Q28_FrequencyofDonatingMoney	-.170**	-.096*	-.113*	-.106*	0.004	-0.068	-.092*
Q29_SatisfiedwPersonalRelationships	.536**	.612**	.525**	.453**	-.213**	.542**	.443**
Q30_PeopleinMyLifeCareAbtMe	.431**	.506**	.438**	.369**	-.276**	.438**	.379**
Q31_FeltLoved	.516**	.552**	.497**	.451**	-.241**	.461**	.422**
Q32_FeltLonely	-.464**	-.517**	-.429**	-.425**	.361**	-.440**	-.419**
Q33_HealthyPhysicalEnvironment	.414**	.401**	.401**	.346**	-.209**	.434**	.324**
Q34_SatisfactionwNaturalEnvironment	.147**	.176**	.170**	.170**	-.094*	.176**	.204**
Q35_Nature	.197**	.204**	.211**	.222**	-.154**	.212**	.176**
Q36_AirQualityinEnviro	.166**	.178**	.186**	.153**	-.115*	.206**	.166**
Q37_CorruptioninGovernment	-.129**	-.145**	-.132**	-.115*	.129**	-.135**	-.172**
Q38_PublicOfficials	.226**	.234**	.214**	.214**	-.149**	.205**	.225**
Q39_NationalGovernment	.203**	.237**	.254**	.221**	-.154**	.261**	.236**
Q40_LocalGovernment	.234**	.259**	.282**	.260**	-.148**	.236**	.248**
Q41_StressAbtFinances	.410**	.446**	.320**	.331**	-.315**	.277**	.297**
Q42_LivingPaychecktoPaycheck	.283**	.325**	.210**	.246**	-.233**	.175**	.202**
Q43_AteLessBcFinances	.315**	.356**	.255**	.229**	-.193**	.245**	.255**
Q44_HaveEnoughMoney	.398**	.380**	.276**	.314**	-.202**	.270**	.278**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Q45_SatisfiedwWorkLife	.386**	.408**	.327**	.320**	-.194**	.298**	.312**
Q46_WorkLifeBalance	.312**	.382**	.278**	.276**	-.231**	.294**	.249**
Q47_FindWorkInteresting	.416**	.402**	.382**	.287**	-.165**	.401**	.392**
Q48_FeelGetPaidAppInJob	.194**	.193**	.134**	.105*	-.118**	0.087	0.073
Q49_ProductiveInJob	.299**	.329**	.225**	.282**	-.190**	.269**	.292**
Q50_AutonomyInJob	.246**	.253**	.209**	.167**	-.153**	.188**	.211**
RCQ51_STAI_State_Calm	-.397**	-.434**	-.344**	-.328**	.403**	-.328**	-.329**
RCQ52_STAI_State_Secure	-.489**	-.527**	-.462**	-.412**	.337**	-.453**	-.456**
Q53_STAI_State_Tense	-.429**	-.476**	-.337**	-.397**	.442**	-.334**	-.345**
Q54_STAI_State_Strained	-.385**	-.474**	-.300**	-.337**	.413**	-.312**	-.308**
RCQ55_STAI_State_Ease	-.464**	-.498**	-.407**	-.424**	.410**	-.399**	-.394**
Q56_STAI_State_Upset	-.485**	-.504**	-.446**	-.424**	.369**	-.442**	-.402**
Q57_STAI_State_Worrying	-.444**	-.475**	-.433**	-.430**	.405**	-.381**	-.372**
RCQ58_STAI_State_Satisfied	-.531**	-.647**	-.483**	-.500**	.340**	-.466**	-.477**
Q59_STAI_State_Frightened	-.376**	-.396**	-.364**	-.323**	.307**	-.319**	-.283**
RCQ60_STAI_State_Comfortable	-.462**	-.538**	-.446**	-.450**	.356**	-.440**	-.458**
RCQ61_STAI_State_SelfConfident	-.478**	-.567**	-.531**	-.473**	.346**	-.493**	-.452**
Q62_STAI_State_Nervous	-.400**	-.433**	-.364**	-.364**	.474**	-.341**	-.310**
Q63_STAI_State_Jittery	-.262**	-.255**	-.203**	-.240**	.367**	-.188**	-.218**
Q64_STAI_State_Indecisive	-.289**	-.301**	-.321**	-.268**	.298**	-.298**	-.316**
RCQ65_STAI_State_Relaxed	-.416**	-.458**	-.352**	-.379**	.398**	-.348**	-.396**
RCQ66_STAI_State_Content	-.521**	-.585**	-.478**	-.422**	.336**	-.435**	-.440**

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Q67_STAI_State_Worried	-.439**	-.500**	-.397**	-.409**	.443**	-.348**	-.327**
Q68_STAI_State_Confused	-.389**	-.416**	-.416**	-.324**	.275**	-.345**	-.340**
RCQ69_STAI_State_Steady	-.527**	-.548**	-.471**	-.449**	.353**	-.446**	-.455**
RCQ70_STAI_State_Pleasant	-.556**	-.592**	-.516**	-.526**	.355**	-.492**	-.513**
RCQ71_STAI_Trait_Pleasant	-.552**	-.575**	-.549**	-.515**	.385**	-.514**	-.511**
Q72_STAI_Trait_NervousRestless	-.380**	-.440**	-.413**	-.407**	.470**	-.383**	-.396**
RCQ73_STAI_Trait_SatisfiedwSelf	-.554**	-.642**	-.630**	-.531**	.388**	-.594**	-.537**
Q74_STAI_Trait_HappyComparison	-.518**	-.616**	-.522**	-.492**	.374**	-.476**	-.466**
Q75_STAI_Trait_Faiure	-.523**	-.587**	-.553**	-.463**	.396**	-.523**	-.461**
RCQ76_STAI_Trait_Rested	-.330**	-.388**	-.274**	-.303**	.341**	-.258**	-.333**
RCQ77_STAI_Trait_Calm	-.396**	-.416**	-.355**	-.323**	.312**	-.334**	-.341**
Q78_STAI_Trait_Overwhelmed	-.501**	-.549**	-.477**	-.423**	.419**	-.419**	-.393**
Q79:STAI_Trait_Worry	-.264**	-.315**	-.322**	-.267**	.388**	-.264**	-.255**
RCQ80_STAI_Trait_Happy	-.590**	-.664**	-.581**	-.614**	.351**	-.598**	-.558**
Q81_STAI_Trait_DisturbingThoughts	-.418**	-.453**	-.470**	-.383**	.324**	-.445**	-.343**
Q82_STAI_Trait_LackSelfConfidence	-.390**	-.477**	-.459**	-.396**	.363**	-.436**	-.394**
RCQ83_STAI_Trait_Secure	-.553**	-.577**	-.537**	-.477**	.350**	-.504**	-.503**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.373**	-.375**	-.331**	-.340**	.266**	-.313**	-.317**
Q85_STAI_Trait_Inadequate	-.481**	-.549**	-.482**	-.438**	.389**	-.489**	-.438**
RCQ86_STAI_Trait_Content	-.555**	-.618**	-.541**	-.513**	.402**	-.511**	-.519**
Q87_STAI_Trait_Rumination	-.321**	-.393**	-.392**	-.286**	.369**	-.349**	-.337**
Q88_STAI_Trait_Disappointments	-.327**	-.388**	-.379**	-.338**	.325**	-.331**	-.314**
RCQ89_STAI_Trait_SteadyPerson	-.482**	-.499**	-.503**	-.438**	.393**	-.444**	-.457**
Q90_STAI_Trait_TensionTurmoil	-.405**	-.483**	-.449**	-.401**	.441**	-.386**	-.359**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q8	Q9	Q10	Q11	Q12	Q13	Q14
Q8_Optimism	1						
Q9_Accomplishment	.558**	1					
Q10_PositiveAbtSelf	.548**	.686**	1				
Q11_OverallPhysHealth	.401**	.383**	.446**	1			
Q12_Energy	.410**	.426**	.494**	.485**	1		
Q13_Sat_w_AbilitytoPerformADLs	.507**	.543**	.522**	.527**	.519**	1	
Q14_Sat_w_QualityofExercise	.281**	.304**	.372**	.434**	.457**	.434**	1
Q15_TimeBalance	.262**	.375**	.354**	.250**	.386**	.289**	.274**
Q16_LifeTooRushed	-0.009	-.115*	-.177**	-.110*	-.139**	-.105*	-.105*
Q17_SpareTime	0.062	0.056	.140**	0.063	.208**	0.054	.143**
Q18_AccesstoSportsandRec	.203**	.245**	.242**	.255**	.258**	.265**	.214**
Q19_AccesstoArtandCulturalActivities	.219**	.327**	.322**	.197**	.209**	.271**	.235**
Q20_AccesstoInformalEd	.258**	.325**	.335**	.273**	.229**	.317**	.267**
Q21_DiscomfortduetoDiversity	-.127**	-.212**	-.176**	-.199**	-.173**	-.278**	-.131**
Q22_CommunityBelongingFeelings	.256**	.327**	.315**	.297**	.256**	.284**	.174**
Q23_TrustNeighbors	.182**	.278**	.261**	.238**	.218**	.287**	.150**
Q24_TrustBusinessesinCommunity	.223**	.290**	.289**	.279**	.225**	.363**	.208**
Q25_BelieveWalletReturned	.153**	.201**	.215**	.205**	.182**	.190**	0.085
Q26_SatisfactionwPersonalSafety	.192**	.236**	.243**	.230**	.199**	.247**	.157**
Q27_FrequencyofVolunteering	-.180**	-.100*	-0.057	-0.054	-.126**	-0.052	-0.072
Q28_FrequencyofDonatingMoney	-0.025	-0.064	-0.027	0.027	-0.057	0.009	0.053
Q29_SatisfiedwPersonalRelationships	.492**	.452**	.526**	.401**	.374**	.458**	.238**
Q30_PeopleinMyLifeCareAbtMe	.418**	.343**	.412**	.353**	.280**	.380**	.093*
Q31_FeltLoved	.437**	.411**	.489**	.329**	.337**	.434**	.192**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q8	Q9	Q10	Q11	Q12	Q13	Q14
Q32_FeltLonely	-.288**	-.409**	-.525**	-.356**	-.318**	-.390**	-.211**
Q33_HealthyPhysicalEnvironment	.345**	.370**	.409**	.443**	.329**	.409**	.333**
Q34_SatisfactionwNaturalEnvironment	.140**	.200**	.242**	.151**	.170**	.191**	.191**
Q35_Nature	.151**	.215**	.240**	.164**	.183**	.215**	.175**
Q36_AirQualityinEnviro	.176**	.179**	.206**	.203**	.178**	.184**	.125**
Q37_CorruptioninGovernment	-0.082	-.147**	-.115*	-.143**	-.178**	-.161**	-.124**
Q38_PublicOfficials	.128**	.146**	.133**	.138**	.213**	.228**	.176**
Q39_NationalGovernment	.159**	.255**	.239**	.225**	.224**	.208**	.187**
Q40_LocalGovernment	.163**	.223**	.186**	.208**	.212**	.236**	.177**
Q41_StressAbtFinances	.222**	.287**	.338**	.323**	.356**	.318**	.189**
Q42_LivingPaychecktoPaycheck	.170**	.181**	.265**	.270**	.243**	.287**	.153**
Q43_AteLessBcFinances	.155**	.236**	.263**	.265**	.248**	.261**	.111*
Q44_HaveEnoughMoney	.177**	.268**	.282**	.284**	.319**	.320**	.118**
Q45_SatisfiedwWorkLife	.285**	.350**	.284**	.282**	.255**	.339**	.197**
Q46_WorkLifeBalance	.263**	.272**	.307**	.302**	.299**	.312**	.229**
Q47_FindWorkInteresting	.295**	.363**	.292**	.269**	.216**	.285**	.123**
Q48_FeelGetPaidAppInJob	.147**	.122**	.135**	.167**	.155**	.179**	.123**
Q49_ProductiveInJob	.282**	.314**	.333**	.250**	.229**	.276**	.170**
Q50_AutonomyInJob	.205**	.209**	.199**	.219**	.160**	.223**	.104*
RCQ51_STAI_State_Calm	-.304**	-.319**	-.459**	-.361**	-.473**	-.381**	-.242**
RCQ52_STAI_State_Secure	-.419**	-.445**	-.534**	-.391**	-.411**	-.449**	-.206**
Q53_STAI_State_Tense	-.291**	-.329**	-.453**	-.354**	-.465**	-.368**	-.217**
Q54_STAI_State_Strained	-.298**	-.313**	-.406**	-.333**	-.421**	-.356**	-.255**
RCQ55_STAI_State_Ease	-.365**	-.425**	-.507**	-.375**	-.474**	-.400**	-.260**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q8	Q9	Q10	Q11	Q12	Q13	Q14
Q56_STAI_State_Upset	-.385**	-.352**	-.445**	-.354**	-.361**	-.405**	-.245**
Q57_STAI_State_Worrying	-.342**	-.404**	-.479**	-.330**	-.371**	-.451**	-.295**
RCQ58_STAI_State_Satisfied	-.441**	-.479**	-.577**	-.414**	-.469**	-.450**	-.283**
Q59_STAI_State_Frightened	-.290**	-.291**	-.377**	-.322**	-.307**	-.389**	-.189**
RCQ60_STAI_State_Comfortable	-.408**	-.451**	-.546**	-.403**	-.441**	-.452**	-.258**
RCQ61_STAI_State_SelfConfident	-.442**	-.476**	-.656**	-.449**	-.449**	-.466**	-.321**
Q62_STAI_State_Nervous	-.274**	-.301**	-.445**	-.317**	-.423**	-.391**	-.259**
Q63_STAI_State_Jittery	-.176**	-.172**	-.274**	-.252**	-.281**	-.309**	-.162**
Q64_STAI_State_Indecisive	-.189**	-.270**	-.282**	-.206**	-.237**	-.321**	-.176**
RCQ65_STAI_State_Relaxed	-.319**	-.380**	-.496**	-.363**	-.489**	-.386**	-.280**
RCQ66_STAI_State_Content	-.408**	-.428**	-.494**	-.365**	-.427**	-.376**	-.272**
Q67_STAI_State_Worried	-.280**	-.305**	-.424**	-.322**	-.405**	-.380**	-.206**
Q68_STAI_State_Confused	-.296**	-.323**	-.361**	-.277**	-.300**	-.410**	-.208**
RCQ69_STAI_State_Steady	-.380**	-.431**	-.523**	-.384**	-.460**	-.442**	-.293**
RCQ70_STAI_State_Pleasant	-.451**	-.491**	-.576**	-.396**	-.480**	-.436**	-.232**
RCQ71_STAI_Trait_Pleasant	-.457**	-.509**	-.593**	-.434**	-.454**	-.500**	-.290**
Q72_STAI_Trait_NervousRestless	-.298**	-.371**	-.500**	-.378**	-.453**	-.398**	-.298**
RCQ73_STAI_Trait_SatisfiedwSelf	-.472**	-.573**	-.684**	-.461**	-.441**	-.499**	-.351**
Q74_STAI_Trait_HappyComparison	-.400**	-.451**	-.554**	-.394**	-.385**	-.448**	-.300**
Q75_STAI_Trait_Faiure	-.446**	-.485**	-.614**	-.434**	-.390**	-.464**	-.312**
RCQ76_STAI_Trait_Rested	-.229**	-.294**	-.409**	-.359**	-.439**	-.285**	-.304**
RCQ77_STAI_Trait_Calm	-.325**	-.323**	-.450**	-.384**	-.386**	-.354**	-.264**
Q78_STAI_Trait_Overwhelmed	-.340**	-.411**	-.490**	-.389**	-.430**	-.449**	-.258**
Q79:STAI_Trait_Worry	-.217**	-.303**	-.397**	-.256**	-.324**	-.289**	-.222**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q8	Q9	Q10	Q11	Q12	Q13	Q14
RCQ80_STAI_Trait_Happy	-.522**	-.553**	-.650**	-.481**	-.509**	-.507**	-.291**
Q81_STAI_Trait_DisturbingThoughts	-.379**	-.409**	-.394**	-.343**	-.296**	-.342**	-.189**
Q82_STAI_Trait_LackSelfConfidence	-.376**	-.404**	-.585**	-.375**	-.340**	-.390**	-.237**
RCQ83_STAI_Trait_Secure	-.468**	-.492**	-.598**	-.467**	-.445**	-.488**	-.311**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.230**	-.319**	-.314**	-.229**	-.295**	-.283**	-.166**
Q85_STAI_Trait_Inadequate	-.383**	-.472**	-.573**	-.361**	-.357**	-.434**	-.266**
RCQ86_STAI_Trait_Content	-.481**	-.524**	-.626**	-.452**	-.467**	-.468**	-.319**
Q87_STAI_Trait_Rumination	-.274**	-.336**	-.436**	-.281**	-.345**	-.331**	-.206**
Q88_STAI_Trait_Disappointments	-.263**	-.295**	-.434**	-.229**	-.335**	-.326**	-.226**
RCQ89_STAI_Trait_SteadyPerson	-.412**	-.446**	-.531**	-.445**	-.425**	-.459**	-.287**
Q90_STAI_Trait_TensionTurmoil	-.285**	-.387**	-.501**	-.339**	-.376**	-.388**	-.204**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q15_TimeBalance	1						
Q16_LifeTooRushed	-.292**	1					
Q17_SpareTime	.460**	-.416**	1				
Q18_AccesstoSportsandRec	.239**	-.122**	.143**	1			
Q19_AccesstoArtandCulturalActivities	.281**	-.131**	.174**	.562**	1		
Q20_AccesstoInformalEd	.273**	-.136**	.102*	.527**	.631**	1	
Q21_DiscomfortduetoDiversity	-.098*	0.065	-0.067	-.172**	-.197**	-.170**	1
Q22_CommunityBelongingFeelings	.171**	-0.043	0.026	.232**	.332**	.303**	-.271**
Q23_TrustNeighbors	.201**	-0.042	.110*	.326**	.290**	.317**	-.155**
Q24_TrustBusinessesinCommunity	.202**	-0.071	.118**	.359**	.359**	.325**	-.233**
Q25_BelieveWalletReturned	.101*	-0.007	0.021	.155**	.177**	.200**	-.148**
Q26_SatisfactionwPersonalSafety	.131**	-0.062	.099*	.139**	.195**	.138**	-.190**
Q27_FrequencyofVolunteering	0.011	-0.044	.183**	-0.005	-0.003	-0.046	-0.036
Q28_FrequencyofDonatingMoney	0.001	-0.065	.091*	0.058	0.008	-0	-0.043
Q29_SatisfiedwPersonalRelationships	.231**	-.151**	0.062	.167**	.251**	.307**	-.246**
Q30_PeopleinMyLifeCareAbtMe	.196**	-.116**	0.034	.236**	.205**	.249**	-.272**
Q31_FeltLoved	.245**	-0.081	0.022	.226**	.242**	.295**	-.212**
Q32_FeltLonely	-.221**	.171**	-0.052	-.145**	-.207**	-.282**	.228**
Q33_HealthyPhysicalEnvironment	.226**	-.158**	0.065	.320**	.314**	.355**	-.209**
Q34_SatisfactionwNaturalEnvironment	.175**	0.006	.115*	.217**	.268**	.253**	-.192**
Q35_Nature	.290**	-0.067	.153**	.254**	.360**	.316**	-.176**
Q36_AirQualityinEnviro	.198**	-0.006	.159**	.252**	.254**	.209**	-.197**
Q37_CorruptioninGovernment	-.122**	.145**	-0.056	-.164**	-.208**	-.102*	.188**
Q38_PublicOfficials	.180**	-.154**	.134**	.237**	.256**	.294**	-.170**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q39_NationalGovernment	.195**	-.113*	.123**	.203**	.163**	.242**	-.163**
Q40_LocalGovernment	.152**	-0.085	.118**	.242**	.248**	.249**	-.157**
Q41_StressAbtFinances	.330**	-.193**	.153**	.188**	.227**	.277**	-.202**
Q42_LivingPaychecktoPaycheck	.171**	-.156**	.100*	.174**	.159**	.181**	-.214**
Q43_AteLessBcFinances	.262**	-.158**	.137**	.187**	.159**	.166**	-.223**
Q44_HaveEnoughMoney	.248**	-.107*	.092*	.182**	.180**	.188**	-.183**
Q45_SatisfiedwWorkLife	.327**	-.105*	.114*	.120**	.170**	.182**	-.144**
Q46_WorkLifeBalance	.429**	-.271**	.362**	.212**	.209**	.281**	-.159**
Q47_FindWorkInteresting	.255**	-.093*	0.024	0.069	.174**	.198**	-.147**
Q48_FeelGetPaidAppInJob	.205**	-.104*	.094*	.159**	.092*	.170**	-0.043
Q49_ProductiveInJob	.244**	-0.056	0.055	.175**	.190**	.234**	-.130**
Q50_AutonomyInJob	.193**	-0.026	.107*	.144**	.152**	.178**	-.149**
RCQ51_STAI_State_Calm	-.304**	.203**	-.171**	-.230**	-.227**	-.248**	.162**
RCQ52_STAI_State_Secure	-.301**	.145**	-0.074	-.223**	-.235**	-.271**	.208**
Q53_STAI_State_Tense	-.353**	.308**	-.212**	-.265**	-.231**	-.273**	.145**
Q54_STAI_State_Strained	-.373**	.285**	-.268**	-.212**	-.255**	-.281**	.264**
RCQ55_STAI_State_Ease	-.388**	.302**	-.270**	-.234**	-.257**	-.290**	.181**
Q56_STAI_State_Upset	-.280**	.129**	-.100*	-.202**	-.219**	-.215**	.194**
Q57_STAI_State_Worrying	-.348**	.203**	-.123**	-.241**	-.252**	-.279**	.213**
RCQ58_STAI_State_Satisfied	-.394**	.189**	-.150**	-.208**	-.244**	-.344**	.209**
Q59_STAI_State_Frightened	-.255**	.141**	-.127**	-.301**	-.269**	-.285**	.194**
RCQ60_STAI_State_Comfortable	-.301**	.185**	-.160**	-.230**	-.261**	-.321**	.178**
RCQ61_STAI_State_SelfConfident	-.286**	.183**	-0.085	-.214**	-.228**	-.325**	.157**
Q62_STAI_State_Nervous	-.302**	.216**	-.156**	-.243**	-.237**	-.271**	.186**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q63_STAI_State_Jittery	-.225**	.155**	-.095*	-.211**	-.188**	-.157**	.095*
Q64_STAI_State_Indecisive	-.214**	.152**	-0.021	-0.07	-.133**	-.120**	.124**
RCQ65_STAI_State_Relaxed	-.409**	.277**	-.266**	-.212**	-.257**	-.259**	.149**
RCQ66_STAI_State_Content	-.341**	.200**	-.181**	-.187**	-.264**	-.323**	.156**
Q67_STAI_State_Worried	-.356**	.251**	-.148**	-.188**	-.228**	-.306**	.131**
Q68_STAI_State_Confused	-.211**	.161**	-0.047	-.144**	-.142**	-.156**	.159**
RCQ69_STAI_State_Steady	-.337**	.190**	-.151**	-.230**	-.231**	-.296**	.161**
RCQ70_STAI_State_Pleasant	-.399**	.233**	-.141**	-.248**	-.263**	-.308**	.142**
RCQ71_STAI_Trait_Pleasant	-.368**	.232**	-.093*	-.293**	-.324**	-.365**	.217**
Q72_STAI_Trait_NervousRestless	-.353**	.277**	-.207**	-.229**	-.248**	-.301**	.088*
RCQ73_STAI_Trait_SatisfiedwSelf	-.340**	.206**	-0.088	-.243**	-.325**	-.351**	.209**
Q74_STAI_Trait_HappyComparison	-.305**	.234**	-.136**	-.201**	-.241**	-.332**	.257**
Q75_STAI_Trait_Faiure	-.233**	.183**	-.098*	-.197**	-.243**	-.301**	.242**
RCQ76_STAI_Trait_Rested	-.419**	.315**	-.320**	-.222**	-.244**	-.299**	.166**
RCQ77_STAI_Trait_Calm	-.281**	.183**	-.091*	-.222**	-.237**	-.294**	.149**
Q78_STAI_Trait_Overwhelmed	-.380**	.331**	-.215**	-.237**	-.192**	-.294**	.226**
Q79:STAI_Trait_Worry	-.250**	.227**	-.135**	-.195**	-.192**	-.210**	.116*
RCQ80_STAI_Trait_Happy	-.392**	.239**	-.147**	-.288**	-.335**	-.358**	.224**
Q81_STAI_Trait_DisturbingThoughts	-.219**	.116*	-0.039	-.179**	-.199**	-.235**	.230**
Q82_STAI_Trait_LackSelfConfidence	-.152**	.183**	-0.052	-.200**	-.221**	-.287**	.152**
RCQ83_STAI_Trait_Secure	-.325**	.160**	-.099*	-.245**	-.297**	-.332**	.261**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.258**	.151**	-0.056	-.206**	-.254**	-.202**	.163**
Q85_STAI_Trait_Inadequate	-.218**	.192**	-0.038	-.185**	-.270**	-.339**	.240**
RCQ86_STAI_Trait_Content	-.419**	.274**	-.165**	-.258**	-.296**	-.346**	.171**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q87_STAI_Trait_Rumination	-.201**	.185**	-.092*	-.144**	-.131**	-.181**	.207**
Q88_STAI_Trait_Disappointments	-.226**	.213**	-.132**	-.144**	-.186**	-.167**	.157**
RCQ89_STAI_Trait_SteadyPerson	-.304**	.184**	-0.083	-.238**	-.254**	-.273**	.143**
Q90_STAI_Trait_TensionTurmoil	-.265**	.301**	-.125**	-.212**	-.223**	-.213**	.185**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q22	Q23	Q24	Q25	Q26	Q27	Q28
Q22_CommunityBelongingFeelings	1						
Q23_TrustNeighbors	.385**	1					
Q24_TrustBusinessesinCommunity	.335**	.500**	1				
Q25_BelieveWalletReturned	.332**	.494**	.325**	1			
Q26_SatisfactionwPersonalSafety	.254**	.301**	.250**	.329**	1		
Q27_FrequencyofVolunteering	-.186**	-0.033	0.001	-0.065	-0.031	1	
Q28_FrequencyofDonatingMoney	-.105*	-0.043	0.009	-.133**	-0.087	.329**	1
Q29_SatisfiedwPersonalRelationships	.382**	.235**	.241**	.232**	.185**	-.105*	-0.065
Q30_PeopleinMyLifeCareAbtMe	.319**	.181**	.185**	0.083	.224**	-0.076	-0.031
Q31_FeltLoved	.316**	.233**	.230**	.154**	.221**	-0.03	-0.027
Q32_FeltLonely	-.302**	-.223**	-.210**	-.230**	-.217**	0.031	.148**
Q33_HealthyPhysicalEnvironment	.325**	.225**	.273**	.230**	.239**	-.112*	-0.009
Q34_SatisfactionwNaturalEnvironment	.248**	.241**	.199**	.198**	.206**	0.045	0.013
Q35_Nature	.282**	.230**	.253**	.174**	.262**	0.033	-0.002
Q36_AirQualityinEnviro	.199**	.313**	.270**	.183**	.349**	-0.043	-0.003
Q37_CorruptioninGovernment	-.186**	-.164**	-.209**	-.176**	-.212**	0.02	-0.009
Q38_PublicOfficials	.276**	.239**	.298**	.166**	.177**	0.003	-0.001
Q39_NationalGovernment	.230**	.229**	.222**	.103*	.091*	0.021	0.084
Q40_LocalGovernment	.176**	.246**	.318**	0.078	.144**	0.023	0.003
Q41_StressAbtFinances	.230**	.222**	.148**	.263**	.235**	-0.051	-.140**
Q42_LivingPaychecktoPaycheck	.159**	.146**	.097*	.190**	.171**	-0.063	-0.022
Q43_AteLessBcFinances	.208**	.144**	.144**	.124**	.236**	-0.019	-0.086
Q44_HaveEnoughMoney	.287**	.246**	.198**	.289**	.230**	-.153**	-.179**
Q45_SatisfiedwWorkLife	.255**	.167**	.183**	.138**	.226**	-.090*	-0.026

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q22	Q23	Q24	Q25	Q26	Q27	Q28
Q46_WorkLifeBalance	.232**	.194**	.216**	.109*	.253**	0.042	0.086
Q47_FindWorkInteresting	.283**	.156**	.165**	.138**	.200**	-.163**	-.126**
Q48_FeelGetPaidAppInJob	0.055	.160**	.146**	0.051	.167**	0.016	0.021
Q49_ProductiveInJob	.239**	.182**	.178**	.136**	.221**	-0.088	-0.008
Q50_AutonomyInJob	.185**	.136**	.143**	.139**	.200**	-0.018	-0.074
RCQ51_STAI_State_Calm	-.226**	-.227**	-.193**	-.186**	-.254**	.090*	0.062
RCQ52_STAI_State_Secure	-.320**	-.249**	-.247**	-.238**	-.334**	.113*	.095*
Q53_STAI_State_Tense	-.231**	-.221**	-.242**	-.201**	-.234**	0.017	0.036
Q54_STAI_State_Strained	-.203**	-.181**	-.229**	-.132**	-.130**	0.037	-0.008
RCQ55_STAI_State_Ease	-.296**	-.228**	-.291**	-.212**	-.234**	0.049	0.073
Q56_STAI_State_Upset	-.172**	-.157**	-.198**	-.152**	-.239**	0.066	0.051
Q57_STAI_State_Worrying	-.238**	-.179**	-.203**	-.168**	-.231**	.126**	0.071
RCQ58_STAI_State_Satisfied	-.251**	-.177**	-.268**	-.170**	-.215**	.108*	.141**
Q59_STAI_State_Frightened	-.244**	-.207**	-.247**	-.124**	-.229**	0.082	0.033
RCQ60_STAI_State_Comfortable	-.327**	-.231**	-.309**	-.237**	-.261**	0.078	.106*
RCQ61_STAI_State_SelfConfident	-.330**	-.223**	-.247**	-.202**	-.208**	.137**	0.074
Q62_STAI_State_Nervous	-.181**	-.170**	-.194**	-.118**	-.190**	.099*	.100*
Q63_STAI_State_Jittery	-.164**	-.159**	-.157**	-.162**	-.208**	0.042	0.051
Q64_STAI_State_Indecisive	-.188**	-.155**	-.107*	-.104*	-.117**	0.083	.103*
RCQ65_STAI_State_Relaxed	-.204**	-.224**	-.246**	-.195**	-.211**	0.043	0.023
RCQ66_STAI_State_Content	-.267**	-.214**	-.259**	-.194**	-.211**	.152**	.112*
Q67_STAI_State_Worried	-.234**	-.165**	-.196**	-.198**	-.173**	0.065	.103*
Q68_STAI_State_Confused	-.158**	-.131**	-.171**	-.118**	-.115*	0.083	0.021

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q22	Q23	Q24	Q25	Q26	Q27	Q28
RCQ69_STAI_State_Steady	-.316**	-.238**	-.273**	-.250**	-.229**	.159**	.138**
RCQ70_STAI_State_Pleasant	-.319**	-.225**	-.296**	-.208**	-.227**	.140**	.163**
RCQ71_STAI_Trait_Pleasant	-.336**	-.285**	-.300**	-.203**	-.252**	.108*	.112*
Q72_STAI_Trait_NervousRestless	-.209**	-.235**	-.224**	-.205**	-.194**	0.065	.173**
RCQ73_STAI_Trait_SatisfiedwSelf	-.353**	-.307**	-.325**	-.272**	-.257**	0.084	.094*
Q74_STAI_Trait_HappyComparison	-.293**	-.210**	-.225**	-.178**	-.195**	0.082	0.062
Q75_STAI_Trait_Faiure	-.307**	-.203**	-.252**	-.209**	-.168**	.110*	0.071
RCQ76_STAI_Trait_Rested	-.194**	-.178**	-.256**	-.152**	-.174**	0.03	0.061
RCQ77_STAI_Trait_Calm	-.232**	-.225**	-.193**	-.181**	-.185**	0.063	.120**
Q78_STAI_Trait_Overwhelmed	-.220**	-.208**	-.224**	-.186**	-.215**	0.061	0.043
Q79:STAI_Trait_Worry	-.128**	-.180**	-.165**	-.123**	-.158**	0.078	.092*
RCQ80_STAI_Trait_Happy	-.351**	-.256**	-.321**	-.221**	-.259**	.130**	.091*
Q81_STAI_Trait_DisturbingThoughts	-.321**	-.166**	-.231**	-.185**	-.125**	.129**	.130**
Q82_STAI_Trait_LackSelfConfidence	-.294**	-.199**	-.226**	-.171**	-.163**	.099*	.107*
RCQ83_STAI_Trait_Secure	-.374**	-.314**	-.297**	-.257**	-.315**	.161**	.139**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.204**	-.251**	-.202**	-.209**	-.164**	0.085	.159**
Q85_STAI_Trait_Inadequate	-.354**	-.232**	-.270**	-.226**	-.138**	0.062	0.016
RCQ86_STAI_Trait_Content	-.324**	-.290**	-.327**	-.197**	-.226**	.097*	0.088
Q87_STAI_Trait_Rumination	-.222**	-.141**	-.177**	-.098*	-.186**	0.076	.131**
Q88_STAI_Trait_Disappointments	-.179**	-.160**	-.158**	-.091*	-.174**	0.046	.108*
RCQ89_STAI_Trait_SteadyPerson	-.263**	-.229**	-.225**	-.182**	-.288**	.143**	.162**
Q90_STAI_Trait_TensionTurmoil	-.239**	-.152**	-.213**	-.150**	-.177**	0.058	0.071

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q29	Q30	Q31	Q32	Q33	Q34	Q35
Q29_SatisfiedwPersonalRelationships	1						
Q30_PeopleinMyLifeCareAbtMe	.580**	1					
Q31_FeltLoved	.570**	.587**	1				
Q32_FeltLonely	-.495**	-.476**	-.515**	1			
Q33_HealthyPhysicalEnvironment	.395**	.351**	.326**	-.353**	1		
Q34_SatisfactionwNaturalEnvironment	.177**	.108*	.171**	-.141**	.245**	1	
Q35_Nature	.190**	.174**	.180**	-.165**	.267**	.501**	1
Q36_AirQualityinEnviro	.116**	.155**	.131**	-.134**	.281**	.407**	.454**
Q37_CorruptioninGovernment	-.140**	-.129**	-0.085	.158**	-.170**	-.141**	-.169**
Q38_PublicOfficials	.164**	.155**	.172**	-.173**	.173**	.233**	.200**
Q39_NationalGovernment	.185**	.198**	.171**	-.192**	.184**	.230**	.274**
Q40_LocalGovernment	.158**	.180**	.193**	-.163**	.158**	.205**	.215**
Q41_StressAbtFinances	.271**	.217**	.209**	-.299**	.333**	.176**	.161**
Q42_LivingPaychecktoPaycheck	.210**	.193**	.142**	-.231**	.244**	.091*	.121**
Q43_AteLessBcFinances	.225**	.232**	.214**	-.354**	.324**	.097*	.129**
Q44_HaveEnoughMoney	.286**	.220**	.219**	-.306**	.294**	0.076	.202**
Q45_SatisfiedwWorkLife	.243**	.208**	.261**	-.227**	.212**	.188**	.173**
Q46_WorkLifeBalance	.265**	.260**	.293**	-.280**	.274**	.235**	.253**
Q47_FindWorkInteresting	.291**	.314**	.270**	-.311**	.231**	.122**	.125**
Q48_FeelGetPaidAppInJob	.107*	.101*	.110*	-.090*	.154**	.138**	.125**
Q49_ProductiveInJob	.271**	.221**	.243**	-.224**	.221**	.216**	.249**
Q50_AutonomyInJob	.163**	.212**	.176**	-.155**	.130**	.163**	.172**
RCQ51_STAI_State_Calm	-.309**	-.268**	-.277**	.352**	-.281**	-.134**	-.171**
RCQ52_STAI_State_Secure	-.465**	-.476**	-.411**	.477**	-.431**	-.151**	-.238**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q29	Q30	Q31	Q32	Q33	Q34	Q35
Q53_STAI_State_Tense	-.323**	-.294**	-.338**	.448**	-.337**	-.156**	-.192**
Q54_STAI_State_Strained	-.345**	-.301**	-.282**	.417**	-.278**	-.162**	-.136**
RCQ55_STAI_State_Ease	-.403**	-.338**	-.339**	.403**	-.361**	-.201**	-.275**
Q56_STAI_State_Upset	-.422**	-.383**	-.375**	.468**	-.325**	-.163**	-.161**
Q57_STAI_State_Worrying	-.354**	-.289**	-.372**	.459**	-.361**	-.166**	-.197**
RCQ58_STAI_State_Satisfied	-.502**	-.428**	-.438**	.490**	-.332**	-.185**	-.231**
Q59_STAI_State_Frightened	-.261**	-.316**	-.277**	.343**	-.337**	-.133**	-.203**
RCQ60_STAI_State_Comfortable	-.452**	-.389**	-.382**	.454**	-.386**	-.212**	-.254**
RCQ61_STAI_State_SelfConfident	-.442**	-.433**	-.447**	.499**	-.379**	-.172**	-.210**
Q62_STAI_State_Nervous	-.301**	-.275**	-.273**	.424**	-.284**	-.158**	-.213**
Q63_STAI_State_Jittery	-.220**	-.177**	-.172**	.298**	-.245**	-.098*	-.179**
Q64_STAI_State_Indecisive	-.317**	-.281**	-.213**	.311**	-.184**	-0.035	-.090*
RCQ65_STAI_State_Relaxed	-.336**	-.274**	-.281**	.388**	-.320**	-.226**	-.272**
RCQ66_STAI_State_Content	-.509**	-.373**	-.399**	.446**	-.338**	-.146**	-.224**
Q67_STAI_State_Worried	-.360**	-.292**	-.268**	.428**	-.270**	-.159**	-.185**
Q68_STAI_State_Confused	-.333**	-.275**	-.234**	.399**	-.241**	-0.047	-0.069
RCQ69_STAI_State_Steady	-.452**	-.382**	-.401**	.469**	-.408**	-.178**	-.257**
RCQ70_STAI_State_Pleasant	-.469**	-.448**	-.463**	.470**	-.436**	-.192**	-.257**
RCQ71_STAI_Trait_Pleasant	-.452**	-.476**	-.531**	.531**	-.428**	-.186**	-.218**
Q72_STAI_Trait_NervousRestless	-.301**	-.256**	-.315**	.465**	-.293**	-.101*	-.196**
RCQ73_STAI_Trait_SatisfiedwSelf	-.525**	-.472**	-.496**	.541**	-.412**	-.207**	-.253**
Q74_STAI_Trait_HappyComparison	-.464**	-.414**	-.436**	.585**	-.353**	-.117**	-.164**
Q75_STAI_Trait_Faiure	-.506**	-.466**	-.425**	.575**	-.380**	-.148**	-.175**
RCQ76_STAI_Trait_Rested	-.259**	-.312**	-.279**	.331**	-.311**	-.193**	-.239**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q29	Q30	Q31	Q32	Q33	Q34	Q35
RCQ77_STAI_Trait_Calm	-.324**	-.265**	-.300**	.397**	-.349**	-.195**	-.167**
Q78_STAI_Trait_Overwhelmed	-.354**	-.360**	-.364**	.474**	-.376**	-.113*	-.122**
Q79:STAI_Trait_Worry	-.225**	-.199**	-.193**	.354**	-.266**	-.130**	-.092*
RCQ80_STAI_Trait_Happy	-.593**	-.480**	-.560**	.518**	-.466**	-.208**	-.241**
Q81_STAI_Trait_DisturbingThoughts	-.443**	-.370**	-.332**	.393**	-.343**	-0.068	-.120**
Q82_STAI_Trait_LackSelfConfidence	-.396**	-.376**	-.405**	.507**	-.352**	-.160**	-.181**
RCQ83_STAI_Trait_Secure	-.487**	-.456**	-.489**	.518**	-.484**	-.239**	-.231**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.274**	-.286**	-.246**	.280**	-.254**	-0.076	-.159**
Q85_STAI_Trait_Inadequate	-.496**	-.433**	-.426**	.557**	-.385**	-.200**	-.192**
RCQ86_STAI_Trait_Content	-.498**	-.403**	-.442**	.534**	-.401**	-.225**	-.265**
Q87_STAI_Trait_Rumination	-.331**	-.296**	-.310**	.433**	-.286**	-.120**	-.120**
Q88_STAI_Trait_Disappointments	-.310**	-.282**	-.303**	.408**	-.245**	-.104*	-.129**
RCQ89_STAI_Trait_SteadyPerson	-.409**	-.393**	-.394**	.450**	-.417**	-.176**	-.208**
Q90_STAI_Trait_TensionTurmoil	-.408**	-.334**	-.331**	.462**	-.350**	-.141**	-.177**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q36	Q37	Q38	Q39	Q40	Q41	Q42
Q36_AirQualityinEnviro	1						
Q37_CorruptioninGovernment	-.149**	1					
Q38_PublicOfficials	.176**	-.369**	1				
Q39_NationalGovernment	.215**	-.219**	.322**	1			
Q40_LocalGovernment	.174**	-.350**	.511**	.514**	1		
Q41_StressAbtFinances	.177**	-.194**	.188**	.146**	.179**	1	
Q42_LivingPaychecktoPaycheck	.152**	-.174**	.182**	.121**	.125**	.620**	1
Q43_AteLessBcFinances	.179**	-.181**	.173**	.140**	0.05	.491**	.492**
Q44_HaveEnoughMoney	.193**	-.181**	.181**	.176**	.170**	.607**	.533**
Q45_SatisfiedwWorkLife	.158**	-.142**	.142**	0.073	0.083	.339**	.222**
Q46_WorkLifeBalance	.245**	-.110*	.234**	.191**	.173**	.353**	.210**
Q47_FindWorkInteresting	.091*	-0.077	.098*	0.041	0.05	.301**	.154**
Q48_FeelGetPaidAppInJob	.158**	-0.06	.092*	.168**	.119**	.258**	.252**
Q49_ProductiveInJob	.209**	-0.079	.143**	.135**	.120**	.257**	.207**
Q50_AutonomyInJob	.220**	0.001	0.018	0.086	0.053	.265**	.182**
RCQ51_STAI_State_Calm	-.149**	.183**	-.193**	-.104*	-.204**	-.368**	-.316**
RCQ52_STAI_State_Secure	-.257**	.125**	-.198**	-.144**	-.175**	-.369**	-.387**
Q53_STAI_State_Tense	-.109*	.170**	-.202**	-.152**	-.231**	-.335**	-.218**
Q54_STAI_State_Strained	-.134**	.189**	-.198**	-.111*	-.163**	-.374**	-.251**
RCQ55_STAI_State_Ease	-.209**	.177**	-.235**	-.196**	-.232**	-.397**	-.347**
Q56_STAI_State_Upset	-.130**	.197**	-.169**	-.112*	-.173**	-.304**	-.225**
Q57_STAI_State_Worrying	-.161**	.189**	-.179**	-.132**	-.174**	-.393**	-.261**
RCQ58_STAI_State_Satisfied	-.209**	.177**	-.198**	-.164**	-.197**	-.402**	-.310**
Q59_STAI_State_Frightened	-.187**	.214**	-.151**	-.186**	-.217**	-.306**	-.216**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q36	Q37	Q38	Q39	Q40	Q41	Q42
RCQ60_STAI_State_Comfortable	-.216**	.180**	-.227**	-.237**	-.278**	-.392**	-.320**
RCQ61_STAI_State_SelfConfident	-.188**	0.081	-.160**	-.255**	-.184**	-.338**	-.254**
Q62_STAI_State_Nervous	-.133**	.158**	-.163**	-.229**	-.236**	-.333**	-.236**
Q63_STAI_State_Jittery	-.123**	.181**	-.128**	-.107*	-.151**	-.252**	-.188**
Q64_STAI_State_Indecisive	-.096*	.128**	-0.088	-0.071	-.117**	-.238**	-.178**
RCQ65_STAI_State_Relaxed	-.204**	.181**	-.239**	-.195**	-.262**	-.393**	-.343**
RCQ66_STAI_State_Content	-.217**	.168**	-.225**	-.163**	-.213**	-.402**	-.319**
Q67_STAI_State_Worried	-.135**	.150**	-.197**	-.217**	-.193**	-.457**	-.304**
Q68_STAI_State_Confused	-0.08	.132**	-.116**	-.115*	-.153**	-.258**	-.203**
RCQ69_STAI_State_Steady	-.201**	.181**	-.261**	-.200**	-.181**	-.389**	-.317**
RCQ70_STAI_State_Pleasant	-.167**	.162**	-.275**	-.219**	-.228**	-.376**	-.282**
RCQ71_STAI_Trait_Pleasant	-.209**	.168**	-.269**	-.221**	-.223**	-.399**	-.289**
Q72_STAI_Trait_NervousRestless	-.152**	.173**	-.181**	-.191**	-.213**	-.378**	-.218**
RCQ73_STAI_Trait_SatisfiedwSelf	-.209**	.115*	-.207**	-.240**	-.255**	-.418**	-.336**
Q74_STAI_Trait_HappyComparison	-.149**	.095*	-.171**	-.190**	-.117**	-.398**	-.275**
Q75_STAI_Trait_Faiure	-.134**	.160**	-.158**	-.211**	-.219**	-.399**	-.293**
RCQ76_STAI_Trait_Rested	-.178**	.103*	-.178**	-.189**	-.188**	-.392**	-.331**
RCQ77_STAI_Trait_Calm	-.180**	.139**	-.229**	-.183**	-.158**	-.393**	-.264**
Q78_STAI_Trait_Overwhelmed	-.127**	.171**	-.212**	-.232**	-.216**	-.482**	-.293**
Q79:STAI_Trait_Worry	-.154**	.090*	-.115*	-.101*	-.114*	-.355**	-.217**
RCQ80_STAI_Trait_Happy	-.215**	.166**	-.236**	-.204**	-.264**	-.408**	-.280**
Q81_STAI_Trait_DisturbingThoughts	-0.083	.159**	-.107*	-.180**	-.161**	-.290**	-.146**
Q82_STAI_Trait_LackSelfConfidence	-.154**	0.079	-.120**	-.182**	-.151**	-.317**	-.219**
RCQ83_STAI_Trait_Secure	-.267**	.175**	-.207**	-.208**	-.187**	-.452**	-.407**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q36	Q37	Q38	Q39	Q40	Q41	Q42
RCQ84_STAI_Trait_MakeDecisionsEasily	-.192**	.099*	-.153**	-.151**	-.164**	-.268**	-.178**
Q85_STAI_Trait_Inadequate	-.095*	.185**	-.177**	-.248**	-.258**	-.370**	-.294**
RCQ86_STAI_Trait_Content	-.226**	.151**	-.240**	-.206**	-.185**	-.452**	-.365**
Q87_STAI_Trait_Rumination	-.138**	.124**	-.146**	-.175**	-.155**	-.286**	-.186**
Q88_STAI_Trait_Disappointments	-.114*	.092*	-.106*	-.101*	-.145**	-.329**	-.184**
RCQ89_STAI_Trait_SteadyPerson	-.230**	.161**	-.210**	-.177**	-.196**	-.419**	-.323**
Q90_STAI_Trait_TensionTurmoil	-.175**	.145**	-.158**	-.199**	-.181**	-.361**	-.231**

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q43	Q44	Q45	Q46	Q47	Q48	Q49
Q43_AteLessBcFinances	1						
Q44_HaveEnoughMoney	.473**	1					
Q45_SatisfiedwWorkLife	.266**	.264**	1				
Q46_WorkLifeBalance	.313**	.270**	.513**	1			
Q47_FindWorkInteresting	.280**	.295**	.597**	.310**	1		
Q48_FeelGetPaidAppInJob	.197**	.203**	.400**	.360**	.231**	1	
Q49_ProductiveInJob	.250**	.316**	.523**	.360**	.389**	.405**	1
Q50_AutonomyInJob	.239**	.190**	.453**	.313**	.432**	.355**	.450**
RCQ51_STAI_State_Calm	-.281**	-.314**	-.288**	-.303**	-.268**	-.153**	-.234**
RCQ52_STAI_State_Secure	-.414**	-.385**	-.320**	-.311**	-.357**	-.180**	-.331**
Q53_STAI_State_Tense	-.299**	-.287**	-.294**	-.345**	-.273**	-.143**	-.270**
Q54_STAI_State_Strained	-.293**	-.250**	-.296**	-.366**	-.241**	-.175**	-.282**
RCQ55_STAI_State_Ease	-.340**	-.353**	-.287**	-.381**	-.289**	-.193**	-.254**
Q56_STAI_State_Upset	-.342**	-.289**	-.317**	-.326**	-.321**	-.128**	-.258**
Q57_STAI_State_Worrying	-.351**	-.371**	-.284**	-.298**	-.329**	-.125**	-.206**
RCQ58_STAI_State_Satisfied	-.329**	-.350**	-.349**	-.380**	-.355**	-.203**	-.308**
Q59_STAI_State_Frightened	-.328**	-.290**	-.259**	-.246**	-.271**	-.110*	-.277**
RCQ60_STAI_State_Comfortable	-.299**	-.380**	-.293**	-.282**	-.286**	-.140**	-.299**
RCQ61_STAI_State_SelfConfident	-.304**	-.278**	-.312**	-.379**	-.327**	-.146**	-.290**
Q62_STAI_State_Nervous	-.269**	-.326**	-.250**	-.304**	-.274**	-.146**	-.264**
Q63_STAI_State_Jittery	-.223**	-.256**	-.214**	-.274**	-.186**	-.145**	-.207**
Q64_STAI_State_Indecisive	-.170**	-.218**	-.179**	-.162**	-.284**	-0.044	-.179**
RCQ65_STAI_State_Relaxed	-.278**	-.299**	-.243**	-.367**	-.237**	-.184**	-.248**
RCQ66_STAI_State_Content	-.352**	-.377**	-.310**	-.353**	-.349**	-.222**	-.294**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q43	Q44	Q45	Q46	Q47	Q48	Q49
Q67_STAI_State_Worried	-.369**	-.348**	-.273**	-.337**	-.340**	-.198**	-.295**
Q68_STAI_State_Confused	-.259**	-.219**	-.233**	-.222**	-.251**	-.122**	-.215**
RCQ69_STAI_State_Steady	-.376**	-.381**	-.304**	-.294**	-.333**	-.172**	-.254**
RCQ70_STAI_State_Pleasant	-.361**	-.370**	-.331**	-.339**	-.359**	-.210**	-.278**
RCQ71_STAI_Trait_Pleasant	-.335**	-.346**	-.302**	-.306**	-.367**	-.158**	-.253**
Q72_STAI_Trait_NervousRestless	-.291**	-.285**	-.265**	-.316**	-.288**	-0.082	-.202**
RCQ73_STAI_Trait_SatisfiedwSelf	-.266**	-.330**	-.317**	-.361**	-.359**	-.174**	-.294**
Q74_STAI_Trait_HappyComparison	-.312**	-.292**	-.307**	-.330**	-.371**	-.146**	-.265**
Q75_STAI_Trait_Faiure	-.350**	-.347**	-.309**	-.378**	-.347**	-.105*	-.273**
RCQ76_STAI_Trait_Rested	-.277**	-.291**	-.224**	-.377**	-.246**	-.145**	-.226**
RCQ77_STAI_Trait_Calm	-.308**	-.271**	-.191**	-.249**	-.270**	-.118**	-.194**
Q78_STAI_Trait_Overwhelmed	-.402**	-.354**	-.302**	-.433**	-.319**	-.143**	-.249**
Q79:STAI_Trait_Worry	-.254**	-.219**	-.181**	-.202**	-.258**	-.115*	-0.086
RCQ80_STAI_Trait_Happy	-.333**	-.397**	-.339**	-.375**	-.404**	-.156**	-.316**
Q81_STAI_Trait_DisturbingThoughts	-.287**	-.326**	-.208**	-.201**	-.268**	-0.054	-.175**
Q82_STAI_Trait_LackSelfConfidence	-.260**	-.248**	-.240**	-.297**	-.258**	-.109*	-.277**
RCQ83_STAI_Trait_Secure	-.376**	-.411**	-.299**	-.304**	-.342**	-.204**	-.299**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.182**	-.280**	-.182**	-.139**	-.254**	-0.087	-.144**
Q85_STAI_Trait_Inadequate	-.279**	-.339**	-.249**	-.264**	-.277**	-.115*	-.273**
RCQ86_STAI_Trait_Content	-.393**	-.391**	-.301**	-.352**	-.360**	-.248**	-.285**
Q87_STAI_Trait_Rumination	-.268**	-.235**	-.157**	-.250**	-.255**	-.106*	-.104*
Q88_STAI_Trait_Disappointments	-.239**	-.244**	-.202**	-.225**	-.245**	-0.073	-.161**
RCQ89_STAI_Trait_SteadyPerson	-.335**	-.329**	-.284**	-.295**	-.311**	-.189**	-.254**
Q90_STAI_Trait_TensionTurmoil	-.315**	-.287**	-.240**	-.317**	-.298**	-.158**	-.209**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q50	RCQ51	RCQ52	Q53	Q54	RCQ55	Q56
Q50_AutonomyInJob	1						
RCQ51_STAI_State_Calm	-.221**	1					
RCQ52_STAI_State_Secure	-.278**	.599**	1				
Q53_STAI_State_Tense	-.195**	.593**	.513**	1			
Q54_STAI_State_Strained	-.168**	.520**	.398**	.579**	1		
RCQ55_STAI_State_Ease	-.209**	.671**	.586**	.580**	.527**	1	
Q56_STAI_State_Upset	-.166**	.479**	.500**	.537**	.543**	.450**	1
Q57_STAI_State_Worrying	-.167**	.437**	.426**	.520**	.502**	.497**	.505**
RCQ58_STAI_State_Satisfied	-.238**	.530**	.570**	.475**	.481**	.662**	.481**
Q59_STAI_State_Frightened	-.188**	.420**	.440**	.488**	.442**	.423**	.575**
RCQ60_STAI_State_Comfortable	-.207**	.615**	.628**	.545**	.464**	.675**	.459**
RCQ61_STAI_State_SelfConfident	-.221**	.464**	.564**	.418**	.352**	.511**	.422**
Q62_STAI_State_Nervous	-.214**	.555**	.454**	.609**	.534**	.526**	.542**
Q63_STAI_State_Jittery	-.167**	.474**	.373**	.509**	.408**	.388**	.427**
Q64_STAI_State_Indecisive	-.109*	.269**	.290**	.356**	.359**	.339**	.399**
RCQ65_STAI_State_Relaxed	-.181**	.688**	.544**	.557**	.528**	.739**	.410**
RCQ66_STAI_State_Content	-.265**	.550**	.590**	.443**	.467**	.616**	.460**
Q67_STAI_State_Worried	-.242**	.522**	.465**	.612**	.539**	.556**	.550**
Q68_STAI_State_Confused	-.163**	.399**	.415**	.449**	.446**	.416**	.601**
RCQ69_STAI_State_Steady	-.217**	.584**	.570**	.477**	.439**	.641**	.450**
RCQ70_STAI_State_Pleasant	-.204**	.553**	.561**	.529**	.453**	.658**	.488**
RCQ71_STAI_Trait_Pleasant	-.221**	.528**	.567**	.499**	.452**	.567**	.498**
Q72_STAI_Trait_NervousRestless	-.192**	.498**	.450**	.575**	.458**	.538**	.415**
RCQ73_STAI_Trait_SatisfiedwSelf	-.241**	.461**	.543**	.456**	.415**	.557**	.465**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q50	RCQ51	RCQ52	Q53	Q54	RCQ55	Q56
Q74_STAI_Trait_HappyComparison	-.263**	.397**	.461**	.444**	.469**	.461**	.466**
Q75_STAI_Trait_Faiure	-.185**	.397**	.473**	.481**	.453**	.482**	.527**
RCQ76_STAI_Trait_Rested	-.205**	.455**	.417**	.392**	.418**	.541**	.298**
RCQ77_STAI_Trait_Calm	-.170**	.501**	.385**	.403**	.399**	.502**	.424**
Q78_STAI_Trait_Overwhelmed	-.253**	.440**	.463**	.503**	.505**	.511**	.492**
Q79:STAI_Trait_Worry	-.183**	.428**	.323**	.413**	.339**	.416**	.365**
RCQ80_STAI_Trait_Happy	-.233**	.505**	.561**	.485**	.465**	.579**	.499**
Q81_STAI_Trait_DisturbingThoughts	-.160**	.241**	.340**	.381**	.368**	.355**	.423**
Q82_STAI_Trait_LackSelfConfidence	-.216**	.399**	.453**	.447**	.374**	.434**	.400**
RCQ83_STAI_Trait_Secure	-.248**	.484**	.704**	.461**	.420**	.552**	.471**
RCQ84_STAI_Trait_MakeDecisionsEasily	-.184**	.291**	.295**	.295**	.258**	.366**	.285**
Q85_STAI_Trait_Inadequate	-.140**	.390**	.442**	.492**	.430**	.501**	.433**
RCQ86_STAI_Trait_Content	-.228**	.517**	.582**	.489**	.464**	.650**	.488**
Q87_STAI_Trait_Rumination	-.109*	.393**	.341**	.440**	.371**	.449**	.389**
Q88_STAI_Trait_Disappointments	-.127**	.405**	.310**	.412**	.403**	.419**	.377**
RCQ89_STAI_Trait_SteadyPerson	-.257**	.525**	.491**	.459**	.415**	.507**	.486**
Q90_STAI_Trait_TensionTurmoil	-.186**	.451**	.407**	.517**	.477**	.506**	.434**

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q57	RCQ58	Q59	RCQ60	RCQ61	Q62	Q63
Q57_STAI_State_Worrying	1						
RCQ58_STAI_State_Satisfied	.508**	1					
Q59_STAI_State_Frightened	.511**	.403**	1				
RCQ60_STAI_State_Comfortable	.470**	.667**	.472**	1			
RCQ61_STAI_State_SelfConfident	.455**	.558**	.352**	.586**	1		
Q62_STAI_State_Nervous	.555**	.467**	.595**	.506**	.434**	1	
Q63_STAI_State_Jittery	.388**	.327**	.459**	.389**	.266**	.579**	1
Q64_STAI_State_Indecisive	.392**	.300**	.313**	.280**	.334**	.434**	.404**
RCQ65_STAI_State_Relaxed	.448**	.615**	.385**	.665**	.488**	.507**	.416**
RCQ66_STAI_State_Content	.471**	.694**	.331**	.674**	.524**	.420**	.292**
Q67_STAI_State_Worried	.637**	.503**	.558**	.508**	.431**	.680**	.486**
Q68_STAI_State_Confused	.450**	.429**	.493**	.374**	.359**	.505**	.390**
RCQ69_STAI_State_Steady	.466**	.619**	.361**	.651**	.562**	.458**	.309**
RCQ70_STAI_State_Pleasant	.504**	.668**	.374**	.668**	.585**	.482**	.339**
RCQ71_STAI_Trait_Pleasant	.562**	.649**	.410**	.635**	.599**	.461**	.310**
Q72_STAI_Trait_NervousRestless	.516**	.483**	.420**	.508**	.520**	.591**	.494**
RCQ73_STAI_Trait_SatisfiedwSelf	.502**	.646**	.364**	.604**	.674**	.435**	.306**
Q74_STAI_Trait_HappyComparison	.512**	.544**	.405**	.457**	.570**	.468**	.319**
Q75_STAI_Trait_Faiure	.505**	.524**	.474**	.506**	.579**	.471**	.355**
RCQ76_STAI_Trait_Rested	.341**	.513**	.243**	.462**	.376**	.355**	.254**
RCQ77_STAI_Trait_Calm	.425**	.473**	.351**	.449**	.530**	.421**	.289**
Q78_STAI_Trait_Overwhelmed	.564**	.524**	.442**	.459**	.489**	.495**	.355**
Q79:STAI_Trait_Worry	.467**	.327**	.355**	.312**	.382**	.466**	.304**
RCQ80_STAI_Trait_Happy	.562**	.678**	.427**	.625**	.610**	.484**	.300**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q57	RCQ58	Q59	RCQ60	RCQ61	Q62	Q63
Q81_STAI_Trait_DisturbingThoughts	.426**	.367**	.402**	.365**	.315**	.367**	.341**
Q82_STAI_Trait_LackSelfConfidence	.414**	.417**	.343**	.468**	.727**	.434**	.287**
RCQ83_STAI_Trait_Secure	.463**	.606**	.419**	.629**	.592**	.436**	.313**
RCQ84_STAI_Trait_MakeDecisionsEasily	.344**	.351**	.246**	.331**	.408**	.292**	.280**
Q85_STAI_Trait_Inadequate	.497**	.512**	.417**	.507**	.561**	.481**	.354**
RCQ86_STAI_Trait_Content	.518**	.683**	.379**	.660**	.623**	.479**	.325**
Q87_STAI_Trait_Rumination	.454**	.360**	.361**	.351**	.403**	.489**	.396**
Q88_STAI_Trait_Disappointments	.466**	.376**	.351**	.365**	.393**	.482**	.342**
RCQ89_STAI_Trait_SteadyPerson	.450**	.522**	.378**	.519**	.539**	.448**	.369**
Q90_STAI_Trait_TensionTurmoil	.562**	.475**	.379**	.454**	.494**	.549**	.429**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q64	RCQ65	RCQ66	Q67	Q68	RCQ69	RCQ70
Q64_STAI_State_Indecisive	1						
RCQ65_STAI_State_Relaxed	.263**	1					
RCQ66_STAI_State_Content	.303**	.654**	1				
Q67_STAI_State_Worried	.445**	.518**	.470**	1			
Q68_STAI_State_Confused	.492**	.362**	.375**	.515**	1		
RCQ69_STAI_State_Steady	.331**	.620**	.689**	.448**	.403**	1	
RCQ70_STAI_State_Pleasant	.331**	.603**	.687**	.501**	.415**	.749**	1
RCQ71_STAI_Trait_Pleasant	.368**	.559**	.600**	.463**	.456**	.627**	.722**
Q72_STAI_Trait_NervousRestless	.404**	.494**	.426**	.560**	.397**	.453**	.487**
RCQ73_STAI_Trait_SatisfiedwSelf	.336**	.547**	.597**	.437**	.421**	.592**	.618**
Q74_STAI_Trait_HappyComparison	.342**	.436**	.474**	.494**	.412**	.436**	.518**
Q75_STAI_Trait_Faiure	.364**	.424**	.502**	.479**	.419**	.477**	.533**
RCQ76_STAI_Trait_Rested	.202**	.546**	.450**	.393**	.245**	.418**	.463**
RCQ77_STAI_Trait_Calm	.310**	.523**	.438**	.425**	.338**	.540**	.487**
Q78_STAI_Trait_Overwhelmed	.355**	.457**	.473**	.562**	.454**	.489**	.512**
Q79:STAI_Trait_Worry	.398**	.374**	.297**	.468**	.358**	.331**	.342**
RCQ80_STAI_Trait_Happy	.373**	.545**	.602**	.494**	.432**	.604**	.686**
Q81_STAI_Trait_DisturbingThoughts	.303**	.250**	.333**	.394**	.350**	.294**	.375**
Q82_STAI_Trait_LackSelfConfidence	.350**	.397**	.422**	.402**	.373**	.462**	.512**
RCQ83_STAI_Trait_Secure	.297**	.528**	.596**	.438**	.424**	.625**	.609**
RCQ84_STAI_Trait_MakeDecisionsEasily	.570**	.319**	.347**	.305**	.367**	.422**	.410**
Q85_STAI_Trait_Inadequate	.384**	.424**	.461**	.489**	.437**	.451**	.495**
RCQ86_STAI_Trait_Content	.360**	.637**	.686**	.495**	.415**	.637**	.663**
Q87_STAI_Trait_Rumination	.388**	.387**	.297**	.453**	.383**	.351**	.387**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q64	RCQ65	RCQ66	Q67	Q68	RCQ69	RCQ70
Q88_STAI_Trait_Disappointments	.386**	.387**	.332**	.464**	.360**	.359**	.393**
RCQ89_STAI_Trait_SteadyPerson	.386**	.501**	.494**	.423**	.421**	.652**	.606**
Q90_STAI_Trait_TensionTurmoil	.438**	.482**	.435**	.598**	.426**	.442**	.501**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	RCQ71	Q72	RCQ73	Q74	Q75	RCQ76	RCQ77
RCQ71_STAI_Trait_Pleasant	1						
Q72_STAI_Trait_NervousRestless	.549**	1					
RCQ73_STAI_Trait_SatisfiedwSelf	.692**	.529**	1				
Q74_STAI_Trait_HappyComparison	.579**	.555**	.631**	1			
Q75_STAI_Trait_Faiure	.517**	.514**	.637**	.643**	1		
RCQ76_STAI_Trait_Rested	.501**	.455**	.479**	.405**	.346**	1	
RCQ77_STAI_Trait_Calm	.577**	.526**	.519**	.540**	.432**	.447**	1
Q78_STAI_Trait_Overwhelmed	.533**	.576**	.547**	.604**	.630**	.425**	.464**
Q79:STAI_Trait_Worry	.450**	.574**	.393**	.471**	.434**	.318**	.458**
RCQ80_STAI_Trait_Happy	.723**	.526**	.688**	.608**	.552**	.480**	.537**
Q81_STAI_Trait_DisturbingThoughts	.406**	.401**	.406**	.438**	.492**	.207**	.327**
Q82_STAI_Trait_LackSelfConfidence	.504**	.523**	.583**	.586**	.641**	.315**	.479**
RCQ83_STAI_Trait_Secure	.663**	.498**	.651**	.546**	.528**	.471**	.531**
RCQ84_STAI_Trait_MakeDecisionsEasily	.400**	.383**	.452**	.339**	.318**	.288**	.409**
Q85_STAI_Trait_Inadequate	.505**	.490**	.625**	.583**	.697**	.353**	.439**
RCQ86_STAI_Trait_Content	.730**	.540**	.705**	.584**	.538**	.541**	.593**
Q87_STAI_Trait_Rumination	.445**	.547**	.416**	.492**	.471**	.302**	.417**
Q88_STAI_Trait_Disappointments	.454**	.526**	.441**	.494**	.494**	.316**	.448**
RCQ89_STAI_Trait_SteadyPerson	.638**	.512**	.613**	.473**	.486**	.453**	.623**
Q90_STAI_Trait_TensionTurmoil	.524**	.585**	.537**	.537**	.523**	.390**	.475**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q78	Q79	RCQ80	Q81	Q82	RCQ83	RCQ84
Q78_STAI_Trait_Overwhelmed	1						
Q79:STAI_Trait_Worry	.491**	1					
RCQ80_STAI_Trait_Happy	.550**	.397**	1				
Q81_STAI_Trait_DisturbingThoughts	.408**	.363**	.420**	1			
Q82_STAI_Trait_LackSelfConfidence	.504**	.444**	.497**	.382**	1		
RCQ83_STAI_Trait_Secure	.509**	.358**	.674**	.388**	.523**	1	
RCQ84_STAI_Trait_MakeDecisionsEasily	.356**	.333**	.410**	.241**	.364**	.397**	1
Q85_STAI_Trait_Inadequate	.538**	.400**	.562**	.493**	.626**	.498**	.376**
RCQ86_STAI_Trait_Content	.541**	.457**	.721**	.385**	.531**	.703**	.404**
Q87_STAI_Trait_Rumination	.489**	.645**	.421**	.482**	.430**	.395**	.348**
Q88_STAI_Trait_Disappointments	.524**	.582**	.396**	.437**	.460**	.373**	.342**
RCQ89_STAI_Trait_SteadyPerson	.490**	.472**	.605**	.373**	.501**	.619**	.490**
Q90_STAI_Trait_TensionTurmoil	.581**	.582**	.539**	.421**	.479**	.469**	.423**

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 22. *Pearson Correlations: All 90 Items*

	Q85	RCQ86	Q87	Q88	RCQ89	Q90
Q85_STAI_Trait_Inadequate	1					
RCQ86_STAI_Trait_Content	.552**	1				
Q87_STAI_Trait_Rumination	.457**	.456**	1			
Q88_STAI_Trait_Disappointments	.484**	.461**	.612**	1		
RCQ89_STAI_Trait_SteadyPerson	.490**	.647**	.435**	.477**	1	
Q90_STAI_Trait_TensionTurmoil	.528**	.546**	.615**	.649**	.484**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

APPENDIX G

Details Regarding Attribution and Copyright Information of the Gross National Happiness Index

In order to assist with the interpretation of factors analysis results, items of the Round 4 version of the Gross National Happiness Index are listed verbatim within the results chapter of this dissertation and Appendices D and E, with permission from The Happiness Alliance and Musikanski et al. (2017), the creators of the GNHI. The GNHI is freely available online at happycounts.org. This researcher did not modify the survey items in any way. Within the 2017 article by Musikanski and colleagues, they state that the GNHI "was issued with a Creative Commons Attribution noncommercial (http://creativecommons.org/licenses/) license, meaning users could use it for any noncommercial purposes as long as they credit the Happiness Alliance" (p. 5).