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The Big Five Personality Types and Music Performance Anxiety in Collegiate Piano Students

Lindsey Brooke Chattin

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THE BIG FIVE PERSONALITY TYPES AND MUSIC PERFORMANCE ANXIETY
IN COLLEGIATE PIANO STUDENTS

by

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DEDICATION

To my family, whose endless support, words of encouragement, and love have inspired me and enabled me to pursue this degree. To my mom, Sherry Vickers: words cannot express how grateful I am for you, for all of the sacrifices you have made for me over the years, and the incredible relationship we have. To my dad, Wayne Vickers: thank you for your help in every way imaginable, from practical advice, to tough love, to always keeping me grounded, while fully believing in me. To my husband, Scott Chattin: thank you for being my best friend, for the hundreds of hours you have spent listening to me practice, and for motivating me to be my best. To my grandma, Ann Hooks: for your love, generosity, and instilling in me a firm belief in the importance of education. To my papa, Burvin Hooks: your strength, determination, passion for life, and tenacity encourage me to work harder and make the most out of each day. To Walden: your arrival provided incredible motivation as I completed this project, and I look forward to watching you learn and grow.

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ABSTRACT

The purpose of this study is to determine if relationships exist between the Big Five personality types and levels of music performance anxiety (MPA) in collegiate piano majors. Fifty-five ($N = 55$) collegiate music majors enrolled in private lessons in the fall 2017 semester participated in this quantitative study. Participants completed a survey consisting of three sections: demographic questions, the “International Personality Item Pool Big Five Factor Markers” questionnaire (Pettersson and Turkheimer, 2010), and the “Three-Dimensional Performance Anxiety Inventory” (Cheng, Hardy, and Markland, 2009).

The questionnaire had three primary focuses: (1) to collect demographic data and information of collegiate piano students at the University of South Carolina, (2) to learn about students’ personality types within the boundaries of the Big Five personality markers, and (3) to gain a clear understanding of students’ general feelings and responses to MPA. Survey results were analyzed to measure the relationships between each of the five personality types and five performance anxiety constructs.

Results of the study revealed several statistically significant correlations between (1) worry and self-focus, (2) worry and somatic tension, (3) somatic tension and self-focus, (4) neuroticism and somatic tension, (5) neuroticism and self-focus, (6) neuroticism and worry, (7) conscientiousness and somatic tension, and (8) openness and perceived control. Findings suggest that worry, self-focus, somatic tension, and

neuroticism affect performers negatively, while openness, conscientiousness, and perceived control likely help to alleviate MPA. Results of the *t*-test found that males reported higher levels of perceived control than females. Overall findings indicate that certain personality constructs studied in this research do have an impact on MPA, whether positive or negative. Interventions for MPA vary widely to include cognitive and behavioral therapies, meditation, mindfulness, pharmaceutical interventions, and proposed strategies to reduce self-focus, worry and somatic tension, while increasing openness, conscientiousness and perceived control.

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LIST OF ABBREVIATIONS

IRB..... Institutional Review Board for Human Research

MPA..... Music Performance Anxiety

SPSS..... Statistical Package for the Social Sciences

CHAPTER 1

INTRODUCTION AND REVIEW OF LITERATURE

1.1 INTRODUCTION

Music is an art predominantly shared through performance. Musicians from all disciplines take part in performance, whether through solo or group performance, teaching students to play and perform, appreciating and studying the performance of others, or composing original works to be performed. Most musicians have experienced some degree of performance-related anxiety, as music performance anxiety is “no respecter of age, experience or performance setting” (Kenny, 2006). Although music performance anxiety, hereafter referred to as MPA, has been researched more extensively in the last few decades, the commonality of MPA warrants additional study into possible causes and solutions.

Personalities are interwoven into all aspects of life and likely play a role in how musicians understand, interpret, and perform music. Research suggests that professionals who devote years of study to their discipline develop a specialized “profile” with certain characteristics that are unique to their field (Kemp, 1996). The same must hold true for musicians who willingly devote countless hours, often alone, perfecting their craft, earning them the title some may describe as “bold introverts” (ibid). Gaining a better understanding of the traits of musicians as a whole and, more specifically, individualized personality types, can deepen our understanding of the music and how we learn.

Naturally, some individuals find certain tasks to be more pleasurable, exciting, or easy, while others find the same tasks to be unenjoyable, tedious, or too challenging. Whether these differences are caused by genetic or environmental factors, the differences remain a part of the individual's mindset. Likewise, performers experience varying levels of MPA, indicating that the spectrum of physiological characteristics likely plays a role in how individuals experience symptoms of anxiety (Kenny, 2006). This study aimed to test whether these differences or personality traits have a meaningful bearing on one's level of performance anxiety.

1.2 PURPOSE OF THE STUDY

The purpose of this study was to determine if personality types within the "International Personality Item Pool Big Five Factor Markers" questionnaire (Pettersson and Turkheimer, 2010) influence a collegiate pianist's level of MPA through the "Three-Dimensional Performance Anxiety" questionnaire (Cheng, Hardy, and Markland, 2009). A second purpose of the study was to search for positive and negative correlations to seek potential solutions to help students and performers with high levels of MPA based on the needs of their individualized personality types.

1.3 NEED FOR THE STUDY

The majority of musicians have experienced varying levels of performance-related anxiety that has affected their performance to a certain extent. While some musicians report less anxiety or have developed coping strategies that channel their anxiety to produce positive outcomes, others find that music performance anxiety negatively affects their playing (Reubart, 1985).

Recent studies have offered interventions to alleviate negative effects of MPA, but few studies have looked to specific personality types within the Big Five as a possible contributor to MPA. Philosophy research has speculated that factors such as perfectionism, obsessive-compulsive disorder, neuroticism, and introversion, among others, influence a musician's likelihood of feeling anxiety before or during a performance (Sinden, 1999).

Though personality types and "trait theory" remain a subjective topic for discussion, many psychologists have reached agreement on the components of the Big Five as the most basic and reliable five elements of a person's personality (Kemp, 1996). Since personality traits influence our daily thoughts and actions, it would seem that certain personality traits would have a stronger impact on an individual's level of anxiety, and conversely, an individual's level of calmness in heightened stressful situations. Whereas some studies have been conducted on MPA and isolated traits such as perfectionism or locus of control, no studies to date have compared the results of the "International Personality Item Pool Big Five Factor Markers" questionnaire and the "Three-Dimensional Performance Anxiety Inventory" among college-level pianists. If collegiate music students are able to pinpoint aspects of their personality that may contribute to MPA, they may become better equipped to handle MPA more effectively. Additionally, music teachers who can recognize certain traits within their students may be able to help their students with an in-depth understanding of personality differences.

1.4 RESEARCH QUESTIONS

The following questions guided this study:

1. Do certain personality types positively or negatively correlate with dimensions of MPA?
2. Are specific personality types within the Big Five questionnaire more or less prone to be linked with MPA?
3. Do high scores in some personality types, such as Openness and Agreeableness, help to offset MPA?
4. Are commonly perceived thoughts regarding personality and MPA confirmed or found to be unusual?
5. If statistically significant correlations exist between the Big Five personality types and MPA, what interventions can be sought to relieve the negative effects of MPA?

1.5 LIMITATIONS OF THE STUDY

Both MPA and personality characteristics are multi-dimensional in nature (Sârbescu and Dorgo, 2014). A performer's level of anxiety often depends on a large number of factors, including preparation, difficulty of the repertoire, audience composition, and the significance of the event. Likewise, personality traits are complex, and characterizing an individual by a one-dimensional personality type would be too limited. In this study, the pianists' thoughts and general attitudes about MPA are limited to their answers in the "Three-Dimensional Performance Anxiety Inventory" that reflect their overall views on MPA rather than more subjective feelings regarding a specific performance. Personality types are limited to the five major personalities in the "International Personality Item Pool Big Five Markers" questionnaire.

1.6 RELATED LITERATURE

This study sought to draw connections between personality traits and MPA, as well as to explore potential solutions. The following review of literature includes a range of topics from the fields of psychology, sociology, philosophy, medical studies, and music performance. Selected topics include anxiety, personality types, temperaments of musicians, causes of MPA, and prevention and coping strategies.

Music psychology, particularly the study of personalities and their influence on the field of music, has gained popularity and attention in recent decades. As early as the 1930's, works such as Pratt's *The Meaning of Music* (1931), Diserens and Fine's *A Psychology of Music* (1937), Mursell's *The Psychology of Music* (1937), C. E. Seashore's *Psychology of Music* (1938), and Max Schoen's *The Psychology of Music* (1940), began exploring this field that binds together music and psychology research. Since the publication of these initial texts and collections of essays, music psychology has become a field with room for growth and study.

Scholars in the fields of both music and psychology have recently produced a number of noteworthy books. Kemp's *The Musical Temperament* (1996), which includes chapters on Introversion, Anxiety, Keyboard Players, and Music Teachers, to name a few, is an important contribution from an author who is both a well-versed musician and scientific psychologist. These chapters explore the personalities and motivating factors that lie behind musicians' decisions, including choice of instrument and choice of music as a career. Kemp also outlines several of the predominant personality tests, including the Myers-Briggs and the Big Five, and discusses strengths and weaknesses of these tests.

This text provides a blend of information regarding personality types and musical performance used for this study.

Reubart's *Anxiety and Musical Performance: On Playing the Piano from Memory* (1985) directly relates to this study with chapters on stage fright, causes of nerves, practice, attention and awareness during performance, genetic and environmental influences on the performing pianist, relaxation techniques, ideas for self-improvement and psychological interventions. Providing definitions of anxiety, this text explains that anxiety is essential and may occur synonymously with excitement. Reubart offers the pianist a comprehensive understanding of performance anxiety along with several coping strategies.

Lesley McAllister's *The Balanced Musician* (2013) provides particularly important insight into the connection between a performer's mind and body, exploring topics such as personality, perfectionism, self-efficacy, and performance anxiety. Cognitive and physical strategies such as relaxation techniques, imagery, mental rehearsal, and stretches are provided to help both the musician and the athlete achieve optimum performance results. McAllister holds that the true artist, the "balanced musician," possesses "an intense need to communicate musical ideas, complete technical command of the instrument or voice, and secure mental preparation with well-honed cognitive skills."

Other books take a more sociological approach to music. Farnsworth's *The Social Psychology of Music* (1969) surveys topics such as the nature and measurements of musical taste and abilities. *Musical Identities* by Macdonald, Hargreaves, and Miell (2002) explores a similar vein as it discusses musical identities of young musicians, solo

performers, gender identity in music, national identities, and music for individuals with special needs. Significantly, *Musical Identities* provides insight into aspects of a solo performer's personality, influence of environmental factors, role of others, motivation to perform, and characteristics that comprise the "good solo music performer."

Several dissertations and theses dealing with MPA have been written in the last twenty years. Many of these publications look to the causes of anxiety outside of the musician's personality and primarily seek to offer coping solutions within a general context. Others focus on specific topics, such as perfectionism and self-efficacy, and their influence on a performer's level of anxiety. And while some dissertations study anxiety in performing musicians as a whole, fewer address the concerns of the collegiate pianist. Liu's "Music Performance Anxiety Among College Piano Majors in Taiwan" (2016) does propose a similar topic and methodology, but does not utilize questionnaires regarding personality types.

Lacey Hutchison Marye's dissertation, "A Survey of Music Performance Anxiety: Definitions, Causes and Treatments" (2011), is described as a "basic guide" that outlines theorists, definitions, diagnoses, causes and effects, alternative treatments and treatment facilities related to MPA. In particular, Marye's dissertation states that "different components of anxiety – thoughts, physical responses, and behavior patterns – may be both stimuli and responses to one another," and that "fear of the future" is likely the most common symptom of anxiety. Marye's study also advocates that anxious individuals "expect negative things to happen to them," and that novice and experienced musicians' anxiety levels differ in relation to when they experience highest levels of anxiety. It is my

goal to build upon this understanding of the causes of performance anxiety through a study of the Big Five personality types.

CHAPTER 2

THE BIG FIVE AND MUSIC PERFORMANCE ANXIETY

2.1 THE BIG FIVE DEVELOPMENT

The “Big Five,” also known as the “five factor model” of personality traits, has been tested by many different groups of psychologists within the last several decades. Robert McCrae and Oliver John define the five-factor model as “a hierarchical organization of personality traits in terms of five basic dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience,” and state that “research using both natural language adjectives and theoretically based personality questionnaires supports the comprehensiveness of the model and its applicability across observers and cultures” (McCrae and John, 1992).

As early as 1884, Sir Francis Galton was one of the first scientists to use a dictionary to estimate personality-descriptive terms and decipher which terms share similar meaning. Galton acknowledged that the “lexical hypothesis” - namely, that “the most important individual differences in human transactions will come to be encoded as single terms in some of all of the world’s languages,” is fundamental in the development of the Big Five (Goldberg, 1993). The lexical hypothesis is one of the two systems for naming personality factors. Questionnaires comprise the second system. In 1932, William MacDougal suggested in the first issue of *Character and Personality*, later the *Journal of Personality*, that “personality may to advantage be broadly analyzed into five distinguishable but separable factors, namely, intellect, character, temperament,

disposition, and temper... each of these is highly complex [and] comprises many variables” (Digman, 1990).

Following Galton, factor analysis researcher L. L. Thurstone led a study involving 60 adjectives given to 1300 raters. The raters were asked to underline words that would describe a person they knew. After analysis, Thurstone found that the 60 adjectives could be broken down into five primary factors (Goldberg, 1993). Though Thurstone later developed a seven-factor Thurstone Temperament Schedule, Raymond B. Cattell followed Thurstone’s findings and used the lexical hypothesis to research 4,500 terms, paired down to 35 bipolar variables. Cattell claims to have repeatedly found at least twelve oblique factors, though other researchers including Donald Fiske have only proven five of these factors to be replicable (ibid). Fiske, described by some as “The Accidental Discoverer” of the Big Five, studied a set of Cattell’s 22 variables and found only five factors, naming them “Confident Self-Expression (I), Social Adaptability (II), Conformity (III), Emotional Control (IV), and Inquiring Intellect (V)” (ibid).

The “True Fathers” of The Big Five are considered Tupes and Christal, who used findings from Cattell and Fiske to find five replicable personality factors (ibid), which they labeled: Surgency, Agreeableness, Dependability, Emotional Stability, and Culture (Digman, 1990). Other researchers, such as Borgatta (1964) and Smith (1967) also found five stable factors, titled “Assertiveness, Likeability, Emotionality, Intelligence, and Responsibility” (ibid). Initial skeptics Warren Norman and John Digman tried to disprove these findings, though Digman later agreed with the Big Five model. Lewis Goldberg also began as a critic, initially accepting Peabody’s three-factor model, but later stated that “it should be possible to argue the case that *any* model for structuring individual

differences will have to encompass—at some level—something like these ‘big five’ dimensions” (Digman, 1990).

H.J. Eysenck, using the questionnaire system, identified Extraversion (E) and Neuroticism (N) as two major elements of psychological tests, dubbed “The Big Two” by Wiggins. In 1980, Costa and McCrae, described as “the world’s most prolific and most influential proponents of the five factor model” (Goldberg, 1993), added Openness to Experience (O), and in 1985 and 1989, added dimensions Agreeableness (A) and Conscientiousness (C) (McCrae and John, 1991). In 1981, Goldberg designated the five factor markers as “The Big Five” (ibid).

2.2 THE BIG FIVE FACTORS

Table 2.1 below outlines the Big Five personality markers and their descriptors, as found in Costa and McCrae’s inventory, the “NEO-PI-R” (Kemp, 1996).

TABLE 2.1 – THE BIG FIVE FACTORS

Dimensions	Facet Scales
Neuroticism	Anxiety Angry hostility Depression Self-consciousness Impulsiveness Vulnerability
Extraversion	Warmth Gregariousness Assertiveness Activity Excitement seeking Positive emotions
Openness	Fantasy Aesthetics Feelings Actions Ideas Values

Agreeableness	Trust Straightforwardness Altruism Compliance Modesty Tender-mindedness
Conscientiousness	Competence Order Dutifulness Achievement striving Self-discipline Deliberation

2.3 MUSIC PERFORMANCE ANXIETY

Music performance anxiety (MPA) can be experienced by anyone regardless of age, years of experience, gender, genre of music, or technical expertise (Kenny, 2011). While some musicians may thrive on the concert stage, others may feel tremendous pressure and negative anxiety. The following statements from some of the most renowned musicians provide evidence of this disparity regarding performing. Frederic Chopin (Zdzislaw Jachimecki, 1937) stated, “I am not fitted to give concerts. The audience intimidates me, I feel choked by its breath, paralyzed by its curious glances, struck dumb by all those strange faces” (ibid). This is in stark contrast from Dale Reubart’s statement in his book, *Anxiety and Musical Performance*: “One of the most exhilarating experiences I know of is performing in public, especially when there is a magnificent piano under my fingers, great music in my head, and the feeling that there are no technical obstacles” (Reubart, 1985). In contrast to Chopin, Mozart reveled in the audience’s reaction at the 1778 premiere of his “Paris” symphony:

Just in the middle of the first Allegro there was a passage which I felt sure must please. The audience were quite carried away—and there was a tremendous burst of applause . . . Having observed that all last as well as first Allegros begin here with all the instruments playing together and generally *unisono*, I began mine

with two violins only, piano for the first eight bars—followed instantly by a *forte*; the audience, as I expected, said ‘Hush’ at the soft beginning and when they heard the *forte*, began at once to clap their hands (Mozart, 1778/1985) (Kenny, 2011).

Vladimir Horowitz was also known to struggle with performance anxiety, sometimes taking long breaks from performance. However, Horowitz made this statement regarding performance: “Without false modesty, I feel that, when I’m on stage, I’m the king, the boss of the situation” (Schick, 2013).

These strikingly different views on performance reveal the performers’ concerns, excited anticipation, and perceived control of the environment. While Reubart seemed to be focused on the music and his own sensory experience, Chopin’s statement revealed focus on his audience’s gaze, thoughts, and mere presence. Conversely, Mozart viewed his performance as an opportunity to thrill and please his audience (Kenny, 2011).

Mozart eagerly anticipated his audience’s positive response, whereas Chopin worried in anticipation, claiming to be paralyzed by his audience. Even Horowitz’s statement illustrates a positive thought process about performance, namely, his sense of feeling “in control” of the situation. Each of these viewpoints indicates that our thought processes about MPA may vary widely and likely have a bearing on how we process feelings of anxiety.

2.4 DEFINING MUSIC PERFORMANCE ANXIETY

MPA has been more thoroughly researched and defined in recent years, and one definition by Rollo May states that:

Anxiety is the apprehension cued off by a threat to some value that the individual holds essential to his existence as a personality . . . Its special characteristics . . . are the feelings of uncertainty and helplessness in the face of the danger. The nature of anxiety can be understood when we ask what is threatened in the experience which produces anxiety (Reubart, 1985).

Other related terms of importance include (Reubart, 1985):

- “Stage fright” – “anxiety placed in a particular setting”
- “Threat” and “stress” – two causes of anxiety
- “Worry” – “the way anxiety is expressed cognitively”

Psychotherapists also believe that it is important to differentiate between two types of anxiety. Existential anxiety is experienced by everyone and is associated with sickness, disease, natural disasters, death, and self-preservation (ibid). Neurotic anxiety is described as “apprehension that is disproportionate to the objective threat” (ibid). In fact, Sigmund Freud initiated the concept of neurotic anxiety, and his founding of psychoanalysis would later spark discussions and research for cognitive-behavioral therapy, one of the known interventions for MPA (Marye, 2011).

MPA is usually classified as a neurotic anxiety, since it is related to the “individual’s interpretation” of the threat, rather than the literal danger at hand (Reubart, 1985). Others identify the two types of anxiety as “trait” and “state” anxiety. Trait anxiety refers to an individual’s “predisposition to be anxious,” versus state anxiety, which speaks to situational anxiety (Kemp, 1996). It is logical, then, that how musicians perceive a stressful event, combined with predisposition will have some bearing on how they experience and cope with MPA.

2.5 COGNITIVE, PHYSIOLOGICAL, AND REGULATORY DIMENSIONS OF ANXIETY

Additional studies on performance anxiety suggest a three-dimensional model, as evidenced by Wen-Nuan Kara Cheng, Lew Hardy, and David Markland in their “Three-Dimensional Performance Anxiety Inventory” (2009). The inventory was initially

designed and tested in the field of sports psychology. The questions transfer well to music, considering the overlap between sports performance anxiety and MPA. *The Inner Game of Music* (Green and Gallwey, 1986) outlines parallels in the following statement:

People ‘play’ sports and ‘play’ music, yet both involve hard work and discipline. Both are forms of self-expression which require a balance of spontaneity and structure, technique and inspiration. Both demand a degree of mastery over the human body, and yield immediately apparent results which can give timely feedback to the performer. Since both sports and music are commonly performed in front of an audience, they also provide an opportunity for sharing the enjoyment of excellence, as well as the experience of pressure, fears and the excitement of ego involvement.

Both athletes and musicians can readily identify with the three elements of anxiety found in the “Three-Dimensional Performance Anxiety Inventory,” which include cognitive anxiety, physiological anxiety, and the regulatory dimension of anxiety.

These three dimensions are divided into five subcomponents listed below:

- Cognitive anxiety: includes worry and self-focus
- Physiological anxiety: includes autonomic hyperactivity and somatic tension
- Regulatory dimension of anxiety: includes perceived control

When developing and researching these dimensions, Cheng, Hardy, and Markland sought to understand whether all anxiety is maladaptive or if there could also be positive outcomes to performance anxiety. To account for the adaptive nature of anxiety, authors added the regulatory dimension of anxiety to the widely accepted cognitive and physiological anxiety dimensions (Cheng, Hardy, and Markland, 2009).

Cognitive anxiety refers to “cognitive responses of anxiety that are negatively toned (unpleasant) due to perceived threat” (ibid). Worry and self-focus fall under the cognitive dimension of anxiety. Worry is viewed as an apprehension of potentially

negative outcomes and may not be sufficient on its own to measure the full scope of cognitive anxiety. However, coupled with self-focus, a “self-evaluative state with an increased awareness of self-shortcomings concerning the performance of a task under stress,” the cognitive dimension is made more comprehensive (Cheng, Hardy, and Markland, 2009). Self-focus often leads to potentially negative self-evaluation, which may add to anxiety and apprehension. Thus, both worry and self-focus have been viewed as key elements in understanding cognitive anxiety.

Physiological anxiety refers to “physiological reactions that are invoked by autonomous nervous system in response to a stressor” (ibid). The two subcomponents of physiological anxiety include autonomous hyperactivity and somatic tension.

Autonomous hyperactivity refers to the body’s response to anxiety involving the involuntary muscle groups. These groups include organs, respiratory muscles, sweat glands, and blood vessels, to name a few. Common physical responses include difficulty breathing, cold sweats, and an elevated heart rate (ibid). Somatic tension involves the motor-oriented voluntary muscle groups and can result in fatigue, shaking, and muscular tension. Both the autonomous hyperactivity and somatic tension subscales are reflective of the physiological responses our bodies have when presented with performance anxiety.

The regulatory dimension of anxiety “refers to cognitive representations of an underlying regulatory process involved in the dynamics of anxiety and concerned with coping capacity in reaction to perceived threat” (ibid). Of the three dimensions, it is the regulatory dimension that fully represents one’s adaptive potential. Perceived control is the sole subscale in this dimension and has been viewed as an essential part of the study of anxiety. Specifically, perceived control is defined as “the perception of one’s

capacities to be able to cope and attain goals under stress” (Cheng, Hardy, and Markland, 2009). It is hypothesized that high levels of perceived control likely result in positive outcomes when performers feel confident in their abilities; conversely, when performers doubt their abilities to perform under pressure, negative outcomes are more likely. The perceived control subscale may very well prove to be one of the most significant determiners of performance anxiety.

CHAPTER 3

METHODOLOGY

The primary purpose of this study was to determine if personality types within the “International Personality Item Pool Big Five Factor Markers” questionnaire (Pettersson and Turkheimer, 2010) influence a collegiate pianist’s level of MPA through the “Three-Dimensional Performance Anxiety” questionnaire (Cheng, Hardy, and Markland, 2009). A second purpose of the study was to search for positive and negative correlations to find potential solutions to help students and performers with high levels of MPA based on the needs of their individualized personality types. This chapter includes information regarding the survey participants, data collection, and methods of analysis used to complete the study.

3.1 PARTICIPANTS

This study includes 55 collegiate music major participants, ranging from undergraduate students to doctoral students. A pilot test of the survey was first administered to 13 non-pianist collegiate music majors at the University of South Carolina School of Music and other music institutions across the nation. The 13 non-pianist collegiate music majors took the pilot test survey online at the *Survey Monkey* website through a link sent to them by the researcher. The remaining 42 of the 55 participants were collegiate piano majors at the University of South Carolina School of Music. The population represents a local sample: participants were colleagues of the principal researcher, studying at the same institution. This population is also

representative of a wide demographic background, including students from several different countries and ethnicities, diverse musical training and upbringing, and varying years of experience at the piano.

3.2 DATA COLLECTION

The University of South Carolina Institutional Review Board for Human Research (IRB) approved the study for exempt review on August 25, 2017. Beginning on November 20, 2017, and continuing through December 12, 2017, the survey instrument was pilot-tested by 13 non-pianist collegiate music majors through a web link to the *Survey Monkey* platform. The pilot test participants confirmed that the survey was clear, easily accessible, and understandable. No changes were made to the original survey.

On December 12th and 13th, 2017, 42 participants completed the survey in person, using paper copies printed from *Survey Monkey*. Prior to completing the survey, students were given an invitation letter, detailing the purpose of the study, before they agreed to take the survey. Participation in the study was voluntary, and the students were allowed to withdraw at any point. No risks were anticipated for the participants in this study. A copy of the invitation letter may be found in Appendix A.

The majority of the participants took the survey within 5-10 minutes of completing their piano jury. Piano juries are required performances at the end of the semester for all undergraduate and many graduate music students enrolled in private lessons, in which a student will perform for their area faculty for a final grade assessment, given that they did not complete a degree recital that semester. Because most students feel the need to perform at their best for this performance, juries is an appropriate setting to gain insight into students' attitudes about MPA. The researcher

indicated to participants that the MPA section of the survey was to reflect their overall feelings of MPA, rather than solely their recent jury performance.

The remaining few students who took the in-person survey were also collegiate piano majors at the University of South Carolina, but were not required to perform a jury that semester. The researcher was present for the entire time students were taking the survey and encouraged participants to ask questions if any clarification was needed. Participant responses are anonymous and were entered into *Survey Monkey* by the researcher between January 19th and January 21st, 2018. The results of all 55 responses were exported into an Excel file and the Statistical Package for the Social Sciences (SPSS) database, Version 25.

3.3 RESEARCH INSTRUMENTS

This study utilized a survey containing three distinct sections: (1) five demographic and general information questions, (2) the “International Personality Item Pool Big Five Factor Markers” questionnaire, (3) the “Three-Dimensional Performance Anxiety” questionnaire. The five demographic and general information questions were constructed to collect data regarding a student’s background, academic status, and years of experience at the piano. The “International Personality Item Pool Big Five Factor Markers” questionnaire and the “Three-Dimensional Performance Anxiety” questionnaire are pre-constructed measurement instruments in the fields of psychology and sports psychology, respectively, and are commonly used surveys that have previously been tested for their reliability. The demographic questions and two surveys were merged into a single questionnaire using the *Survey Monkey* platform.

“International Personality Item Pool Big Five Factor Markers” (IPIP BFFM)

The Big Five personality dimensions have, in recent years, reached “initial consensus on a general taxonomy of personality traits” (John et al., 2008). Derived from natural language and the two traditions of the lexical hypothesis and survey questionnaires, the Big Five is the favored personality measurement among most psychologists today for its ability to “represent the various and diverse systems of personality description in a common framework” (ibid). The Big Five has been replicated across many cultures, languages, and demographics.

Frequently cited versions of the Big Five test include Costa and McCrae’s “NEO Personality Inventory” (NEO-IP), which did not include the facets of Agreeableness and Conscientiousness, and their 1992-revised 240-item “NEO Personality Inventory” questionnaire (NEO-PI-R) that does account for Agreeableness and Conscientiousness. Costa and McCrae also developed a shorter 60-item test, known as the “NEO-FFI” (ibid). Filling the need for an even shorter test was the “Big Five Inventory” (BFI), a 44-question test developed in 1991 by John, Donahue, and Kentle (ibid). Its brief duration is beneficial in avoiding test-taker fatigue and boredom. Beyond these tests, there are many variants and adaptations that measure the Big Five and achieve similar reliability scores.

The specific instrument chosen for this study was the “International Personality Item Pool Big Five Factor Markers” (IPIP BFFM) by Pettersson and Turkheimer (2010). This 50-item test was chosen, in part, for its brevity, short phrases within each question, clarity, and reliability score. The brevity of the test allowed participants to take this portion of the survey in approximately five minutes, retaining the integrity and reliability of longer Big Five questionnaires. The researchers measured an internal reliability score

of alpha = .78. An alpha score of .7 is recommended for a test to be considered reliable (Nunnally, 1978).

Cronbach's alpha scores were used in this study to confirm reliability of each of the five components of this test. Overwhelmingly, this study's alpha scores confirmed that this survey instrument has been thoroughly tested and is reliable. The Cronbach's alpha scores for the Big Five portion of the present study range from .686 to .871, with only one of the five scores slightly under the .7 standard. The high reliability scores for each section replicated in the present study indicate that the test questions are well-reviewed and formulated, and that the study can proceed to further methods of statistical analysis. Alpha scores and test reliability results will be discussed in greater detail in the following chapter.

“Three-Dimensional Performance Anxiety Inventory”

To date, there are very few existing questionnaires that measure MPA specifically. The broader term of “performance anxiety” yields significantly more questionnaires, though many of these tests are ultimately unrelated to MPA. A few closely related tests to MPA include the following: “Music Performance Anxiety Inventory for Adolescents” (MPAI-A); “Performance Anxiety Inventory”; “Music Performance Anxiety Inventory for Adolescents” (State, Performance); “Musical Performance Pathway Interview”; “Violin Exam Anxiety Questionnaire”; and “Sport Anxiety Scale—2.”

The “Music Performance Anxiety Inventory for Adolescents” (MPAI-A) (Osborne and Kenny, 2005) and the “Music Performance Anxiety Inventory for Adolescents” (State, Performance) (Braden, Osborne, and Wilson, 2015) are both directly

related to MPA, consisting of 15 items and 12 items, respectively, measured on a 7-point Likert scale. While many of the questions are almost identical in nature to the “Three-Dimensional Performance Anxiety Inventory,” some questions are clearly written for a younger audience, including questions regarding pleasing parents and the student’s comfort level performing solo versus in a school ensemble setting. Both tests are presented as a one-dimensional test, not accounting for differences between physical, cognitive, and regulatory dimensions of anxiety.

The “Performance Anxiety Inventory” (Nagel, Himle, and Papsdorf, 1981) consists of a 20-item questionnaire based on a 4-point Likert scale. This questionnaire was designed to test undergraduate musicians. The “Musical Performance Pathway Interview” (Pecen, Collins, and MacNamara, 2018) is a 6-item interview guide, in which subjects are asked guided questions regarding their feelings on music performance. More specifically, this interview was designed to gain insight into how “pre-elite, transitioning elite, and elite performers experienced challenges, employed coping behaviors and sources, impactful beliefs, and preferences for support.” The “Violin Exam Anxiety Questionnaire” (Kivimäki, 1995) consists of 23 questions using a 4-point Likert scale. Questions in this inventory are worded specifically for a violin exam. Kivimäki cites that this test uses items from the “Test Anxiety Questionnaire” (TAQ, Sarason, and Mandler, 1952), “Achievement Anxiety Scale” (AAT, Alpert, and Haber, 1960), “Test Anxiety Scale,” and “Cognitive Interference Questionnaire” (TAS and CIQ, Sarason, 1978), as well as his own music-related questions.

Finally, the “Sport Anxiety Scale—2” (Smith, Smoll, Cumming, and Grossbard, 2006) contains 15 items on a 4-point Likert scale. Originating from the sports psychology

field, the survey questions are remarkably close to the “Three-Dimensional Performance Anxiety Inventory.” Testing three dimensions, the “Sport Anxiety Scale—2” divides questions into categories “Somatic,” “Worry,” and “Concentration Disruption.” While many questions are similar to the “Three-Dimensional Performance Anxiety Inventory,” the language is more specifically directed towards sports, frequently referencing the game and coach.

Ultimately, the “Three-Dimensional Performance Anxiety Inventory” was chosen for this study for several reasons: (1) the questionnaire language is specific to performance as a whole, (2) the three dimensions are further subdivided into 5 categories that could each be correlated with the 5 constructs of the Big Five, (3) the test recommends using a 5-point Likert scale, as does the Big Five questionnaire, (4) performance-based questions in the field of sports psychology relate considerably well with MPA, and (5) the questionnaire language is relevant to collegiate/professional musicians, regardless of degree status, gender, background, or years of performing experience.

Because all of the questions relate directly to music performance, as opposed to solely sports performance, none of the questions were altered for the survey. The three broad categories “Subscale of Cognitive Anxiety,” “Subscale of Physiological Anxiety,” and “Subscale of Regulatory Dimension of Anxiety” were further divided by its authors into the following five categories: “Worry,” “Self-focus,” “Autonomic Hyperactivity,” “Somatic Tension,” and “Perceived Control.” These five categories were each tested for their reliability and were subsequently tested for correlations between each category and each of the Big Five dimensions. The 5-point Likert scale found in both the “International

Personality Item Pool Big Five Factor Markers” and the “Three-Dimensional Performance Anxiety Inventory” enhanced fluency in the survey, not requiring participants to adjust to a new rating scale between surveys.

A number of studies have shown the reliability of the “Three-Dimensional Performance Anxiety Inventory” to be high. Validation studies measuring the reliability of the three dimensions yielded Cronbach alpha scores ranging from .78 to .87, and a study measuring performance anxiety in the field of tae-kwon-do produced alpha scores using the “Chinese Scale Items of the Three-Factor Anxiety Inventory” of .85 to .86 (Cheng, et. al., 2011). Additionally, the study of performance anxiety among tae-kwon do participants supported the significant effect that perceived control (the regulatory dimension of anxiety) has on predicting performance anxiety. Similarly, high Cronbach alpha scores ranging from .81 to .85 were reported in the study “Cross-cultural validation of a three-dimensional measurement model of performance anxiety in the context of Chinese sports,” using the “Chinese Three-Factor Anxiety Inventory” (ibid). The present study’s findings show largely positive Cronbach alpha scores, ranging from .611 to .849, despite one low score of .457. This low score, found in the autonomic hyperactivity construct, was discarded from the study as a result. Cronbach alpha scores for each dimension of anxiety, including potential reasoning behind higher and lower scores, will be discussed more thoroughly in the subsequent chapter.

3.4 DATA ANALYSIS

SPSS

The “Statistical Package for the Social Sciences,” widely known as “SPSS,” is a software program used since 1968 for analyzing data. In 2009 when purchased by IBM,

SPSS technically became IBM SPSS, though it is still most commonly known as SPSS. The software analyzes data from many platforms and displays the data in spreadsheet, table and graphical form. SPSS is capable of computing numerous types of statistical analyses, though for the purpose of this research, only the specific tests used will be described in detail.

SPSS Version 25 was used to generate data for the present study. Described in the following pages, descriptive statistics, Cronbach alpha scores, Pearson's correlations, and *t*-tests were each calculated using SPSS. Data was first gathered in the *Survey Monkey* platform and was exported through an Excel file into the SPSS database. Following analysis of the data, tables, figures and scatter plots were generated. Tables and figures outlining the research findings are presented in Chapter 4.

Descriptive Statistics

Descriptive statistics were used to confirm that the data for the present population were normal. Survey answer choices ranged on a Likert scale from 1-5. All data tested within the normal range, confirming that Pearson's correlations could later be used. Descriptive statistics outline the number of participants (N), the mean, standard deviation, skewness, and kurtosis of a population. A normal population, as found in the current study, can be represented on a standard bell-shaped curve without an unusual number of outliers in either direction.

Cronbach's Alpha

To determine the reliability of the items in both questionnaires, Cronbach's alpha was calculated through the SPSS software. It is vital to test for a survey's reliability in studies across all research fields. Test reliability is imperative in interpreting results

accurately. Reliability refers to the “ability of an instrument to measure consistently” (Tavakol, 2011). If a test’s reliability scores are low, the results may not be useful. Closely related to reliability and often misinterpreted is validity, which “is concerned with the extent to which an instrument measures what it is intended to measure” (ibid). Reliability is a prerequisite to consider an instrument’s validity; therefore, an instrument may be reliable and not valid. The present study utilized Cronbach’s alpha to determine the reliability of the survey instruments. Cronbach’s alpha is considered the most frequently used measure of test reliability (ibid).

Cronbach’s alpha is easily used since it only requires a test to be administered once, in contrast to a test-retest model of reliability. In 1951, Lee Cronbach developed his “alpha” to determine “a measure of the internal consistency of a test or scale,” represented statistically as a number between 0 and 1 (ibid). Internal consistency measures “the degree in which scores measure the same concept” (Ritter, 2010). If a test proves to have a high internal consistency and reliability, the test is said to accurately measure the concepts in which it is testing. Cronbach’s alpha may be determined manually by using a formula or may be calculated in the SPSS analysis software, as was performed in the current study.

Generally, a higher alpha coefficient reveals that the test items are correlated. An alpha score of 0 indicates that the items are completely uncorrelated, whereas an alpha score of 1 indicates that items are perfectly correlated (ibid). A score of 1 also outlines a perfect internal consistency. A score of .70-.95 is preferred when measuring a test’s reliability, though no firm consensus on this range exists (Nunnally, 1978). A low alpha score may be caused by a test with too few items or low internal consistency within those

items. An alpha score that is too high, above 0.90 or 0.95, may indicate that some questions are redundant and too closely worded (Nunnally, 1978). Because some tests measure more than one construct, it may be valuable to calculate a separate alpha score for each concept within a test.

When measuring alpha scores in the current study, each section of both the “International Personality Item Pool Big Five Factor Markers” and the “Three-Dimensional Performance Anxiety Inventory” questionnaires was tested. This resulted in ten unique alpha scores in the following categories: Extraversion (E), Neuroticism (N), Openness (O), Conscientiousness (C), Agreeableness (A), Worry (W), Self-focus (SF), Autonomic Hyperactivity (AH), Somatic Tension (ST), and Perceived Control (PC). Overall, some questions were deleted after discovering that the alpha score would rise without their inclusion. Additionally, the Autonomic Hyperactivity section was discarded from the study due to its low alpha score of .457. The low score could have resulted from too few questions in this area, poor wording, or lack of relatedness to collegiate piano majors. Further details for each section’s alpha scores will be outlined in Chapter 4.

T-Test

When comparing two groups within a population, a *t*-test may prove valuable. A *t*-test “seeks to draw conclusions about these numbers among populations” and “analyzes the difference between the two means derived from the different group scores” (Borden et al., 2009). If the data reveals a number of $p < 0.05$, the findings are deemed “statistically significant.” In other words, a number smaller than 0.05 would demonstrate that there is less than a 5% likelihood that the results occurred by chance. Similarly, a *p* value of 0.01

would reveal a 1% likelihood that the findings were due to chance. In Chapter 4, p values are indicated with a single or double asterisk.

Primary t -test types include dependent samples and independent samples t -tests. A dependent sample test would be useful when the two groups are related to one another in some way. For example, a group of students are given a pre-test and post-test, in which the post-test results would be dependent upon the pre-test results. The current study, however, utilizes the independent samples t -test, since the two groups being observed are not dependent on one another. The two groups chosen for comparison in this study are males (M) and females (F), to determine if the groups experience and handle performance anxiety differently.

Pearson's Correlations

Correlations aid a researcher in determining if relationships exist between variables in a study. Three such outcomes may be found: positive correlation, no correlation, or negative correlation. The correlation coefficient is represented by a lowercase, italicized r . A positive correlation is a positive number ranging between 0 and 1; no correlation exists when the correlation coefficient is 0; and a negative correlation is a negative number ranging from 0 to -1. A positive correlation reveals that as one variable increases, the other variable also increases. Likewise, a negative correlation indicates that the two variables move in opposite directions: as one variable increases, the other decreases. When no correlation is found, there is said to be no relationship between the two variables.

Within these numbers, correlations may range from very weak to very strong. The closer the number on either side to -1 or +1, the stronger the correlation. According to Evans (1996) (Owen et al., n.d.), correlations may be categorized as follows:

- .00-.19: “very weak”
- .20-.39: “weak”
- .40-.59: “moderate”
- .60-.79: “strong”
- .80-1.0: “very strong”

Thus, a .52 correlation value ($r = .52$) would denote a “moderate positive correlation,” and a value of -.52 ($r = -.52$) would denote a “moderate negative correlation.” In the current study, correlation coefficients are first recorded in a table using Pearson’s correlations. Pearson’s is the most commonly used method for calculating correlation coefficients among normally distributed data. The table cites correlation coefficients between each of the nine categories found in the survey. These categories include Worry (W), Self-focus (SF), Somatic Tension (ST), Perceived Control (PC), Extraversion (E), Neuroticism (N), Openness (O), Conscientiousness (C), and Agreeableness (A). Statistically significant findings are allocated by either a single or double asterisk, depending on the strength of the correlation, where $*p < 0.05$ and $**p < 0.01$. The statistically significant results are thereafter portrayed in scatter plots that serve as a visual guide. An ascending line represents a positive correlation, while a descending line represents a negative correlation. In both cases, the steeper the line, the stronger the correlation.

CHAPTER 4

RESULTS

4.1 DESCRIPTIVE STATISTICS

The demographic question results are shown in Figures 4.1-4.5 below. In Section A, (see Figure 4.1) students were asked to select their degree status (i.e., undergraduate or graduate). No differentiation was made between masters and doctoral students. Twenty-five (25) participants (45.45%) indicated that they are undergraduate students, and thirty (30) participants (54.55%) indicated that they are graduate students.

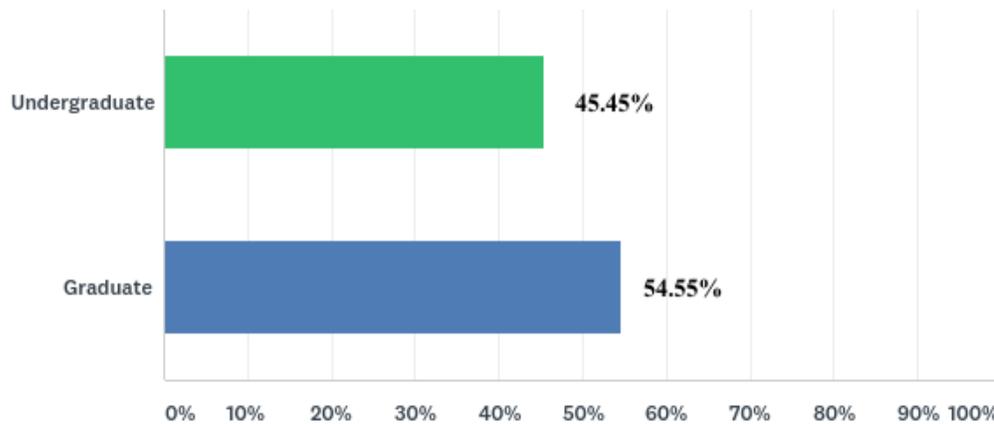


FIGURE 4.1: SECTION A, QUESTION 1, DEGREE STATUS

In Section A, Question 2, participants were asked to indicate their major, (i.e., Pedagogy/Music Education, Performance, and Music Minor/Other). Students who marked “Music Minor/Other” may have fallen in the following categories: Minor in Music, Audio Recording, Entrepreneurship, or Music Industry Studies; B.A. of Arts in Music; a Certificate in Music Performance; or a non-music related degree, in which

students are taking private piano lessons for college credit. Fifteen (15) identified as pedagogy/music education majors (27.27%). Thirty-four (34) were performance majors (61.82%), and six (6) selected the music minor/other (10.91%) category.

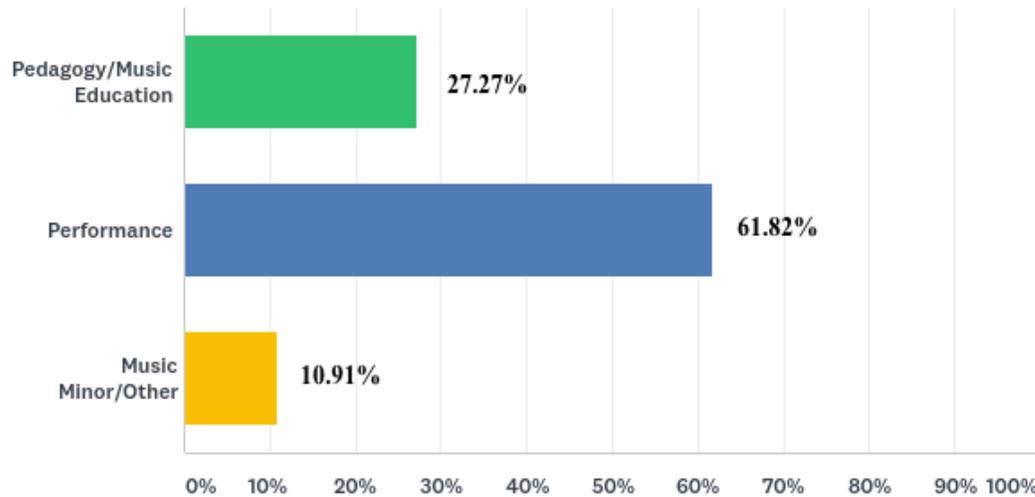


FIGURE 4.2: SECTION A, QUESTION 2, DEGREE PROGRAM

In Section A, Question 3 (see Figure 4.3), participants were asked to indicate gender. Twenty-two (22) males made up forty percent (40%) of the population, whereas thirty-three (33) females made up sixty percent (60%) of the population.

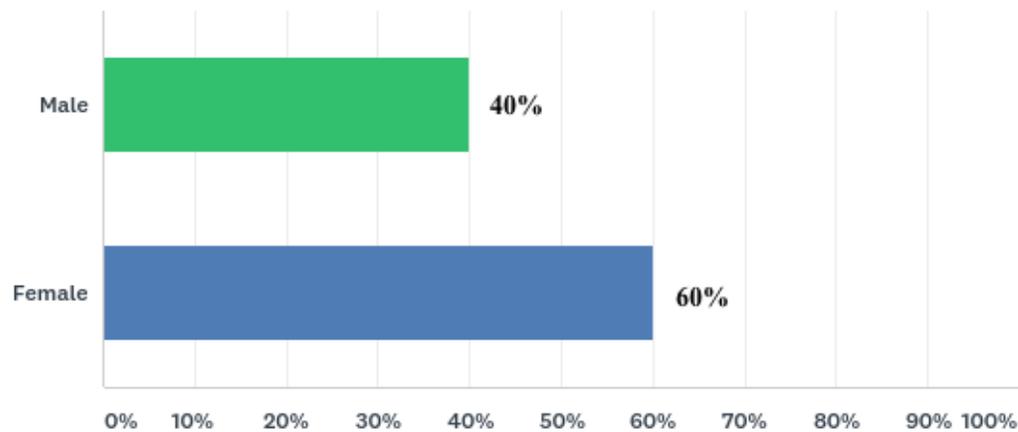


FIGURE 4.3: SECTION A, QUESTION 3, GENDER

In Section A, Question 4, participants were asked to indicate how many years they have played the piano. Options for this question included 5-10 years, 11-15 years, and 16+ years. One (1) of the fifty-five (55) respondents opted not to answer this question. Six (6) of the respondents (11.11%) indicated that they have 5-10 years of experience playing the piano. Twenty-three (23) of the respondents (42.59%) indicated that they have 11-15 years of experience playing the piano. Twenty-five (25) of the respondents (46.30%) indicated that they have 16+ years of experience playing the piano.

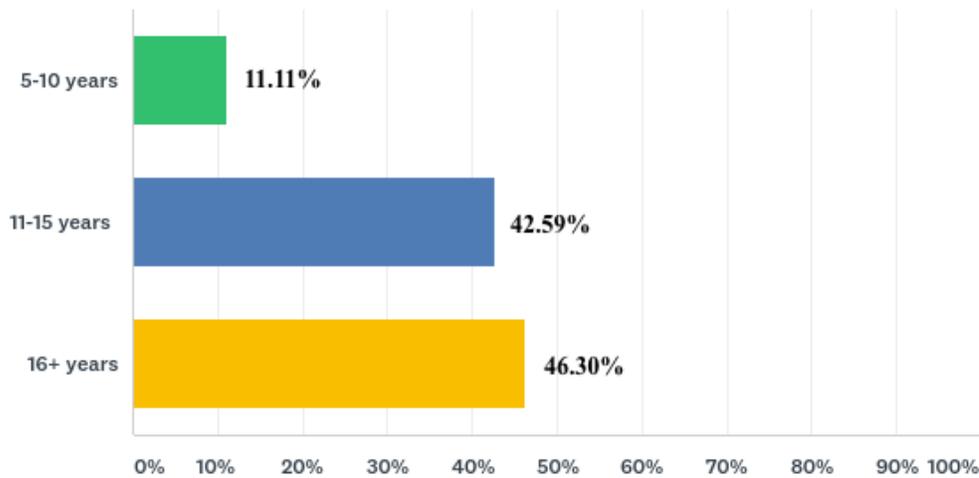


FIGURE 4.4: SECTION A, QUESTION 4, EXPERIENCE AT THE PIANO

In Section A, Question 5, participants were asked to indicate their grade point average (GPA). Answer choices included: (A) under 2.0, 2.0-2.49, (B) 2.0-2.49, (C) 2.5-2.99, (D) 3.0-3.49, and (E) 3.5-4.0. No participants indicated a GPA of under 2.0 or 2.0-2.49. Four (4) participants (7.27%) indicated a GPA of 2.5-2.99. Eight (8) participants (14.55%) indicated a GPA of 3.0-3.49. Forty-three (43) participants (78.18%) indicated a GPA of 3.5-4.0.

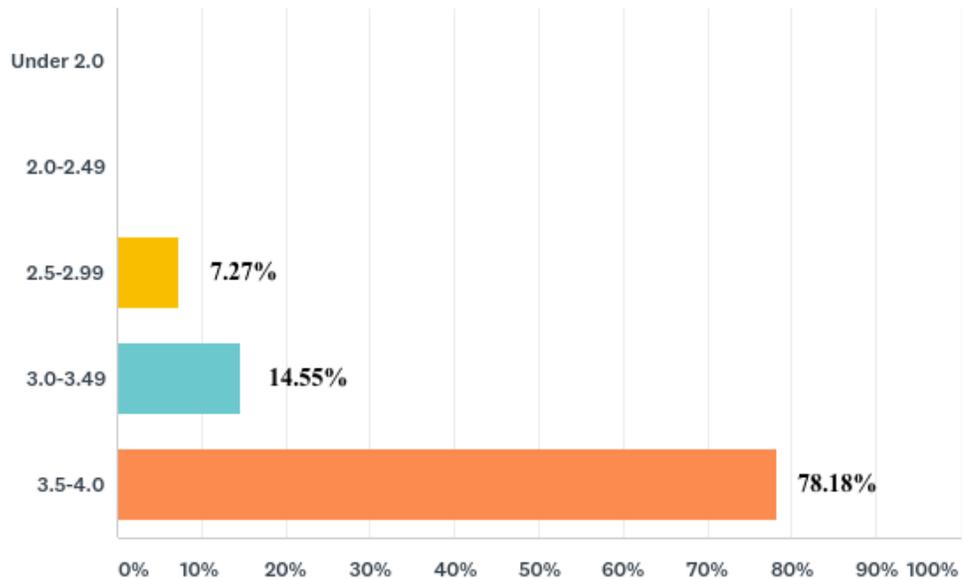


FIGURE 4.5: SECTION A, QUESTION 5, GPA

4.2 RELIABILITY ANALYSIS AND COMPOSITE VARIABLES

Cronbach’s alpha scores shown in Table 4.1 were used to determine the reliability of each of the hypothesized constructs. “International Personality Item Pool Big Five Factor Markers” constructs included: Agreeableness, Extraversion, Neuroticism, Openness, and Conscientiousness. The “Three-Dimensional Performance Anxiety Inventory” constructs included: Worry, Self-focus, Autonomic Hyperactivity, Perceived Control, and Somatic Tension. Generally, a Cronbach’s alpha score of .7 or higher is considered acceptable (Nunally, 1978).

Within the Big Five, the agreeableness subscale consisted of 10 items ($\alpha = .824$), the extraversion subscale consisted of 10 items ($\alpha = .871$), the neuroticism subscale consisted of 10 items ($\alpha = .843$), the openness subscale consisted of 10 items ($\alpha = .809$), and the conscientiousness subscale consisted of 9 items ($\alpha = .686$). Almost all alpha scores within this survey tested over .8, giving each subscale a high reliability score. The

conscientiousness subscale, which received an alpha score below .7, is still included in the study because the alpha score of .686 borders on .7. Overall, these alpha scores reflect a survey instrument that has been highly tested to achieve reliable results.

Within the performance anxiety survey, the worry subscale consisted of 4 items ($\alpha = .716$), the self-focus subscale consisted of 7 items ($\alpha = .763$), the autonomic hyperactivity subscale consisted of 4 items ($\alpha = .457$), the perceived control subscale consisted of 6 items ($\alpha = .849$), and the somatic tension subscale consisted of 2 items ($\alpha = .611$). As a whole, items within this inventory scored slightly lower than items within the Big Five. This could be due to the smaller number of questions within each subscale, or because performance anxiety is possibly more difficult to measure. Regardless, three of the five subscales still received alpha scores over .7, with perceived control representing the highest overall alpha score of .849. The somatic tension subscale is still included in the study with a score of .611, due to its proximity to .7. However, autonomic hyperactivity was discarded from the study due to its low alpha of .457. The low score could be caused by several reasons: relatively small population sample, too few items, lack of clarity, lack of relatedness to MPA, and/or difficulty to measure. All Cronbach's alpha scores and items within each section are reported in Table 4.1 below.

TABLE 4.1—CRONBACH'S ALPHA

Variables	Cronbach's alpha	N of Items
Agreeableness	.824	10
Extraversion	.871	10
Neuroticism	.843	10
Openness	.809	10
Conscientiousness	.686	9
Worry	.716	4
Self-focus	.763	7
Autonomic Hyperactivity	.457	4
Perceived Control	.849	6
Somatic Tension	.611	2

4.3 T-TEST RESULTS

T-tests were conducted to determine if there were statistically significant differences between males and females, concerning experienced levels of MPA. As seen in Table 4.2, each MPA construct included in the study was tested. The only statistically significant result recorded was for the subscale of perceived control, where males ($M = 2.04$, $SD = 0.52$) reported higher levels of perceived control than females ($M = 2.55$, $SD = 0.72$), $t(1) = 3.02$, $p < 0.05$. The Likert scale of 1-5, in which 1 equals “strongly agree” and 5 equals “strongly disagree,” is responsible for the seemingly higher number among females ($M = 2.55$) than males ($M = 2.04$). By reporting a high number of 5 (“strongly disagree”), respondents would be indicating that they perceive themselves as less confident in their abilities, yielding higher numbers. Subscales of worry, self-focus, and somatic tension indicate no statistically significant difference between males and females, each receiving significance scores of $p > 0.05$, as seen in Table 4.2 below.

TABLE 4.2—*T*-TEST RESULTS

Variables	Male (n=21)		Female (n=33)		t	p
	Mean	S.D.	Mean	S.D.		
Worry	2.29	0.73	2.10	0.63	1.02	0.616
Self-focus	2.34	0.64	2.32	0.55	0.94	0.183
Somatic tension	3.24	0.64	2.97	0.68	1.47	0.796
Perceived control	2.04	0.52	2.55	0.72	3.02	0.016

4.4 CORRELATION ANALYSIS

Pearson’s correlations were used to determine if relationships exist between each of the constructs based on the “International Personality Item Pool Big Five Factor Markers” and the “Three-Dimensional Performance Anxiety Inventory.” In Table 4.3

below, all 9 subscales are listed in the left column. Numbers 1-9 in the top row represent the 9 subscales listed in the left column, respectively. Numbers in the table denote the Pearson's correlation coefficient (r). Asterisks denote statistical significance level (p), where one asterisk equals $p < 0.05$, and two asterisks equal $p < 0.01$.

As seen in Table 4.3, the following correlations were statistically significant: worry and self-focus ($r = 0.597, p < 0.01$), worry and somatic tension ($r = 0.334, p < 0.05$), worry and neuroticism ($r = 0.297, p < 0.05$), self-focus and somatic tension ($r = 0.365, p < 0.01$), self-focus and neuroticism ($r = 0.289, p < 0.05$), somatic tension and neuroticism ($r = 0.349, p < 0.01$), somatic tension and conscientiousness ($r = -.291, p < 0.05$), perceived control and openness ($r = 0.398, p < 0.01$), extraversion and neuroticism ($r = -.368, p < 0.01$), extraversion and agreeableness ($r = 0.551, p < 0.01$), neuroticism and conscientiousness ($r = -.416, p < 0.01$), and neuroticism and agreeableness ($r = -.469, p < 0.01$). Other correlations found in Table 4.3 are not statistically significant.

TABLE 4.3—CORRELATION ANALYSIS

Construct	1	2	3	4	5	6	7	8	9
Worry	1								
Self-focus	.597*	1							
Somatic tension	.334*	.365**	1						
Perceived control	.002	-.097	-.152	1					
Extraversion	-.236	-.208	-.125	.247	1				
Neuroticism	.297*	.289*	.349**	-.105	-.368**	1			
Openness	.178	.070	-.060	.398*	.194	-.111	1		
Conscientiousness	-.007	.042	-.291*	.188	.216	-.416*	.213	1	
Agreeableness	.142	.029	.210	.078	.551**	-.469*	.259	.179	1

Note * $p < 0.05$, ** $p < 0.01$

4.5 SCATTER PLOTS

The following figures provide a visual guide to statistically significant correlations, presented in Table 4.3, above. A scatter plot is a graphical representation of the relationship between two variables, one represented on a horizontal axis and the other on a vertical axis. An ascending line delineates a positive correlation, whereas a descending line symbolizes a negative correlation. The slope of the line indicates the strength of the correlation.

In Figure 4.6 (below) there is a positive, linear relationship between worry and self-focus ($r=0.597, p<0.01$). That is, the more participants worry, the more likely they are to be self-focused. The inverse is that the more self-focused participants are, the more prone they are to worrying.

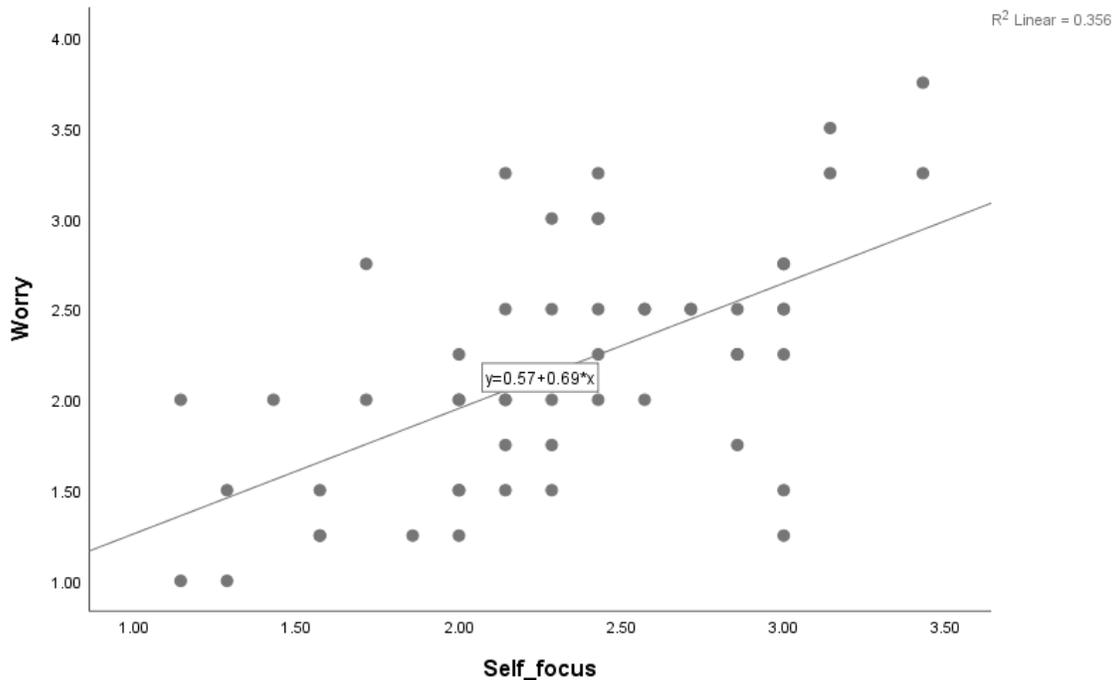


FIGURE 4.6: WORRY AND SELF-FOCUS

In Figure 4.7, worry and somatic tension have a positive, linear relationship ($r=0.334$, $p<0.05$). The more students worry, the more they experience somatic tension. Somatic tension may include general tension, tension headaches, fatigue and restlessness.

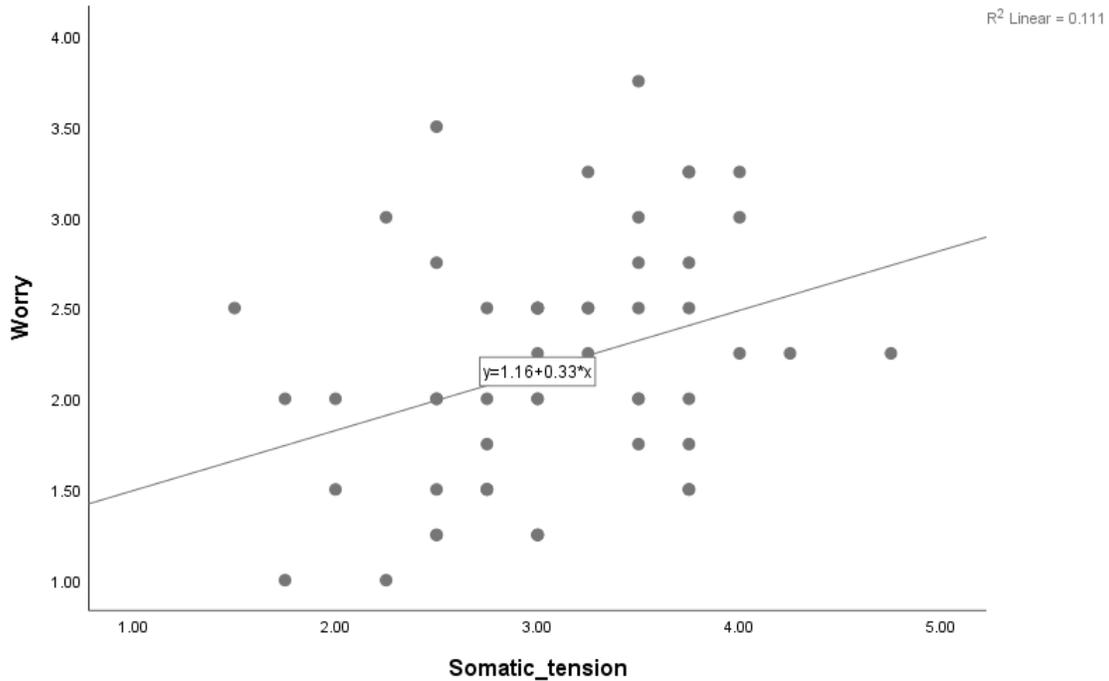


FIGURE 4.7: WORRY AND SOMATIC TENSION

Figure 4.8 (below) shows the relationship between somatic tension and neuroticism. These two subscales ($r=0.349$, $p<0.01$) represent a positive, linear correlation. This finding suggests that the more neurotic a student is, the more likely he is to experience physical symptoms of somatic tension.

In Figure 4.9 (below), self-focus and neuroticism are positively correlated ($r=0.289$, $p<0.05$). The more neurotic performers are, the more likely they are to be focused on themselves. Similarly, as performers focus more on themselves, they become more prone to neuroticism.

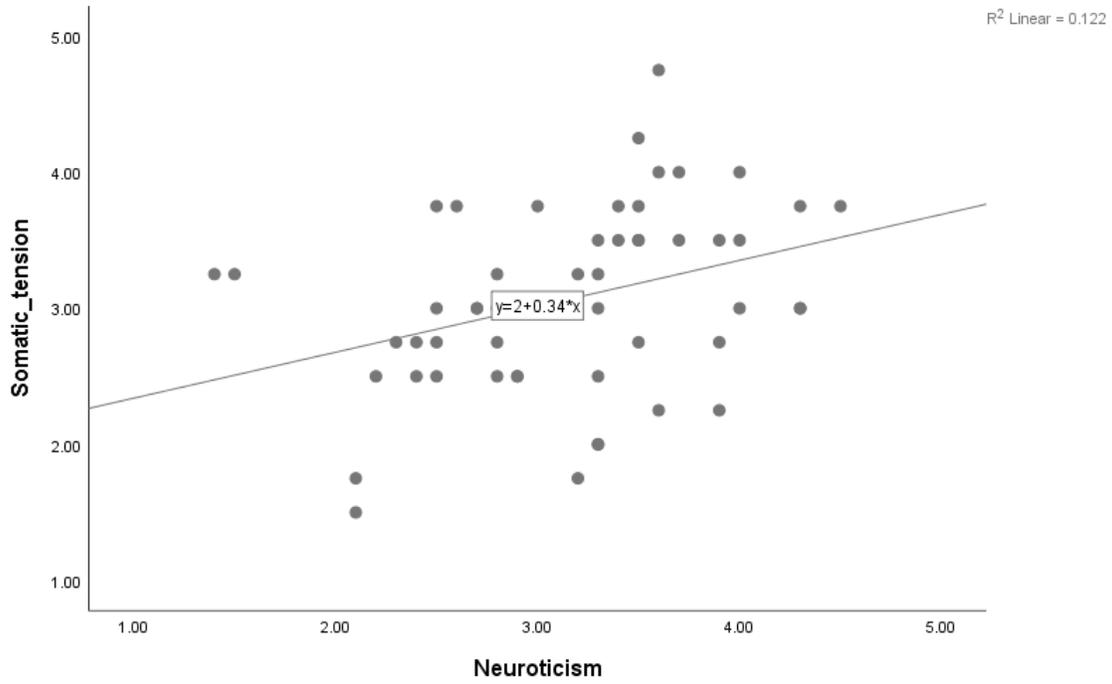


FIGURE 4.8: SOMATIC TENSION AND NEUROTICISM

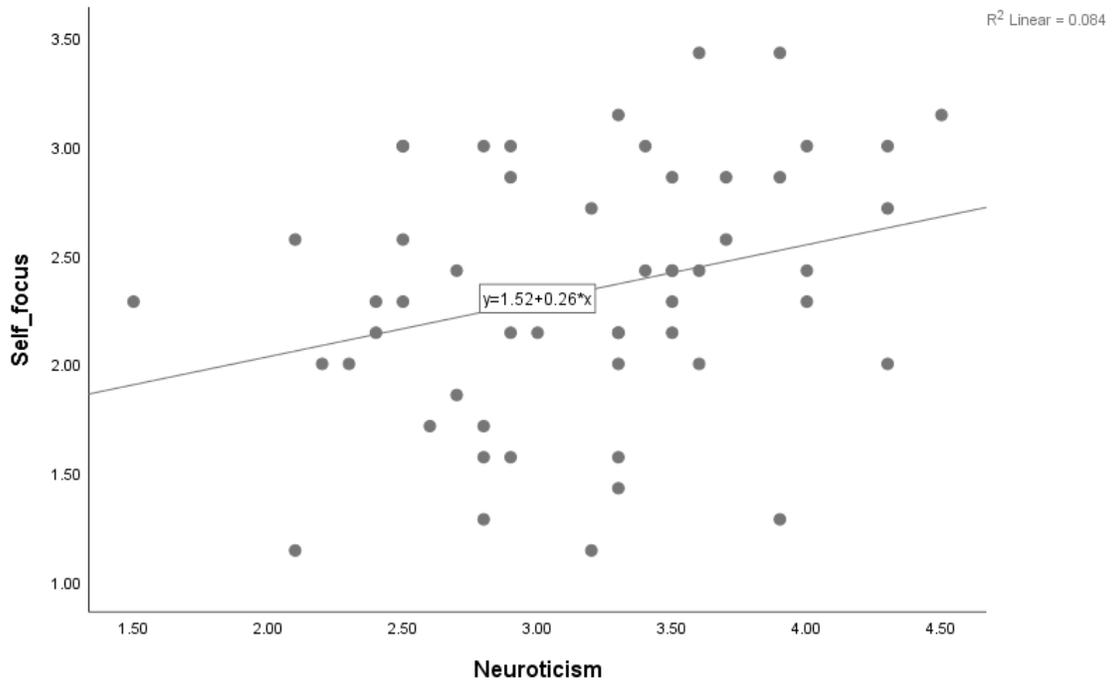


FIGURE 4.9: SELF-FOCUS AND NEUROTICISM

Figure 4.10 outlines the relationship between worry and neuroticism. The two subscales ($r=0.297$, $p<0.05$) are positively correlated. The more neurotic one is, the more likely he or she is to worry about the performance.

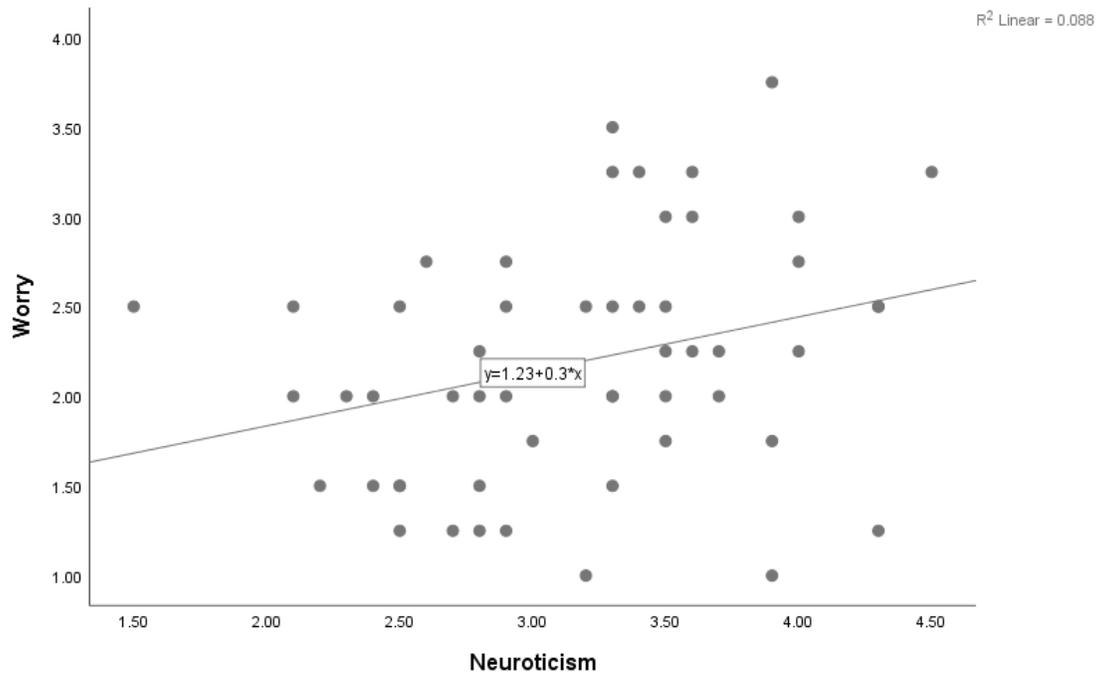


FIGURE 4.10: WORRY AND NEUROTICISM

Figure 4.11 (below) depicts the relationship between somatic tension and self-focus. These two variables are positively correlated ($r=0.365$, $p<0.01$). The more self-focused one is, the more likely he or she is to experience some degree of somatic tension.

Figure 4.12 (below) details the relationship between somatic tension and conscientiousness. There is a negative, linear correlation between these variables ($r = -.291$, $p<0.05$), hence the downward slope of the line. That is, the more conscientious a person is, the less likely he or she is to experience somatic tension. Conversely, the less conscientious one is, the more likely one is to experience somatic tension.

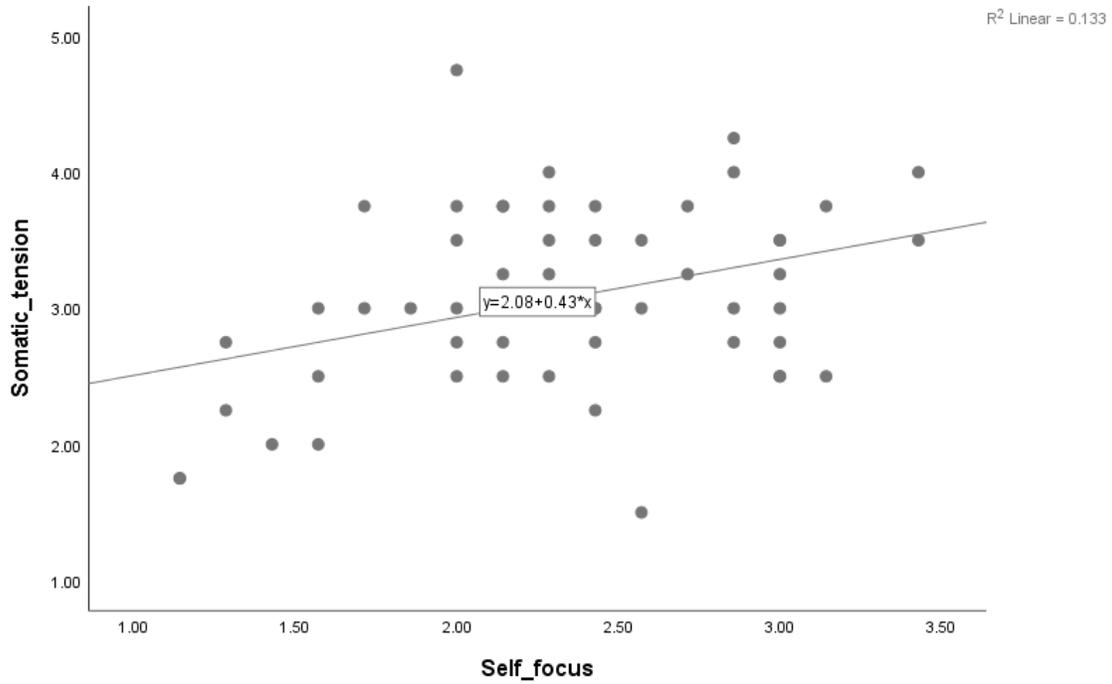


FIGURE 4.11: SOMATIC TENSION AND SELF-FOCUS

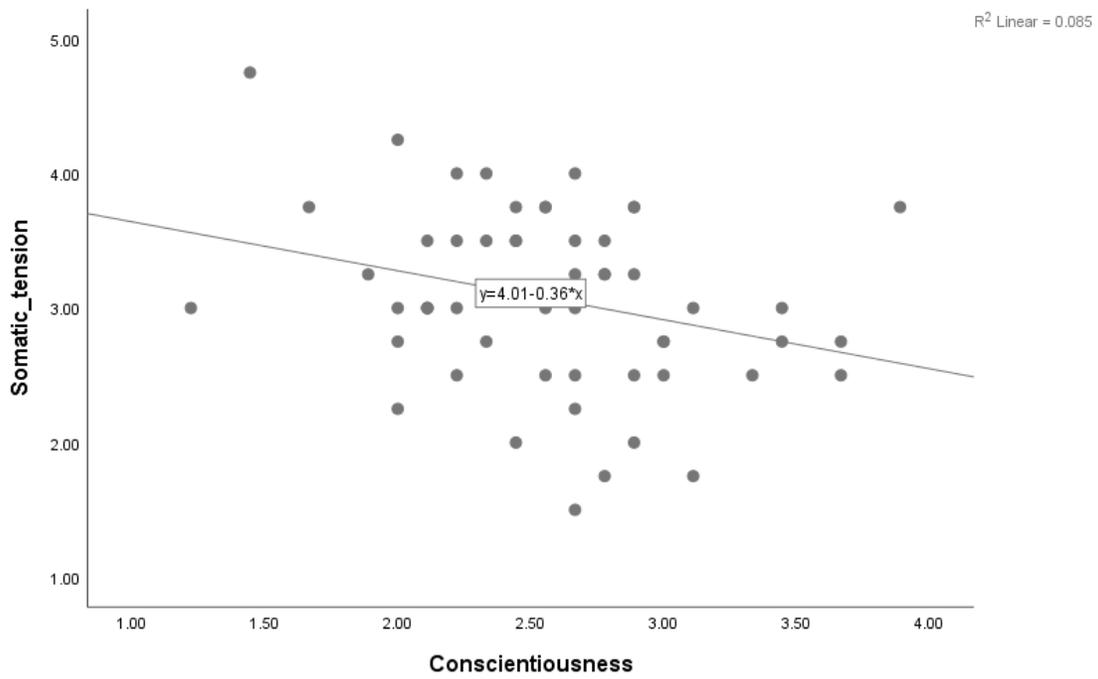


FIGURE 4.12: SOMATIC TENSION AND CONSCIENTIOUSNESS

Figure 4.13 depicts a positive, linear relationship between perceived control and openness ($r=0.398, p<0.01$). These findings suggest that the more open an individual is, the more likely he or she will feel in control of the performance. Additionally, when one feels a greater sense of control regarding performance, he or she is more likely to be more open and welcoming to the performance experience and its outcomes.

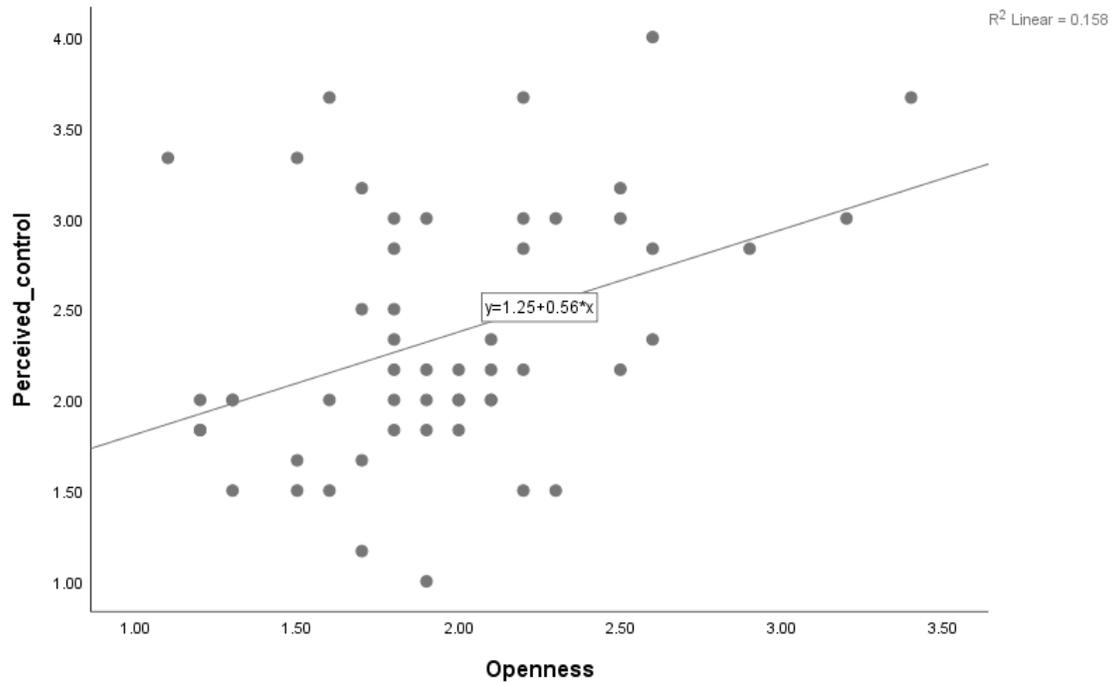


FIGURE 4.13: PERCEIVED CONTROL AND OPENNESS

CHAPTER 5

DISCUSSION AND CONCLUSION

Some degree of performance-related anxiety is extremely common among musicians (Reubart, 1985; Kenny, 2011). Though low to moderate levels of anxiety may prove unavoidable and even beneficial to performance, high levels of anxiety often negatively affect performers (Matei and Ginsborg, 2017). In fact, one study involving fifty-six orchestras reported that 70% of orchestral musicians experience anxiety at a level high enough to impair their performance (Kenny, 2006). Due to the widespread occurrence of MPA, recent research has been conducted to seek to alleviate symptoms of MPA and shed light on its primary causes. However, few studies to date have sought to compare personality constructs with performance anxiety constructs as a potential indicator of MPA. Therefore, this study primarily aimed to determine if personality constructs within the Big Five have any bearing on levels of anxiety within the “Three-Dimensional Performance Anxiety Inventory.” This chapter includes a discussion of the results found in Chapter 4, implications for performers and pedagogues, topics for further research and conclusions.

5.1 DISCUSSION OF DESCRIPTIVE STATISTICS

Responses to the five demographic questions revealed a nearly even distribution of undergraduate (45.45%) to graduate students (54.55%); a higher percentage of music performance majors (61.82%) than pedagogy/music education majors (27.27%) or music

minor/other (10.91%); and more female (60%) than male participants (40%). Nearly all students have played the piano for 11 years or more (88.89%), and a high percentage of students reported a GPA of 3.5-4.0 (78.18%).

Considering that most respondents in this sample have chosen music performance as their major, this group of participants may be more likely to be comfortable with performing or demonstrate more confidence in their performing abilities than a population who had not chosen performance as their degree emphasis. However, this is not to imply that all performance majors experience MPA to a lesser extent than non-performance majors. With almost 89% reporting playing the piano for 11 or more years, and 45.30% of those reporting 16 or more years, it is evident that participants have experienced numerous opportunities to develop their feelings and opinions about MPA. Finally, the exceptionally high number of students with a GPA of 3.5 or higher likely represents a conscientious, disciplined, and committed group of students, which is to be expected, since musicians are required to devote countless hours of practice to honing their craft.

5.2 DISCUSSION OF T-TEST RESULTS

The *t*-test found that the only statistically significant result was in the perceived control construct. Males reported a higher level of perceived control than females ($p = 0.016$). A statistically significant finding in a *t*-test is indicated by a score of $p < 0.05$. On a Likert scale of 1-5, with 1 being “strongly agree” and 5 being “strongly disagree,” questions in the perceived control construct dealt with one’s belief in one’s performing abilities, one’s feelings of readiness for the performance, and confidence levels. The complete list of questions may be found in Appendix D.

Males reported higher levels of perceived control, demonstrating a higher level of self-confidence in their performance abilities while under pressure. Similar studies have also found a significant relationship between gender and locus of control (i.e., the extent to which one believes he/she has control over the outcomes in his/her life). Lal's study (1985) on the relationship between sex differences in locus of control suggests that gender does significantly correlate with locus of control, and potentially attributes this finding to cultural gender roles and one's environmental upbringing. Specifically, males have been traditionally raised to be strong, confident, and fearless, thus possibly accounting for the higher sense of perceived control among male participants in the study. Gender differences regarding self-efficacy have also been reported in the field of sports performance, claiming that male athletes received higher results in "confidence in physical self-presentation and self-efficacy total" (Singh, Bhardwaj, and Bhardwaj, 2009). Further, Kenny's (2006) research states that females are two to three times more susceptible to experiencing anxiety in general, as well as more likely to experience MPA. While studies across disciplines have found higher levels of self-efficacy, locus of control, and perceived control among males, further study is needed to determine if these findings are due to social and cultural upbringing, genetic differences, or males' potential hesitancy to admit feelings of lower confidence in themselves.

5.3 DISCUSSION OF CORRELATIONS

Of the five personality constructs in the Big Five, three constructs were found to have a statistically significant effect on MPA. A high degree of neuroticism has a negative impact on MPA, whereas higher levels of openness and conscientiousness have a positive impact on MPA. Neuroticism survey questions deal with irritability, mood

swings, tendency to feel “blue,” and stress. Openness questions pertain to abstract ideas, vivid imagination, rich vocabulary and complex thought. Conscientiousness questions deal with being orderly, responsible, detailed and precise.

Interestingly, extraversion and agreeableness revealed no statistically significant bearing on MPA. Particularly surprising is that extraversion and its opposite, introversion, revealed no statistically significant correlation. Kemp (1996) holds that musicians are more likely than others to be introverted, possessing characteristics of being “aloof, critical, introspective, and individualistic” (Macdonald, Hargreaves and Miell, 2002). Despite Kemp’s findings (1996) that conductors, pianists, and singers tend to be more extraverted than ensemble musicians (string and wind players, for example), extraversion and introversion did not have a significant impact on the musicians in the current study.

Almost all performance anxiety constructs were found to have statistically significant correlations with Big Five traits. These constructs include worry, self-focus, somatic tension, and perceived control. Autonomic hyperactivity was the only performance anxiety construct excluded due to its low alpha number. Worry, self-focus, and somatic tension affect MPA negatively, whereas a high level of perceived control positively combats MPA. Worry deals with the cognitive fear of making mistakes, uncertainty of the performance, negative consequences and failure to reach one’s potential. Self-focus is wrought with feelings of shortcomings, critical self-evaluations, harsh judgment from others, failure to impress audience members and disappointing “important others.” Categorized under physiological anxiety, somatic tension deals with tension in the body, tension headaches, fatigue and feeling restless. Perceived control

questions demonstrate a belief in one's ability to perform well in stressful conditions, confidence to stay focused, attainable performance goals and readiness for the performance.

Neuroticism, Somatic Tension, Self-focus and Worry

As found in the results in Chapter 4, neuroticism positively correlates with three aspects of MPA, namely, somatic tension, self-focus and worry. When performers experience neurotic symptoms of frequent anxiety, high levels of stress and obsessive behavior, they are more likely to be worried about the potential negative outcomes of a performance, also raising the risk of experiencing negative physical symptoms of tension and unease. Psychosomatic studies support these findings, in which one study involving 6894 participants confirmed correlations between neuroticism and self-reported somatic tension. In the aforementioned study, researchers found significant relationships between neuroticism and many common somatic symptoms, including shortness of breath, back or muscle pain, headache, and fatigue, among several others (Rosmalen, Neeleman, Gans, and de Jonge, 2007). Similar studies have also confirmed significant correlations between neuroticism, worry, and rumination (Muris, Roelofs, Rassin, Franken, and Mayer, 2005) and a heightened risk for anxiety and depressive disorders among neurotic individuals (Bredemeier, Berenbaum, Most, and Simons, 2011).

Likewise, the relationship between neuroticism and self-focus is understandable. Neurotic anxiety may cause performers to dwell on negative thoughts about themselves and their performance. A hyperawareness of one's movements, mistakes, and shortcomings through self-focus may fuel the neurotic anxiety. Some psychologists theorize that negative self-generated thoughts may be "the engine" of neuroticism, and

that highly neurotic persons demonstrate a greater ability to imagine threatening thoughts, with or without the presence of an actual threat (Perkins, Arnone, Smallwood, and Mobbs, 2015). Particularly significant to the field of music, Perkins et. al (2015) explains that highly neurotic individuals usually excel in creative professions because of their tendency to develop unique solutions to problems through prolonged rumination, worry, and imagining a situation differently than it is in reality. Therefore, while the neurotic musician may benefit from creative thinking, negative self-generated thoughts and excessive self-focus likely lead the performer to worry more and potentially even experience psychiatric illness (ibid).

Conscientiousness and Somatic Tension

Preparation, order, following a schedule, careful attention to detail, and discipline are aspects of conscientiousness that likely help performers to experience less MPA (Pettersson and Turkheimer, 2010). Unsurprisingly, previous studies have shown that conscientiousness has a strong positive relationship with academic performance and achievement (Conrad and Patry, 2012). Further, health psychology studies have proven that individuals with higher conscientiousness enjoy “better health outcomes” (Gartland, O’Connor, Lawton, and Ferguson, 2014).

In the present study, a statistically significant negative correlation was found between conscientiousness and somatic tension. Hence, the more conscientious one is, the less likely he/she is to experience somatic tension. This finding was expected since conscientiousness likely leads to more thorough preparation before a performance. With sufficient and careful preparation, the performer will feel more confident and will be less prone to negative physical tensions that accompany a lack of preparation. Supporting

these results, Conrad and Patry (2012) discovered a positive relationship between conscientiousness and self-efficacy (i.e., one's perception of one's ability to accomplish a task) and a negative relationship between conscientiousness and test anxiety. That is, highly conscientious individuals believe in their abilities, thereby diminishing their situational anxiety (ibid).

In stressful situations or situations of perceived danger, the body's fight or flight mechanism responds physically through various symptoms (i.e., racing heart, rapid breathing, tension, headaches, and difficulty concentrating) (Schuldt, 2016). These symptoms often produce adverse effects on performance, and even more so on individuals with low conscientiousness, who likely experience stress in a particularly harmful way (Gartland et al., 2014). Conversely, some researchers hypothesize that highly conscientious individuals adapt in a positive manner to daily stressors, and that those who are self-disciplined experience fewer daily hassles (ibid). Recent research also suggests that maintaining a positive emotional outlook when coping with stress is one way to work towards better health (ibid). Thus, a high conscientiousness score has the potential to lessen the body's negative physical response to stress-inducing situations.

Openness and Perceived Control

A statistically significant positive correlation was found between openness and perceived control. Openness can indicate a vivid imagination, comfort with abstract ideas, and an eagerness for new experiences, ideas, and challenges. The current study showed that as openness increases, so does one's perceived control. "Open" performers may have less hesitation about sharing ideas and expressing themselves. Performing is a vulnerable activity, full of possibilities and unknown outcomes. An open performer will

more likely welcome the challenge of the new performing experience, the unknown outcome, and will feel more eager to share emotions and ideas in the performance.

McAllister (2013) corroborates the findings of the present study when she articulates the following:

The musicians who make the most impact on their audiences are often the ones communicating with the audience and sharing his or her interpretation honestly, he or she becomes more vulnerable. This vulnerability and the adrenaline that accompanies a performance combine to create energy, adding intensity and electricity to the music. Sometimes unplanned events, mistakes, or even memory slips may come along, but it is this precious vulnerability that establishes a connection between the audience and the performer.

With a positive view on performance, one is likely to feel more in control on stage because s/he is excited and ready for the opportunity to share. “Open” performers who exhibit perceived control would likely believe in themselves to a greater extent. In support of these findings, psychologist Albert Bandura (b. 1925), believed that his term self-efficacy, defined as “one’s perception of one’s own ability to perform a certain task successfully,” “has been shown to be the strongest predictor of a musician’s performance” (ibid).

Worry, Self-focus, and Somatic Tension

Of the five performance anxiety constructs, worry, self-focus, and somatic tension revealed statistically significant positive correlations with one another. As worry rises, self-focus rises; as worry rises, somatic tension rises; as self-focus rises, somatic tension rises. Excessive worry, self-focus, and somatic tension have a negative impact on a performance and appear to be a highly interconnected cycle.

Worry and anxiety are often experienced and imagined prior to the performance itself (Perkins et al., 2015). This anxiety may be triggered consciously by reasonable

fears or subconsciously by situations or experiences that bring anxiety-inducing experiences into memory (Kenny, 2006). When a performer is worried, thoughts about making mistakes, memory slips, disappointing others in the audience, and self-criticism often come to mind. Kenny (2011) describes this as a “self-evaluative attention state,” “in which self-evaluation of perceived inadequate capabilities to deal with the threat, in this case the imminent performance, is prominent.” With this type of focus on oneself, involving questions (for example, “What will others think of me and/or my performance?”), attention is taken away from the music. McAllister (2013) describes this internal focal struggle as “sound focus versus self-focus” and acknowledges that most musicians have wandering thoughts that may be either beneficial or distracting to their performances. And while ideally, all thoughts should be music-focused, performers’ internal monologues often become distracted with negative, self-focused, or musically unrelated thoughts that break performers’ focus on the music (ibid).

Somatic tension (i.e., tension headaches, restlessness, fatigue) during or before a performance is likely to occur when worry and self-focus are also present. The interconnected nature of these constructs is not surprising since these dimensions are all a part of the three commonly recognized factors of MPA: “cognitions, autonomic arousal, and overt behavioral responses” (Kenny, 2006). Cognitions encompass worry and self-focus, while autonomic arousal includes somatic tension. Mirroring the three overarching factors in MPA is the “Three-Dimensional Performance Anxiety Inventory” questionnaire, which classifies the three categories as cognitive anxiety, physiological anxiety, and regulatory dimension of anxiety (Cheng, Hardy, and Markland, 2009). Craske and Craig’s findings confirm the three-pronged nature of MPA in their report that

highly anxious individuals experienced anxiety in all three dimensions, whereas less anxious musicians only reported increased heart rate (Kenny, 2006).

5.4 IMPLICATIONS FOR PIANO PEDAGOGY

In the last several decades, a wide variety of methods have been developed to help alleviate negative symptoms of MPA. Marye (2011) provides a detailed summary of these methods that include: virtual reality exposure training, cognitive behavioral therapy, cognitive restructuring, exposure therapy, beta-blockers, meditation, mindfulness, acceptance and commitment therapy (ACT), psychological skills training, deep breathing, positive self-talk, relaxation methods, discussion, flooding (for example, visualizing “anxiety-inducing stimuli under live circumstances”), and pharmaceutical medication.

Aside from seeking professional cognitive/behavioral therapy and prescribed medication, music teachers and students can explore additional accessible ways to lessen the effects of MPA. This study has illustrated that conscientiousness, perceived control, and open-mindedness have a positive impact on MPA, whereas neuroticism, worry, self-focus, and somatic tension have a negative impact. With this information, it becomes imperative to encourage further development in the positive traits of conscientiousness, perceived control, and open-mindedness. Equally important is becoming more music-focused and significantly less self-focused. The following ideas are simple to implement, but can have significant results.

(1) Aim to become increasingly music-focused and less self-focused. Self-focused thoughts are often negative and may be illustrated in the following questions and statements: “I can’t believe I had a memory slip in that section;” “I hope the audience didn’t notice my mistakes;” and “My teacher will be disappointed in my performance.”

These thoughts represent self-focus on both past mistakes and the future potential disappointment. The performer is not present in the moment. Other thoughts that may occur during performance may be seemingly harmless and, at times, may even benefit the performance. To rid all unrelated thoughts from performers' minds during a performance would be virtually impossible; instead, it is far more attainable to acknowledge that these thoughts will inevitably occur and to let them quickly pass through the mind.

Additionally, McAllister (2013) suggests that sound cues, simple words or short phrases that evoke a specific sound, may be prepared in advance and recalled during a performance to keep the mind focused. Words or phrases like "warm," "bright," "bell-like," or "voice the top and bottom notes," may help performers to stay focused on the sound in the moment. Further, positive self-talk is one solution to remain focused on the music. Imagery, descriptive words, and positive phrasing such as "play this section with march-like steadiness" (as opposed to the more negative, "don't rush") may provide clear, realistic goals for the performer. Thought processes during performance should ideally be (1) in the present, (2) positive, and (3) sound-focused (ibid).

(2) Identify the primary source of anxiety. In a given piece, seek to discover if the student is mostly worried about mistakes, memory, a technical challenge, or disappointing others, to name a few. If the student is concerned about a physical response to nerves, like shaky hands, racing heart, or headache, seek to identify the underlying worry that may cause the physical response. One such solution, as detailed by a performer in Kenny's *The Psychology of Music Performance Anxiety* (2011), is to strategize long before a performance and formulate a "Plan B" in the event of a mistake or physical problem. The performer would predict specific problems, such as shaking

hands, and would envision a relaxing scene to counteract the physical response.

Likewise, if the performer were worried about memory, he would prepare “emergency points” for a quick recovery (Kenny, 2011). Additionally, being overly anxious about making mistakes or embarrassing oneself is an indication of a self-focused mindset rather than a music-focused mindset.

(3) Develop realistic, attainable performance goals. Undoubtedly, musicians long to have highly successful performances, though the pressure to achieve these performances may prove detrimental. Some performers may deal with the negative effects of perfectionism, in which they are striving for the unattainable. In fact, “perfectionists” experience higher levels of MPA, and a significant relationship has been found between perfectionism and anxiety (Kenny, 2006). Conscientiousness and perfectionism, in their detailed, diligent, and careful approach to music, may then seem to go hand-in-hand. However, sport psychologist Bill Moore encourages that a distinction be made between practice and performance mindsets: in practice, conscientiousness and the perfectionist attitude may help the student to carefully correct mistakes and artistically shape phrases; but in performance, developing the ability to perform convincingly and move beyond a mistake smoothly is paramount (McAllister, 2013). Both approaches should be taught and practiced for the most effective performance. Furthermore, an attainable performance goal will foster a greater sense of perceived control, the belief that one has the ability to successfully achieve the goal.

(4) Make careful performance repertoire selections. Most musicians understand the importance of choosing repertoire that is well-suited to the level and interest of the student. Undoubtedly, students should be exposed to a wide range of composers and

styles that both stimulate interest and challenge them to grow technically and musically. However, if a piece is too difficult, the student will likely feel more unease during the performance, leading to a lack of perceived control and more feelings of worry, self-focus, and somatic tension. Confirming these thoughts, Dale Reubart's statement that "feeling that there are no technical obstacles" helps him to view performance as "exhilarating" (Reubart, 1985). Thus, choosing a performance piece that the student feels more comfortable with will likely enhance perceived control, stimulating positive feelings that the performance will be successful. As stated in Chapter 2, Horowitz's sentiment of feeling "like the boss" or of being "a king" supports the importance of feeling in control of the performance (Schick, 2013). To achieve a more music-focused mindset, ensure that the performance repertoire is engaging and exciting musically for the student. Mozart's passion for the music itself and anticipation of the audience's enthusiastic response highlights the importance of developing a music-focused mindset (Kenny, 2011). Performers who are music-focused are more open and eager to share the music's message and less concerned about the potential negative outcomes that may arise from self-focus.

(5) Maximize positive performance experiences through collaborative performances when applicable. A sports performance study by Simon and Martens involving 749 nine to fourteen year-old boys revealed that anxiety was the highest among boys performing on a solo instrument (as opposed to test-taking and sports performance) (Kenny, 2006). Though the boys in the study also experienced higher anxiety in a band performance than in sports or test-taking, it is likely that ensemble playing can alleviate MPA by taking the focus away from the self and placing focus back onto the music and

the ensemble as a whole. As a result, the performer becomes less concerned with the audience's perception of his own ability and potential mistakes, and more excited about sharing the music itself, in turn, building more confidence and eagerness to perform.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The primary purpose of the current study was to determine if relationships exist between Big Five personality constructs and performance anxiety. Based on the current findings, the following items are recommendations for further research in the field of personality and MPA.

1. Replicate the study using a larger population sample. The number of piano students currently enrolled at the University of South Carolina School of Music largely determined the current study's population size. A larger sample size would likely impact the reliability scores of some constructs and may lead to additional findings.
2. Expand the study's population to include music majors who play instruments other than piano to determine if the same findings apply. Because collegiate classical musicians likely experience MPA in similar ways, all musicians may benefit from learning more about their own personalities, their students' personalities, and how personalities interact with and influence their performance anxiety.
3. Replicate the study using pre-collegiate musicians and amateur musicians. It would be noteworthy to find if MPA is experienced in greater extremes among musicians with fewer performance experiences and among those who have not chosen music as their profession.
4. Replicate the study using professional musicians. Performing the same study using professional musicians/concert artists may shed light on how the most experienced

musicians view and handle MPA. If findings were to reveal that highly experienced musicians are less self-focused, for example, further study could be completed to understand how they achieve their healthier outlook on performance.

5. Replicate the study using jazz and popular musicians. Further study is needed to determine if jazz and popular musicians experience MPA in similar or different ways than classical musicians, and if so, are the differences a result of personality and mindset between classical and jazz/popular musicians.
6. Conduct qualitative in-depth research in the area of perceived control. Specifically, whether most males truly do experience higher levels of perceived control (as opposed to solely reporting higher levels of perceived control), and whether the majority of individuals reporting higher perceived control give noticeably better performances.
7. Further research the effects of a self-focused versus music-focused mindset on performance. This could include a study of prominent musicians and composers to discover where their focus lies before and during performance.

5.6 CONCLUSION

Performing music can be both an exhilarating experience for some and an experience fraught with insecurities, worries, and anxiety for others. While some amount of anxiety is normal, expected, and can even be positive, extreme MPA can be discouraging and debilitating. The current study sought to find relationships between the Big Five personality constructs and constructs of the “Three-Dimensional Performance Anxiety Inventory” to seek to lessen the negative effects of MPA.

Results of the study revealed statistically significant positive correlations between (1) worry and self-focus; (2) worry and somatic tension; (3) somatic tension and self-focus; (4) neuroticism and somatic tension; (5) neuroticism and self-focus; (6) neuroticism and worry; and (7) openness and perceived control. A statistically significant negative correlation was found between conscientiousness and somatic tension.

Dimensions of extraversion and agreeableness had no statistically significant bearing on MPA, and autonomic hyperactivity was excluded from the study due to low reliability.

Findings suggest that personality constructs openness and conscientiousness have a positive impact on MPA, while neuroticism has a negative influence. Of the performance anxiety constructs, worry, self-focus, and somatic tension affect performance negatively, while a high degree of perceived control enhances one's feelings regarding performance. Consequently, the more conscientious and open performers are and the more performers believe in their abilities (perceived control), the less likely they are to experience excessive worry, tension, and physical manifestations of anxiety. Additionally, the less performers focus critically on themselves, their mistakes, and shortcomings, instead focusing on the meaning and sound of the music, the more likely they are to have a positive performing experience.

Known interventions for MPA widely vary to include cognitive and behavioral therapies, meditation and mindfulness techniques, the Alexander technique, hypnotherapy, and pharmaceutical interventions. The current study proposes accessible strategies such as becoming more music-focused, choosing performance repertoire carefully, identifying the primary source of anxiety, and playing in ensembles to reduce self-focus, worry, and somatic tension, while increasing openness, conscientiousness, and

perceived control. While pinpointing an exact solution for every student or performer is a challenging, multi-faceted, and ongoing process, it is undoubtedly a worthwhile endeavor that hopes to help musicians to overcome negative performance experiences. It is with a deeper understanding of unique personalities that we can begin to help all musicians reach their highest performance potential and successfully express their musical ideas openly and with confidence.

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APPENDIX A: INVITATION LETTER

University of South Carolina

School of Music

Study Title: *The Big Five Personality Types and Music Performance Anxiety in Collegiate Piano Students*

Lindsey Chattin, principal researcher

Dear USC Piano Students,

You are invited to participate in a research study completed by Lindsey Chattin. Ms. Chattin is a doctoral candidate in piano pedagogy at the University of South Carolina School of Music. The results of the study will be in partial fulfillment of the requirements for the Doctor in Musical Arts in Piano Pedagogy degree.

Description of the Study

The purpose of this study is to determine if personality types influence a collegiate pianist's level of music performance anxiety. If you decide to participate, you will be asked to complete the "International Personality Item Pool Big Five Markers" questionnaire and the "Three-Dimensional Performance Anxiety Inventory," as part of the researcher's survey entitled, "The Big Five Personality Types and Music Performance Anxiety in Collegiate Piano Students." You may answer all or any questions you feel comfortable answering.

Participation is confidential. Results from the surveys will be kept on a secure device at the University of South Carolina. Study findings may be published or presented at professional conferences, but your identity will remain anonymous. Please refrain from writing your name on any of the survey materials.

There is no risk or benefit involved with participation in this study.

Your participation in this study is voluntary and you may withdraw from the study at any point. Participation or non-participation will not affect your course grades at the

University of South Carolina in any way. You are giving your consent through participation in this study.

You are encouraged to ask any questions you may have about the study. You may contact Lindsey Chattin, the principal researcher, at (910) 625-0278 or at lindsey.b.vickers@gmail.com or the research study chairman, Dr. Joseph Rackers at jrackers@mozart.sc.edu.

Thank you for your consideration. If you would like to participate, please complete the surveys sent to you electronically or given to you in person.

Best regards,
Lindsey Chattin

APPENDIX B: INSTITUTIONAL REVIEW BOARD LETTER OF
APPROVAL



OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
APPROVAL LETTER for EXEMPT REVIEW

Lindsey Chattin
School of Music
813 Assembly Street
Columbia, SC 29208

Re: **Pro00066033**

This is to certify that the research study, “*The Big Five Personality Types and Music Performance Anxiety in Collegiate Piano Students*,” was reviewed in accordance with 45 CFR 46.101(b)(2), the study received an exemption from Human Research Subject Regulations on **8/25/2017**. No further action or Institutional Review Board (IRB) oversight is required, as long as the study remains the same. However, the Principal Investigator must inform the Office of Research Compliance of any changes in procedures involving human subjects. Changes to the current research study could result in a reclassification of the study and further review by the IRB.

Because this study was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration date.

All research related records are to be retained for at least three (3) years after termination of the study.

The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). If you have questions, contact Arlene McWhorter at arlenem@sc.edu or (803) 777-7095.



Sincerely,
Lisa M. Johnson
IRB Assistant Director

APPENDIX C: INTERNATIONAL PERSONALITY ITEM POOL BIG FIVE FACTOR MARKERS

International Personality Item Pool Big Five Factor Markers

Version Attached: Full Test

Extraversion

1. I keep in the background.
2. I am quiet around strangers.
3. I do not talk a lot.
4. I have little to say.
5. I do not like to draw attention to myself.

6. I feel comfortable around people.
7. I do not mind being at the center of attention.
8. I start conversations.
9. I am the life of the party.
10. I talk to lots of different people at parties.

Neuroticism

1. I am relaxed most of the time.
2. I seldom feel blue.

3. I make a mess of things.
4. I am easily disturbed.
5. I get stressed out easily.
6. I change my mood a lot.
7. I often feel blue.
8. I get irritated easily.
9. I have frequent mood swings.
10. I get upset easily.

Openness

1. I have difficulty understanding abstract ideas.
2. I am not interested in abstract ideas.
3. I do not have a good imagination.

4. I spend time reflecting on things.
5. I am quick to understand things.

6. I have a vivid imagination.
7. I use difficult words.
8. I have a rich vocabulary.
9. I have excellent ideas.
10. I am full of ideas.

Conscientiousness

1. I leave my belongings around.
2. I often forget to put things back in their proper place.
3. I make a mess of things.
4. I shirk my duties.

5. I pay attention to details.
6. I am exacting in my work.
7. I am always prepared.
8. I like order.
9. I follow a schedule.
10. I get chores done right away.

Agreeableness

1. I am not really interested in others.
2. I am not interested in other people's problems.
3. I feel little concern for others.
4. I insult people.

5. I make people feel at ease.
6. I am interested in people.
7. I have a soft heart.
8. I take time out for others.
9. I sympathize with others' feelings.
10. I feel others' emotions.

APPENDIX D: THREE-DIMENSIONAL PERFORMANCE ANXIETY INVENTORY

Three-Dimensional Performance Anxiety Inventory

Version Attached: Full Test

Items

Subscale of cognitive anxiety

Worry

I am worried that I may not perform as well as I can.

I am worried about making mistakes.

I am worried about the uncertainty of what may happen.

I am worried about the consequences of failure.

Self-focus

I tend to dwell on shortcomings in my performance.

I find myself evaluating myself more critically than usual.

I am very conscious of every movement I make.

I am conscious that others will judge my performance.

I am conscious that people might disapprove of my performance.

I dwell on how I might fail to impress important others.

I am very aware of the possibility of disappointing important others.

Subscale of physiological anxiety

Autonomic hyperactivity

My heart is racing.

My hands are clammy.

My mouth feels dry.

I feel the need to go to the toilet more often than usual.

Somatic tension

I have a slight tension headache.

I feel easily tired.

My body feels tense.
I feel restless.

Subscale of regulatory dimension of anxiety

Perceived control

I am confident that I can stay focused during my performance.

I believe in my ability to perform.

I feel ready for my performance.

I believe that I have the resources to meet this challenge.

I believe my performance goal is achievable.

I feel confident about my upcoming performance.

PsycTESTS™ is a database of the American Psychological Association