Stress to Success: Public Speaking Anxiety and its Relationship to Perceived Leadership

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Stress to Success:
Public Speaking Anxiety and its Relationship to Perceived Leadership

A DISSERTATION SUBMITTED TO THE FACULTY OF THE SCHOOL OF EDUCATION
OF THE UNIVERSITY OF ST. THOMAS

MINNEAPOLIS, MINNESOTA

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James K. Arnold

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Stress to Success:
Public Speaking Anxiety and its Effect on Perception of Leadership

We certify that we have read this dissertation and approved it as adequate in scope and quality. We have found that it is complete and satisfactory in all respects, and that any and all revisions required by the final examining committee have been made.

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Abstract

Public speaking anxiety (PSA), a form of social phobia, is a common and debilitating issue for many professionals, affecting approximately 70% of the population to varying degrees. With communication skills like public speaking becoming more and more demanded in the workplace, those with high PSA may find that career choices and advancement become limited, creating barriers to career success. Leadership acumen is a highly-prized asset in organizations, and employers seek applicants whom they perceive to have strong leadership potential. This study brings together the phenomena of public speaking anxiety and perceived leadership potential, exploring relationships between them with a goal of contributing to leadership development in post-secondary business education. A group of 151 MBA students participated in the study. Their public speaking anxiety as both an enduring trait and a state-dependent condition across five business presentations was measured, along with sex, age, and perceived leadership. Results suggest that relationships between public speaking anxiety and perceived leadership do exist, and at significant levels. Sex showed some relationship to speaking anxiety but not perceived leadership, and age did not relate to either. Current issues in leadership development are discussed, as well as suggestions for future research and implications for business education.
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Chapter 1

Introduction

Public speaking is a frequent and crucial activity in today’s workplace (Baccarani & Bonfanti, 2015). Expressing ideas, persuading others, and simply providing information occur in all aspects of daily professional life (Harper, 2004). Communication also plays a central role in leadership, with high incidences of communicative leadership behaviors seen among those who become leaders (Tourish & Hargie, 2009).

Because this skill has been shown to be so important, it is especially troubling that public speaking is also a major fear of many people (Baccarani & Bonfanti, 2015), and continues to be in the top ten American fears, even more common than fear of death (Bottles, 2010). As comedian and writer Jerry Seinfeld (Seinfeld, 1993) put it: “to the average person … if they have to go to a funeral, they’d be better off in the casket than giving the eulogy” (p.120). This fear, and the anxieties that accompany it, leads many people to avoid giving presentations altogether (Bodie, 2010).

A number of remedies to reduce public speaking anxiety (PSA) exist, including cognitive-behavioral therapies, exposure therapies, skills training, and others, and all have been shown to reduce PSA at varying levels (Bodie, 2010; Finn, Sawyer, & Schrodt, 2009). Many public speaking courses have also infused PSA treatments into their course designs, which have been successful for those who have used them (Richmond, Wrench, & McCroskey, 2013). Rather than using PSA reduction techniques, however, most people instead choose to remain in a state of learned helplessness, a concept first developed by psychologist Martin Seligman (1975) and described as “the condition of a human or animal that has learned to
behave helplessly, failing to respond even though there are opportunities for it to help itself by
avoiding unpleasant circumstances or by gaining positive rewards” (p.42-43).

Further, while speech courses are sometimes required in secondary education, they are
rarely required in post-secondary study, even though repeated exposure to the skill has been
shown to be a valid PSA reduction therapy (Richmond et al., 2013).

In recent years, corporations have witnessed dramatic changes, including flatter and
looser structures, downsizing, globalism, technological innovations, and a changing nature of
the workforce (Lievens, Van Geit, & Coetsier, 1997). Leadership is seen as a critical factor in
initiating and implementing the activities needed to address these issues and sustain
profitability (Lievens et al.). Organizations seek to hire people who are seen as having
leadership potential, because they believe leaders will bring special talents to address important
issues such as these, as well as improve bottom-line results (Northouse, 2016).

Academic institutions throughout the country have responded to this need by providing
programs in leadership studies (Northouse, 2016). For example, in the Master of Business
Administration (MBA) program at the institution used in this study, leadership is a required
course, with numerous courses on various leadership topics also offered as electives.

Many leadership theories exist, and several are addressed in the ensuing literature
review. Central to these theories is leadership communication, with Robinson (2001) stating
that “leadership is exercised when thoughts expressed in talk or action are recognized by others
as capable of progressing tasks or problems which are important to them” (p. 93). Watzlawick,
Beavin Bavelas, and Jackson (2011) underscore the importance of leadership communication
with their statement that “leaders cannot not communicate” (p. 49).
Public speaking, an important part of leadership communication, is a crucial workplace skill, and making presentations is very often a necessary part of work responsibilities (Bodie, 2010). For example, a study by Robles (2012) found that 100% of executives surveyed listed communication skills such as public speaking as extremely important. Public speaking is also an important aspect of perceived leadership, as people who speak well are generally perceived as intelligent and confident, and successful speakers are often seen as leaders (Rowh, 2009).

Need for Study

For the past fifteen years, the researcher has taught a course in verbal communication skills in a full-time MBA program at a mid-sized, upper-tier (as measured by accreditation by the Association to Advance Collegiate Schools of Business), private university in the midwestern United States. This course approaches verbal communication acumen primarily through developing the presentation skills of its students. In the course, a required element in the MBA program, students create and deliver fourteen presentations, covering various topics in both formal and extemporaneous situations, over their first year in the program.

With the majority of the general population reporting having moderate to high anxiety regarding giving presentations (Beck, 1976), PSA plays a role in any presentation skills training. In this course, numerous well-researched strategies for reducing PSA are taught, and personal coaching is offered to help students deal with what so many find to be a very debilitating condition. Less than one-fourth of students take advantage of this coaching opportunity, however.

Over the course of the academic year, students often make remarks along the lines of “I’m glad I took advantage of the coaching opportunity, I feel less anxious in speaking now,” and “I was so scared of giving speeches, but once I had the verbal communication class, I was
not only less nervous about public speaking, but I became a better communicator overall.” At the same time, there is always a substantial number of students who have high levels of PSA and nervousness about speaking, but ignore strategies to ameliorate it, including the personal coaching offered. These students seem to simply accept their PSA as a given, without considering the downstream consequences of doing so, and despite learning about available strategies for ameliorating it during the course. In essence, they choose a state of learned helplessness, defined on page 1 of this document.

In addition to communication acumen, this MBA program places considerable emphasis on the development of leadership skills, a common topic in MBA curricula. Those who hire MBAs have, for a number of years, stated that their perception of the leadership potential in applicants plays a major role in hiring (Curtis & Stephens, 1989). Students in the aforementioned program generally understand this fact, and many of them embrace the process of identifying their values, evaluating their skill sets and developing strategies to become better and more employable leaders.

Of interest is the fact that these MBA students are willing to develop leadership skills, but many shy away from addressing their own public speaking anxiety, when speaking is considered by employers to be an important component of leadership. Also of interest is the question of why more top MBA programs do not include verbal communication skills, including coverage of speaking anxiety, amongst their core requirements, even though employers appear to be demanding them. These observations from the personal experience of the researcher are further reinforced in the research literature. PSA is both highly prevalent and debilitating, affecting many areas of one’s personal, educational, and professional lives. In
fact, research from McCroskey (2009, 1977a) found that 70% of Americans report feeling apprehensive about public speaking.

While strategies to reduce PSA are available and described in the literature review, many people with high levels of PSA simply avoid public speaking to the greatest extent possible, even though employer research underscores its importance in hiring and career advancement (Bodie, 2010). Therefore, providing incentives to reduce PSA is important, and best occurs earlier in one’s career in order to reduce negative outcomes (Bartholomay, 2015).

At the same time, educators have long suggested that academic courses should prepare students for public speaking skills in the workplace. In a 2004 study, Zekeri found that communication and public speaking skills were reported by post-secondary students as most essential for improving their career experiences.

In addition, scholars have focused a great deal of attention on communication-based anxiety (Waldeck, Kearney, & Plax, 2001), of which public speaking anxiety is a subset. Entire programs of research have been devoted to diagnosing communication anxiety, particularly in public speaking situations (Finn, Sawyer, & Behnke, 2009). These studies have focused on the causes, correlations with other factors, and the treatments used to help people overcome PSA (e.g., Bodie, 2010; Dwyer, 2000; Finn et al., 2009). However, in most of these cases, only cursory references to the downstream effects of high levels of PSA have been made. No research was found that was devoted to finding relationships between PSA and how others perceive one’s leadership potential.

This dissertation seeks to fill this gap, by examining relationships between PSA and perceived leadership in order to contribute to student learning and career outcomes. If relationships between PSA and perceived leadership can be shown to exist, it would help
convince leadership-seeking students of how their speech anxiety could constrain them in their careers, and they may find more motivation to think of their PSA as a fluid, rather than fixed, state, and be open to strategies to address it. If there is no such relationship, an emphasis on this skill may be misplaced.

In addition, if this relationship were documented, faculty charged with curriculum design in graduate education programs such as MBA programs, with their goal of teaching leadership acumen, may find motivation to teach public speaking skills, including anxiety-reducing skills, as core elements of their programs, rather than relegating them to the status of electives, which students with high PSA have been shown to avoid (Wardrope, 1996).

Further, ascertaining such a relationship could give these programs another tool for identifying potential roadblocks to upcoming leadership education, and provide a competitive edge in recruiting students.

**Research Questions**

The relationship between public speaking anxiety (PSA) and perceived leadership, with a mitigating focus on the efficacy of using a formal graduate-level course in reducing PSA, was the focus of the research for this dissertation. Although considerable research on both PSA and perceived leadership already exists, a considerable gap emerges when looking for any literature uniting the two phenomena in any meaningful way.

To add rigor to the analysis, and potential usefulness to any results, the demographic factors of sex and age were also included.

The questions under study in this research were:

RQ1: What relationships exist between the presence and degree of an individual’s public speaking anxiety and their propensity to be perceived as a leader?
RQ²: Which PSA factor, trait-based or state-based (described in the ensuing glossary of terms), demonstrates a stronger relationship and better predicts perceived leadership?

RQ³: Does sex moderate the relationships between PSA and perceived leadership?

RQ⁴: Does age moderate the relationships between PSA and perceived leadership?

Definition of Terms

Several terms are used throughout this research:

Anxiety. A state of arousal occurring when a person experiences a situation as personally threatening, either physically or psychologically, which triggers a physiological response (Laukka et al., 2008, p. 197).

Public speaking. The act of giving a planned or extemporaneous speech to an audience.

Public speaking anxiety (PSA). A specific anxiety in which individuals experience physiological arousal, negative cognitions, or behavioral responses to real or anticipated presentations (Daly, McCroskey, Ayres, Hopf, Sonandre, & Wongprasert, 2009).

Trait public speaking anxiety (trait PSA). A relatively enduring personality characteristic in which people feel anxiety in any public speaking situation (McCroskey, 1977b).

State public speaking anxiety (state PSA). A level of public speaking anxiety which is dependent on the context of a given presentation situation, such as type of audience and/or difficulty of material (Booth-Butterfield & Booth-Butterfield, 2004, p. 73).

Perceived leadership. An appraisal by others that an individual possesses leadership talents and/or potential.

Chapter Summary

In sum, public speaking anxiety (PSA) has been shown to be both common and detrimental to one’s career and life, both present and future. While certain aspects of
communication anxiety, and PSA as a subset of it, have been well-studied, its relationship to leadership remains unstudied or under-studied. Thus, the need for this research exists, examining potential relationships between this phenomenon and perceived leadership potential. Terms relevant to the study were defined. The following literature review expands on these notions.
Chapter 2

Literature Review

This chapter introduces the two constructs addressed in this research: public speaking anxiety and perceived leadership. After defining public speaking anxiety based on numerous scholarly sources, its determinants are explored, as well as its effect on those who suffer from it. Remedies for public speaking anxiety, and their various efficacies, are also covered.

Leadership has been defined in numerous ways, far too many to cover in a single document. However, in this chapter, major theories will be covered, within a framework of viewing leadership through the lenses of leader, leadership context, and followers. A brief review of research on how sex and age impact these constructs is also offered.

Finally, the concept of perceived leadership, the degree to which others perceive a person as a leader, or having leadership potential, is discussed.

Public Speaking Anxiety (PSA)

Definition and prevalence. A considerable amount of research on public speaking anxiety (PSA) exists, from pioneering research by McCroskey (1977a) to more recent studies by Bodie (2010); Dwyer and Davidson (2012); Finn, Sawyer, and Schrodt (2009); Nelson, Deacon, Lickel, and Sy (2010); and Safir, Wallach, and Bar-Zvi (2012).

Anxiety in general is defined by Laukka et al. (2008) as “a state of arousal occurring when a person experiences a situation as personally threatening, either physically or psychologically, which triggers a physiological response” (p. 197). While some levels of anxiety can be beneficial, they become problematic when manifesting into a sense of
powerlessness and/or paranoia that interferes with a person’s ability to function (Walsh & Ugumba-Agwunobi, 2002).

Public speaking anxiety (PSA), a subset of generalized communication anxiety, is defined by Daly, McCroskey, Ayres, Hopf, Sonandre, and Wongprasert (2009) as “a specific, anxiety in which individuals experience physiological arousal, negative cognitions, or behavior responses to real or anticipated presentations” (p. 73).

PSA is the most commonly-experienced social phobia (Safir et al., 2012). Also termed fear of public speaking, speech anxiety, and sometimes stage fright (Ayers, Hopf, & Peterson, 2000), the condition has its own classification as a social anxiety disorder in the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (American Psychiatric Association, 2013). It causes clinically significant distress and impairment in social, occupational, and other areas of functioning (Pull, 2012), and can hinder career aspirations as well as overall life satisfaction (Emanuel, 2005). PSA can even cause sufferers to avoid public speaking to the greatest extent possible, even though employer research underscores its importance in hiring and career advancement (Bodie, 2010).

According to an article by McCroskey (2009), reviewing and highlighting his past research, approximately 70% of the general public reports having moderate to high levels of PSA. Other studies report that this fear is greater than fears of heights, flying, drowning, snakes, insects, and even death (Dwyer & Davidson, 2012).

**Physical effects of PSA.** The physical effects of anxiety surrounding delivering presentations are commonly reported. Although the specific ways in which individual speakers are impacted varies considerably (Smith, Sawyer, & Behnke, 2005), the results appear as physiological, cognitive, and behavioral responses (Bodie, 2010). Physiological responses can
include increased blood pressure and heart rate, shortness of breath, heart palpitations, nausea, stomach distress, sweating, trembling, dizziness, numbness, and forgetfulness (Bodie, 2010). Cognitive manifestation can include excessive self-attention and negative self-focused thoughts about outcomes and evaluation from others (Richmond et al., 2013). Behavioral responses often include poor speech preparation (Daly, Vangelisti, & Weber, 1995), poor decision-making, and negative affect and effect in performance (Beatty & Clair, 1990).

**Downstream effects of PSA.** Although common, PSA is nonetheless debilitating in a number of ways. Avoiding presentations can create significant barriers to achievement in occupational settings, since presentations are increasingly common in the workplace (Baccarani & Bonfanti, 2015). Further, according to Bartholomay and Houlihan (2016), PSA often results in impairment in career prospects. Emanuel (2005) further cites the importance of public speaking to employability and upward mobility.

In a study by Stein, Walker, and Forde (1996), 17% of respondents reported that their PSA had negative effects on their education, occupation, and/or social functioning. Ericson and Gardner (1992) reported that students with high communication anxiety are more likely to drop out of college, and a study by Boohar and Seiler (1982) demonstrated that such individuals can also have limited occupational choices. An analysis of multiple studies by Giffin and Heider (1967) found a significantly negative correlation between levels of speaker anxiety and trust, initiative, and positive self-concept. As an extreme example, Rodebaugh and Chambless (2004) cite a situation in which a client with high PSA suffered symptoms dire enough to cause him to avoid pursuing a graduate degree because of the probability that he would be required to give presentations.
Determinants of PSA. Considerable research addresses the question of why people experience public speaking anxiety. The earliest theoretical account dates back to 1943 (Henrickson), and proposed that PSA resulted from speakers lacking specific skills. Years later, Phillips (1991) explained that PSA comes from an accumulation of data over early periods of one’s life: “Speaking skills are generally acquired from one’s social network; thus, by the time a student enters a formal, college public speaking classroom, their social errors have become habits” (p. 23). Still other research suggests that PSA is a summation of experiences (Beatty & Behnke, 1991), learned from negative encounters in the past (McCroskey, 1984). Such negative experiences – e.g., being laughed at, ridiculed, or in some way rejected – reemerge in the stressful environment of giving a speech (McCroskey), manifesting in a strong tendency for people high in PSA to have negative thoughts intrude on their ability to perform well (Addison, Clay, Xie, Sawyer, & Behnke, 2003). Finally, other research argues that PSA is an inborn trait (Beatty, McCroskey, & Valencic, 2001), with past experience having no relevance.

As these theoretical perspectives suggest, PSA can be conceptualized in at least two ways: as a trait and as a state. Both are addressed and included in this dissertation. Individuals with trait PSA display nervousness in most public speaking situations regardless of context. State PSA, also sometimes referred to as context-based PSA, is seen in people who experience anxiety in specific, but not all, public speaking situations (Booth-Butterfield & Booth-Butterfield, 2004). Currently, most thinking conceptualizes PSA as both a trait and a state, with these two components interacting, each contributing to or ameliorating overall anxiety levels (Bodie, 2010).
**Remedies for PSA.** Volumes of research exist on the topic of how to treat, and thus reduce, public speaking anxiety. The main categories are cognitive-behavioral remedies, exposure therapies, and skills training, all adapted from psychotherapy and designed to treat high trait-anxious speakers (Duff, Levine, Beatty, Woolright, & Park, 2007).

Cognitive-behavioral therapy (CBT) is the predominant form of psychological therapy for anxiety disorders (Willner & Lindsay, 2016). Derived from psychologist Albert Ellis’ (1962) concept of rational-emotive therapy, the central precept of cognitive–behavioral therapy is that thoughts have a great amount of impact on emotions and behaviors (Beck, 1976). CBT further assumes that any social phobia involves overestimating both the probability and cost of feared outcomes in a negative social situation (Nelson et al., 2010). In the case of PSA, for example, an individual may think that the odds of appearing foolish or being criticized when speaking are very high, even without evidence suggesting this is true.

Most cognitive-behavioral therapies involve taking a realistic look at the probabilities of these imagined negative outcomes, and changing or reinterpreting the thoughts that led to them (Beck, 1976). In the case of PSA, CBT assumes that the condition arises mainly from negative and/or irrational thoughts about public speaking in general. It attempts to replace problematic public speaking thoughts with more positive views of speaking and the efficacy of the speaker (Bodie, 2010). In one example, Smits, Powers, Buxkamper, and Telch (2006) had individuals with high PSA deliver video recorded presentations to an audience. When reviewing the videos, subjects realized that imagined negative outcomes were much more unlikely than they had thought they would be. Even when negative outcomes did occur, they tended to be of a much smaller magnitude than expected.
Exposure therapies, first described by Barlow in 1984, involve processes by which an individual makes contact with a particular anxiety-inducing stimulus. Systematic desensitization, an oft-used form of exposure therapy, views anxiety mainly as an issue arising from a negative association with an anxiety-producing event. In the case of PSA, for example, a speaker may associate a speech with failure, ridicule, or negative critique. Systematic desensitization attempts to change the negative relationship between that stimulus (in this case, public speaking) and the anxiety it causes. It focuses solely on reducing reactivity by graduated exposure to speaking situations of greater potential stimulation (Bodie, 2010).

Skills training is a behavioral treatment that considers PSA to be a result primarily of lack of competence or expertise, that is, as a skill deficit (Hopf & Ayres, 1992). The remedy is generally comprised of having speakers give practice speeches with feedback, as well as providing instruction, modeling, and coaching. The underlying assumption is that teaching these skills “reduces the ambiguity of public speaking situations by providing knowledge and techniques necessary for public speaking” (Hopf & Ayres, p. 186). In educational settings, skills training through a required communication course is one remedy used to attempt to reduce PSA among participants.

A primary goal of skills training is the building of self-efficacy, originally defined by Bandura (1977) as “one's belief in his/her ability to succeed in specific situations or accomplish a task” (p. 193). While low self-efficacy concerning a given behavior or event could result in fear surrounding it, higher self-efficacy can create a mental mechanism by which controllability reduces fear (Bandura, Adams, Hardy, & Howell, 1980). Stated another way, the more people believe they can control a situation, the less anxiety they will have about it.
Self-modeling, also considered an outgrowth of Bandura’s (1977) work, is a skills training technique in which speakers learn from their own examples of mastery. Here, the speaker views video recordings of past presentations and takes special note of the positive/desired behaviors occurring. Another benefit of self-modeling is that it creates behaviors that often generalize to other situations (Buggey, 1995). For example, a student using self-modeling with regard to public speaking may not only see reduced PSA, but can also become more confident and assertive in other communication situations (Buggey). This is one explanation for the expected relationship between PSA and leadership.

In this research, self-modeling through video recording is a second anxiety-reducing technique employed in the MBA program described in the introductory chapter.

**Leadership**

**Defining leadership.** Leadership has been defined in many ways, including “a process through which an individual influences group members toward attaining defined group or organizational goals” (House & Podsakoff, 1995, p. 46), “a communication process to influence others to understand and agree about what needs to be done and how to do it” (Yukl, 2006, p.8), and “facilitating an accomplishment of shared objectives through various communication behaviors and activities” (Yukl, 2006, p. 5). Questions surrounding leadership and what makes good leaders have been asked by philosophers, scholars, and business professionals for many centuries (Rothausen & Christenson, 2014). Little agreement exists regarding a concise, all-encompassing concept of leadership, and a variety of theoretical approaches attempt to explain the complexities of the leadership process. A sampling of them are described in this review. A recent review by Lowe (2015) identified at least 30 different models, and Bass and Bass (2008) conveyed that “leadership is ambiguous, with no clear
definition or meaning across people” (p. 19). New definitions will continue to emerge over time, because leadership is a “complex, multi-level, and socially constructed process” (Gardner, Lowe, Moss, Mahoney, & Cogliser, 2010, p. 995).

However, a helpful general framework for viewing leadership has been provided by Rothausen and Christenson (2014), who divide the phenomenon into three categories: the leader, the context, and the followers.

**The leader.** Numerous studies have focused on the leader as an individual. Trait theory has sought to identify specific personal traits that allow one to persuade followers to take specific actions.

The trait approach to leadership is founded on the idea that there are specific attributes that good leaders possess. The approach assumes that people who have these traits will emerge as leaders across a variety of contexts, groups, and tasks (Stewart, 2001). Following the precept that leaders are born and not made, the bottom-line goal of the trait approach is thus to identify those traits consistently predicting success in leadership (Stewart).

Traits receiving the most attention in early leadership research included physical characteristics (e.g., height and appearance), personality variables (e.g., self-esteem and dominance), and aptitudes (e.g., intelligence and verbal fluency) (Yukl, 2006). In later years, the list of traits expanded, with Bass (1990) stating that traits common in effective leaders generally include energy, enthusiasm, intelligence, assertiveness, creativity, originality, and persistence, although no one trait is predictive of who rises to leadership positions.

Scholarly literature in previous years did not lend much support to leadership trait theory. In a review of the trait approach, Northouse (2016) found that most leadership traits generated by early authors did not predict leadership success across circumstances, and that
studies produced results that were ambiguous and uncertain. This led to a general belief that older trait approaches, as used according to studies like these, were not efficacious for studying and predicting leadership (Yukl, 2006).

More recent research, however, has encouraged another look at trait theory. A weakness of older uses of leadership trait theory was that a very large and disparate number of features and adjectives were used (Stewart, 2001). Over the course of many years, this broad list was grouped into five distinct groups, now called the Five Factor Model of Personality Traits (FFM) or, more informally, the Big Five (John, Hampson, & Goldberg, 1991). These traits comprise the following five dimensions used to describe human personality in general.

Openness reflects intellectual curiosity, imagination, and appreciation for inventiveness over caution and strict routines. Conscientiousness is a general tendency toward self-discipline, dependability, and achievement-orientation. Extraversion refers to qualities of energy, positivity, assertiveness, and sociability/talkativeness. Agreeableness involves having a helpful and trusting nature, demonstrating compassion, and fostering cooperation. Finally, emotional stability is a tendency to not easily experience negative emotions such as anger, anxiety, and insecurity, coupled with higher degrees of impulse control (Atkinson, Atkinson, Smith, Bem, & Nolen-Hoeksema, 2000; Judge & Bono, 2000).

Of particular interest in this study is the FFM trait of emotional stability. According to Thompson (2008), individuals possessing lower degrees of emotional control are likely to have greater negative responses to stressors, and interpret ordinary situations as threatening and difficult. This concept aligns with Beatty and Behnke’s (1991) conceptualization of PSA as a summation of experiences learned from past negative encounters, reemerging in the stressful environment of giving a speech.
Judge, Bono, Ilies, and Gerhardt (2002) further assert that lower levels of emotional stability are negatively related to leadership emergence and effectiveness. Because PSA is a subset of generalized anxiety disorder, and individuals with low levels of emotional stability are likely to experience various forms of anxiety, the broader stream of research supports the idea that a narrower element, PSA, will be related to perceived leadership.

A review by Ormel, et al., demonstrated that women and youth are among groups with lower levels of emotional stability. This may mean that it is not, in fact, a stable personality factor, but instead may be the result of one’s treatment in society. The effect of sex and age on one’s propensity to be seen as a leader was explored as part of this study.

Reviews of a FFM approach to leadership have been more optimistic than those of previous trait theories. In terms of the workplace, numerous researchers (e.g., Hofmann & Jones, 2005; Judge & Bono, 2000; Mount & Barrick, 1998; Taggar, Hackew, & Saha, 1999; Witt, 2002) believe that Big Five traits are predictive of future professional success. Further, a 1992 study by Sinclair and Barrow found several significant correlations with job performance and high openness, high extraversion, and high emotional stability. Finally, in a recent study linking FFM traits to leadership emergence, individuals scoring higher on extraversion, openness, and conscientiousness were more likely to be perceived as leaders, and chosen for roles in task- and relationship-oriented situations requiring strong leadership (Emery, Calvard, & Pierce, 2013).

The next type of model of leadership focusing on the leader is behavioral, centering on specific behaviors used by successful leaders. This frame has received increased attention in more recent years (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006).
Because a behavior is a potentially measurable action which can be observed in different settings, it offers another mode of thinking about leadership, while retaining focus on the individual leader (Northouse, 2016). While leadership trait theories can be characterized as assuming that leaders are born, behavior theories lend support to the notion that leaders are, or can be, made.

Although different researchers explored differing behaviors, Bass’s early research, considered classic in the field, serves as one example. His 1990 study defined leadership in terms of three behaviors: charisma, intellectual stimulation, and individualized consideration. Charisma refers to “the inspirational elements of leadership, idealized influence, and inspirational motivation” (Bass, p. 21). In this model, leaders with charisma are able to articulate a desirable vision and speak about it with confidence and enthusiasm. Intellectual stimulation and individualized consideration, also facets of transformational leadership, will be defined and discussed later in this review.

In a meta-analysis of leadership behaviors, Fleishman, Mumford, Zaccaro, Levin, Kovotkin, and Hein (1991) found 65 classification systems of leader behavior. They further noted that each system found behaviors that fit within two general categories: task-focused and person-focused. According to Salas, Dickinson, Converse, and Tannenbaum (1992), task-focused behaviors facilitate understanding task requirements and operating procedures, while person-focused behaviors facilitate behavioral interaction, cognitive structures, and attitudes, and create clear channels of communication.

Other authors have differing lists of behaviors. Barge (1994), for example, posits that leadership is best explained by communication skills, and Wolvin and Coakley (1991) suggest that all organizations need and desire effective communication.
Leadership as a skill is a third leader-focused approach. The skill approach adds to trait and behavioral theories by suggesting that knowledge and abilities are also important characteristics for a leader to possess (Northouse, 2016).

Research by Katz (1995) suggested that three talents form a skill set for leaders: technical, conceptual, and human. Technical skill involves competence in the specific type of work done in the leader’s organization, e.g., engineering or manufacturing. Conceptual skill comprises the ability to work with ideas, as in the case of creating vision. Human skills comprise knowledge and abilities surrounding working with people, adapting ideas to those of others, supporting followers, and building relationships that encourage others to participate in planning and execution.

Finally, transformational leadership theories have received considerable attention in recent years, with Antonakis, Fenley, and Liechti (2012) finding that the number of research studies on the topic is growing at an increasing rate across many disciplines.

Northouse (2016) describes transformational leadership as “a process that changes and transforms people” (p. 161), and involves exceptional influence that causes followers to accomplish things beyond usual expectations. In seminal work, Burns (1978) defined transformational leaders as “people who tap the motives of followers in order to reach the goals of leaders and followers” (p. 18).

According to Avolio and Bass (2002), transformational leaders exhibit what they term the “4 I’s:” idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence comprises behaviors that subordinates want to emulate. Inspirational motivation refers to behaviors and communication enabling followers to feel motivated and inspired. Intellectual stimulation creates innovation by encouraging
subordinates to think creatively and outside normal boundaries. Individual consideration comprises paying attention to subordinates’ needs, through open and frequent communication that leads followers to feel that interactions are personalized (Avolio & Bass).

In terms of this research, communication skills, often demonstrated through presentations, aligns well with theories focusing on leadership as a trait. For example, Zopiatus and Constanti (2012) state that individuals high in extraversion are expressive, communicate organizational goals, and gain the following of employees. Those demonstrating openness engage with others, share expectations, and encourage discussion (Zopiatus & Constanti). Those with higher levels of conscientiousness communicate to build trust between themselves and followers (Judge & Bono, 2000).

Communication and public speaking also relate to behavioral and skill-based leadership theories. Hallmarks of person-focused behaviors are consideration and empowerment. Consideration emphasizes maintaining close social relationships among subordinates, facilitation of group cohesion, and creating an atmosphere of trust (Burke et al., 2006). Empowerment behaviors are actions focusing on developing self-management and self-leadership skills among subordinates (Pearce et al., 2003), through communication, coaching, monitoring, and feedback (Burke et al.).

Finally, communication plays a role in transformational leadership. Burns (1978) noted that the leader-follower relationship can also take the form of transformative leadership, as a leader communicates with others, “engaging them in a manner that results in both leader and followers achieving higher levels of motivation and morality” (p. 68). Hofmann and Jones (2005) add that transformational leaders communicate clear visions to build trust and
motivation among their subordinates. Finally, Avolio and Bass (2002) state that transformative leadership involves subordinate communication that is frequent, personal, and inspirational.

The context. Research focusing on the leader assumes that leadership is caused by the leader. However, the results of this approach do not offer guidance as to what comprises quality leadership in differing situations. Leadership through context, sometimes called contingency leadership, explores how the environment in which one leads affects leadership.

According to Osborn and Marion (2009), leadership research is entering a new era with its focus on the importance of organizational context. Scholars are observing that leaders adapt their leadership styles depending on a variety of factors in the environment, including task structure and needs of followers, and that there is not only one trait or behavior, or set of traits and behaviors, that is right for a leader in all conditions. As Porter and McLaughlin (2006) state, “leadership in organizations does not take place in a vacuum. It takes place in organizational contexts” (p. 559). Zigarmi, Lyles, and Fowler (2007) further this idea, calling contextual leadership “the consideration of who, what, where, and when you lead” (p. 12).

Fiedler’s contingency theory (1967), Hershey and Blanchard’s (1982) situational leadership model, and Vroom & Yetton’s model (Vroom & Yago, 2007) further stress the importance of leaders adjusting their styles as environmental needs change.

The followers. Trait, behavioral, skills-based, and transformational approaches to leadership focus on the leader, and leadership through context concentrates on the environment in which leadership takes place. A growing stream of research places more focus on the idea that leadership also depends on the people whom the leader leads, those who “receive guidance from the ones in charge and, in return, provide them with energetic and proactive support”
(Ramazzina, 2017, p. 70). For example, Gardner et al. (2010), consider leadership to be co-created between leaders and their followers.

Research by Burns (1978) linked the roles of leadership and followership, reinforcing this leader-follower relationship in defining leadership as “leaders inducing followers to strive for goals that represent the wants and needs of both leaders and followers” (p.18). Later, Bennis (2003) posited that leaders and followers are always taking part in a collaboration. Along these same lines, Moss and Ritossa (2007) addressed the idea of idealized influence, which they describe as the degree to which leaders are seen as role models who inspire their followers to take action. Similarly, Athalye (2009) stated that leaders with good idealized influencing behaviors end up being trusted and respected by followers.

An example of followership comes into play in leader-member exchange theory, developed by Graen and Uhl-Bien in 1995, which conceptualizes leadership as a process centered on the interactions between leaders and followers (Northouse, 2016), in which relationships form and change with each interaction (Rothausen & Christenson, 2014).

Followership was key to this study, as any form of followership requires a leader to engage in ongoing communication with employees, whether one-to-one or through presentations to larger groups. In leader-member exchange theory, for example, Northouse (2016) states that “communication is the vehicle through which leaders and followers create, nurture, and sustain useful exchanges” (p. 146). With this in mind, the desire and ability to form relationships requires skills which can be hampered by communication anxieties, including public speaking anxiety.
Perceived Leadership

As stated earlier, leaders cannot be successful without followers, and it is often followers that grant leadership status. Individuals must not only claim the identity of a leader, but others must also see them as leaders in order to be influenced by them (Buengeler, Homan, & Voelpel, 2016).

Regardless of the lens through which one frames leadership – leader, context, or follower, or the theory one uses – trait, behavior, skill, leader-member exchange, transformational, or many others, the power of leaders is largely dependent on how others perceive them (Maurer & Lord, 1991). Without followers, one cannot be a leader, except perhaps of self. Being perceived as a leader can increase commitment among followers and create positive affect among employees (Pfeffer, 1977). Positive perceptions help leaders accentuate their important characteristics to manage their public impressions, and, being seen as having leadership potential can play a major role in hiring (Foti, Fraser, & Lord, 1982).

Schacter (2011) defines perception as “the organization, identification, and interpretation of sensory information in order to represent and understand the presented information, or the environment” (p. 23). As Fairhurst and Connaughton (2014) state, “similar to the notion of leaders requiring followers, the success of formal leaders is very much dependent upon the perceptions, attitudes, and experiences of [those who] can complement, supplement, or undermine the work of individuals formally vested with leadership responsibilities” (p. 11). Miner and Dachler (1973) further state that most definitions of leadership have perception inherent in them, and that those perceptions are enhanced by social skills including communication, influence, and relationship-building.
An important facet of perceived leadership is impression management, a concept first conceptualized by Goffman (1959) as “a conscious process in which people attempt to influence the perceptions of other people about a person, object, or event” (p. 24). The term is often considered synonymous with self-presentation, in which a person works to influence the perception of their image. Self-presentation conveys information about oneself to others, with a goal of creating alignment with one’s own self-image and/or to match an audience’s expectations (Goffman).

For a new leader, one of the most challenging career situations involves entering an organization as a newcomer (Kangas, 2013), using impression management skills to create the perception that one is a leader among others in the organization (Arneson, 2005). To encourage such leadership perceptions, a new leader must build interpersonal links within the organization (Bridges, 2003). The relationships new leaders build within their first year will, to a great extent, determine how successful they will be in their new role (Gabarro, 2007).

Additionally, the relationships between leaders and their subordinates are crucial in creating perceptions of leadership on the part of the followers, and have an important influence on the overall well-being of the organization and its climate (Graen & Uhl-Bien, 1995). Leadership through followership, described earlier in this document, focuses on leader-subordinate relationships that are created based on mutual interaction, with the perceptions of the followers playing a crucial role in the process of a new leader assuming managerial authority (Kangas, 2013). Andiappan and Trevino (2010) suggest that leader-subordinate relationships develop fairly quickly and remain relatively stable over time, so that creating positive leadership perception should be a high priority for a new leader.
Perceived leadership at this early stage is often seen as being influenced by traits and behaviors (Bauer & Green, 1996). Communication and interaction, whether informal or through more formal means such as delivering presentations, offer opportunities to create positive perceptions (Bauer & Green). For example, as described earlier in this review, extraversion, referring to the qualities of energy, assertiveness, and sociability/talkativeness, is a trait that relates to impression management and perceived leadership (Atkinson et al., 2000).

In terms of leadership as behavior and skill, Barge (1994) posits that communication skills best explain leadership in general. Leaders create early perceived leadership by articulating visions and speaking with confidence and enthusiasm about them. Such communication can involve many channels (Barge), including delivering presentations to groups of subordinates.

Creating leadership perception through communication is also a crucial element of transformational leadership, as transformative leaders most often use information-rich, face-to-face channels to communicate with followers, creating perceptions that are positively associated with employee satisfaction (Northouse, 2016).

Finally, considering the effects of public speaking and presenting on perceived leadership, Rowh (2009) found that people who speak well are generally perceived as intelligent and confident, and that successful speakers are often perceived as leaders.

**Sex and perceived leadership.** It is an accepted fact that while women are no less effective in leadership positions, and are as committed and motivated as men, leadership has been "predominantly a male prerogative in corporate, political, military, and other sectors" (Eagly & Karau, 2002, p. 573). Women hold proportionately fewer leadership positions than do their male counterparts (Northouse, 2016). As an example, as of 2007, women occupy
approximately 40% of managerial positions in the U.S., but only 6% of the top executives in Fortune 500 companies are female, and only 15% of the seats on boards of directors are held by women (Eagly & Carli, 2007). Also as of 2007, women comprised only 13% of U.S. senators, 14% of congressional representatives, and 10% of state governors (Eagly & Carli). Women earn approximately 47% all law degrees and make up 45% of law associates, yet only about 20% are partners in their firms (American Bar Association, 2013). As to MBA programs, the focus of this study, women comprise about one-third of graduates from MBA programs at the top ten U.S. business schools (Catalyst, 2014), but their representation at top executive levels in American businesses is much smaller than men’s (Northouse, 2016).

Why this phenomenon exists is a well-studied topic, and a meta-analysis by Eagly and Carli (2003) suggests that many of the reasons arise from perceptions of the qualities of female leaders, resulting in prejudice. This is one underlying cause of the paucity of women in many leadership positions. Such prejudice includes a perception that women possess less agency – the capacity, condition, or state of acting or of exerting power (Agency, 2018) – and lack the archetypal male qualities such as confidence, aggressiveness, and self-direction that are associated with leadership. Instead, women are perceived to have a greater focus on communal values such as acting in the best interests of the organization more than themselves, considering the viewpoints of others, and showing empathy, sensitivity, openness, and cooperation (Eagly & Carli, 2007; Martin, 2015). Women further face a double standard when they are expected to demonstrate masculine traits in leadership, yet are not well-received when they do exhibit them (Martin).

Perception is of utmost importance to much existing research on sex and leadership, and many psychologists hold that perception’s primary purpose is to guide action (Gaulin &
McBurney, 2003), in this case in hiring and promotion decisions. But some research suggests that the perception that women possess qualities less valued in leadership is not true. For example, a study of leadership styles of 385 managers across three different organizations found little or no differences in the behaviors of female and male leaders. Rather, context played a greater role than mere gender in such behaviors, that is, women are not yoked by a set of traits but able to adjust their leadership styles to fit any type of organizational need (Andersen & Hansson, 2001).

Pertinent to this study, with MBA students as its research population, is the fact that the professional world is beginning to be dominated by individuals born in the early 1980s, commonly known as the millennial generation. Studies on this generational cohort within the workplace are proliferating (e.g., Anderson, Baur, Griffith, & Buckley, 2017; Costello & Westover, 2016; Holmberg-Wright, Hribar, & Tsegai, 2017). Research narrowing in on the topic of perceived leadership, however, is still in the emergent stage, and with different points of view.

Differing values and beliefs among generational cohorts are thought to influence how members of each generation perceive leadership. According to a study by Sessa, Kabacoff, Deal, and Brown (2007), millennials want leaders who care about them as people, citing terms including encouraging, listening, and supporting. As another example, Zemke, Raines, and Filipczak (1999) reported that millennials like collective action, and place value on a leader's ability to pull people together in seeking goals. To the extent that these study results are borne out, perceived leadership in others could be shifting toward qualities traditionally characterized as feminine. More research needs to be done in this area, however.
Most germane to this research is a finding by Kelan and Jones (2010). In a qualitative study of MBA students, interviewees claimed that sex/gender issues in their programs often did not matter, and had little relevance within the MBA context. However, given the potential differences between espoused values and values-in-action, often referred to as behavioral integrity (Simons, 2002), opinions given in interviews may not be borne out in actual practice. As an example, research by Berkery, Tiernan, and Morley (2014) found that within business education programs, research to date has recorded consistent patterns of male students sex typing managerial roles in favor of men. Further, an older three-part longitudinal study (Powell, Butterfield, & Parent, 2002) reported that MBA students described an effective leader in terms of masculine qualities; however, the preferences for such qualities abated over the course of the study.

Age and perceived leadership. Age diversity is increasing in organizations (Rudolph, 2015), and although much less studied than the influence of sex n leadership (Walter & Scheibe, 2013), numerous studies (e.g., DeRue & Ashford, 2010; Hirschfeld & Thomas, 2011; Kearney, 2008) affirm the notion that age does play a role in one’s ability to be perceived as a leader. Walter and Scheibe (2013) call for additional research in this area, as demographic characteristics including age are easily accessible and quickly convey status-relevant information (see also Ridgeway, 2003).

An earlier study by Slotterback (1996) demonstrated that younger adults view older adults differently from the way they view people of their own age. Younger leaders cannot rely on extensive experience, as can their older counterparts (Nishii & Mayer, 2009), and can be seen as lacking the classic characteristics of leadership that their elders have (Junker & van...
Dick, 2014). Thus, they may struggle in persuading their team members to accept their leadership position (Buengeler et al., 2016).

Rather than focusing on perception of leadership and leadership potential, most existing studies concentrate more on how different age groups prefer to be led. For example, according to Martin (2015), older workers are more likely to value formal relationships and a directive style of leadership, while younger workers are more likely to prefer collective action.

The relationship is not that simple, however. Hirschfeld and Thomas (2011) discuss perceived leadership potential from the perspective of sex and age bias. The status characteristics associated with age, and also sex, may be culturally formed, and automatically associated with levels of status in society at large, that is, people view these variables in the workplace in the same manner as they do in the general world (see also Buengeler et al., 2016; Eagly & Carli, 2007; Powell & Graves, 2003).

Further, while greater age can be seen favorably given its association with more experience and a larger knowledge base, older individuals can also be seen as behind the times, uncomfortable with change, and having lower adaptive capacity, thus having less promise as future leaders (Hirschfeld & Thomas, 2011; Martin, 2015). While younger leaders may lack the experience and knowledge their older counterparts have, their relative youth can be seen as a cleaner canvas on which to place future leadership development (Martin).

Hirschfeld and Thomas (2011) also maintain that the idea of generalized status awarded by age is less relevant than that for role-congruence. Put another way, perception of the importance of age varies by the role one is to play in the organization. For example, the accumulated knowledge of a person of greater age may be desirable in more traditional
industries, while the innovative, risk-taking qualities associated with youth may be more embraced in emergent sectors such as technology.

Also, leadership style and behaviors are shown to be related to leadership effectiveness (Buengeler et al., 2016), and some leadership behaviors are only effective when employed by older leaders (Kearney, 2008). A contingent reward style, using rewards to motivate employees to meet identified goals, can be a more successful method for younger leaders to employ with subordinates. Styles such as transformational leadership, engaging with others to create connections that motivate them to reach their highest potential (Northouse, 2016), has been shown to be less effective, as young leaders may be perceived as not earning the right to use such behaviors (Buengeler et al., 2016)

Communication, Public Speaking, Leadership Perception, and Leadership

This final section brings together the constructs reviewed above. Regardless of which modern theoretical foundation one chooses in exploring leadership and public speaking anxiety, communication plays a central role for leadership, with high incidences of communicative leadership behaviors occurring in everyday work life (Tourish & Hargie, 2009). This was understood as far back as the early 20th century, with Barnard (1938) stating that “the first function of an executive is to develop and maintain a system of communication” (p. 226).

Recently, a number of scholarly efforts have been made to demonstrate how and why leadership and communication, with public speaking as a subset, are closely connected. Ruben and Gigliotti (2017) recognize communication to be an indispensable condition of leadership. Fairhurst and Connaughton (2014) consider leadership to be a communicative process that extends beyond the classic roles of a leader, and that opportunities for leadership and
leadership perception are found in all interactions within groups and organizations, extending across all levels and units. Recent scholarship even suggests that leadership itself is co-constructed by leaders and followers through communication (Barge & Fairhurst, 2008).

According to Hackman and Johnson (2013), leadership can be considered a special form of communication, creating perceptions of who one is, how one acts, what one does, and how one works with others. They define leadership as a “human (symbolic) communication that modifies the attitudes and behaviors of others in order to meet shared group goals and needs” (p. 11).

A survey study by Bodie (2010) reported that communication acumen was at the top of the list of skills for business success, with personnel managers indicating that both oral and written communication skills were the most valuable skills a graduating business student can have or acquire. Research by Hefferin (1997) also underscores the fact that communication skills are among those most relevant to companies’ hiring decisions. Further, studies by Bolt and Hagermann (2009) found that human resource executives included strong communication skills among the top three characteristics they consider when developing perceptions of leadership potential in job applicants.

Good verbal communication skills were also cited by employers as crucial qualities they found lacking in job applicants. Further, many companies have expressed concern that many organizational leaders lack effective communication skills (Quintanilla & Mallard, 2008). Clearly, companies are calling for graduates with strong skills in communication, and the general lack of them within hiring pools presents a competitive opportunity for leadership-seeking students and professionals with these skills.
Included in communication acumen, public speaking has also been found to be a crucial skill in the workplace. Bodie (2010) states that making presentations is very often a necessary part of work responsibilities. A 2015 study of business school alumni by Marcel (2015) demonstrated that approximately 28% present weekly in their current positions, and 37% present at least monthly. Further, as Parvis (2001) states, almost every profession requires public speaking, which is “an asset a professional individual must acquire and share with others” (p. 23). In a study by Robles (2012), 100% of executives surveyed listed communication skills such as public speaking acumen as extremely important. In another survey by Stevens (2005), 104 Silicon Valley employers listed oral and public speaking skills at the top of the skill sets they seek in job applicants.

Finally, according to Rowh (2009), public speaking abilities can advance one’s career, and successful speakers are often perceived as leaders. On the other hand, Cunningham, Lefkoe, and Sechrest (2006) cite lack of public speaking skills as a primary reason individuals are unable to advance in their careers.

Chapter Summary

This chapter introduced the two main variables under study: public speaking anxiety and perceived leadership. Public speaking anxiety (PSA) involves an individual’s negative emotions and behaviors in response to real or anticipated oral presentations. PSA is the most common social phobia experienced by humans, with a large majority of people reporting moderate to high levels of it. The phenomenon is displayed in numerous physiological, cognitive, and behavioral responses. Determinants and remedies were further discussed.

Leadership, a crucial part of effectiveness in many jobs, is shown to be a much sought-after skill by employers. The term has many definitions which have evolved over the years.
Leadership can be understood by looking through three frames: the leader, the context in which leadership takes place, and those who follow. With the focus on the leader, leadership can be seen as caused by an enduring trait or characteristics of a given leader, a set of behaviors the leader displays, and/or a set of skills and behaviors that can be learned.

An important element of leadership is the perception of the leader’s followers, who respond to various cues in assessing the value of a leader. A leader often uses impression management techniques, including communication and presentation skills, to create positive impressions among followers. Sex and age have also been shown to affect perceived leadership on the part of one’s followers.

The following chapter provides a research framework addressing these items as they relate to this study.
Chapter 3

Methodology

The preceding literature review highlighted topics of interest regarding public speaking anxiety and perceived leadership, outlining issues and describing numerous facets of each. These form the basis of this research. This chapter provides specific details regarding the study itself: overall framework, variables under study, population and recruitment, data collection and analysis, and research hypotheses. Finally, an explanation of ethical principles followed in the study is provided.

Research Framework

The central theme of this research concerned relationships between public speaking anxiety, defined as anxiety over giving oral presentations, and perceived leadership, defined as the degree to which followers perceive leadership qualities and potential in a given individual.

The study used a survey/quantitative methodology to discover and explore these relationships. Such a method focuses on gathering and analyzing concrete data to explain a particular phenomenon. Quantitative research emphasizes the use of mathematical and statistical analyses of objective measurements and data obtained through surveys and questionnaires, or by manipulating existing statistical data using mathematical techniques (Muijs, 2010).

In terms of social sciences, quantitative methods focus on measuring variables in the social world. Payne and Payne (2004) further this idea in stating that

Quantitative methods seek regularities in human lives, by separating the social world into empirical components called variables which can be represented numerically as frequencies or rates, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement. (p. 180)
The main characteristics of quantitative research include (a) data are gathered using structured instruments, (b) the study can generally be replicated, and (c) the researcher has clearly defined research questions (Babbie, 2010). The final aim is to “classify features, count them, and construct statistical models in an attempt to explain what is observed” (Babbie, p. 27).

Because this research sought insights into specific variables, including trait PSA, state PSA and resulting perception of leadership, a quantitative research design was appropriate.

Variables

Nine variables formed the base of data for this study: (1) trait PSA scores, representing PSA considered relatively enduring; (2 through 6) state PSA scores, representing anxiety levels prior to five presentations; (7) perceived leadership, a score representing whether peers perceive the individual to be a leader; (8) sex; and (9) age. Approximately 6500 unique data points were collected.

Population

The population for this study comprised MBA students in a full-time, cohort-based MBA program at a mid-sized university in the midwest United States. The final research group was comprised of 151 students. Eighty-seven (57.6%) were male, 64 (42.4%) were female. These percentages resemble the sex distribution within the 415 MBA programs in the Association to Advance Collegiate Schools of Business (AACSB), of which 61.7% are male and 38.3% are female (2017).

The mean age for participants was 27.8, with a standard deviation of 4.3 and range of 22-48. The mean age for males was 27.9, with a standard deviation of 4.1 and range of 22-40. The mean age for females was 27.7, with a standard deviation of 4.3 and range of 22-48.
While age distribution is not tracked by the AACSB, Vincia Prep (2014) reported that applicants to MBA programs at an assortment of schools averaged between 27 and 28 years of age.

One hundred sixty-two students originally enrolled in the study. Nine enrollees were later eliminated because they did not complete one or more of the required indicators. Two enrollees changed their minds and decided not to participate.

**Recruitment**

All students in the above-mentioned MBA program were eligible to participate in this research, or to decline to do so. At the beginning of the study, they received a statement that this study involved public speaking anxiety as it related to them personally, as well as perceived leadership among their peers. They also received a consent form explaining that participation was voluntary, that they could discontinue their involvement at any time, that there was no compensation for participating, and that their participation would have no effect on their present or future relationship with the university, including its faculty and staff. Finally, they were made aware that all information collected would be confidential, and that any names furnished on indicators would be replaced by respondent codes by a third-party data entry professional, who signed a confidentiality agreement, before data was seen by the researcher.

**Data Collection**

Data for this study were collected through seven assessment instruments in online and paper formats, each discussed in more detail in the next section. To measure trait PSA, students completed the Personal Report of Public Speaking Anxiety (PRPSA). To measure state PSA at various time intervals, students completed a one-question indicator, shown in
Appendix B, prior to each of five presentations. To measure leadership potential as perceived by peers, a voting distribution from all student cohort members was used.

Indicators in the PSA portion of the study used self-reporting. McCroskey (1977b) reports that self-report devices are a preferred approach to obtaining data when the subject knows the answer and is willing to tell the truth, as opposed to wanting to convey a socially desirable image. Given that participants were assured that all information they provided was strictly confidential, with no possibility of anyone other than the third-party data entry person being able to connect any data with participant identities, it was assumed that resulting data comprised honest self-assessments by participants.

**Assessment Instrument: Trait Public Speaking Anxiety**

To measure trait-based public speaking anxiety, that portion of anxiety considered relatively constant across differing public speaking situations, participants completed the Personal Report of Public Speaking Anxiety (PRPSA), one of the discipline’s standard measures of PSA (Hunter, Westwick, & Haleta, 2014). Designed by McCroskey (1970), the PRPSA “is used to measure trait anxiety [as opposed to state anxiety] and includes a variety of anxiety stimuli specific to public speaking environments” (Smith & Frymier, 2006, p. 118). See Appendix A for a copy of this instrument.

The PRPSA is a unidimensional, 34-item self-report measure of PSA that generates high reliability estimates, with Cronbach’s alpha (α) >.90 and 10-day test-retest reliability of .84 (Bodie, 2010). The questionnaire uses a Likert scale, calling for respondents to indicate the degree to which they agree with various statements about their general reactions toward public speaking, such as “while preparing for a speech, I feel tense and nervous” and “my heart beats very fast just as I start a speech.” They respond to the statements with a number between 1 and
5, with 1 indicating “strongly disagree” and 5 indicating “strongly agree.” The resulting score is between 34 and 170, with higher scores indicating greater levels of anxiety.

According to Richmond and McCroskey (1998), normalized PSA scores fall into five categories (numbers in parentheses represent percentages of a normalized population fitting into each category). Scores of 34-84 indicate low anxiety (5%); 85-92 indicate moderately low anxiety (5%); 93-110 indicate moderate anxiety (20%); 111-119 indicate moderately high anxiety (30%); and 120-170 indicate high anxiety (40%).

The indicator was completed online, using Qualtrics software (Qualtrics, LLC, Provo, UT), a commonly-used survey instrument. This survey also included demographic variables of sex and age.

**Assessment Instrument: State Public Speaking Anxiety**

To measure state-based public speaking anxiety, the element of PSA considered unique to a given speaking situation, students completed a simple written form prior to five presentations, indicating the level of anxiety and nervousness they were experiencing in the period immediately prior to the upcoming presentation. On the form, they indicated a number between 1 and 10, with 1 representing “least nervous” and 10 representing “most nervous.” See Appendix B for a copy of this instrument.

The first state PSA indicator was completed prior to a presentation given during the MBA program’s orientation in late August. This presentation culminates a group project, analyzing a business phenomenon and making recommendations to an imaginary group of corporate executives as played by program faculty and staff members. The second, third, fourth, and fifth indicators were given prior to presentations in four MBA courses over a period
of seven months: in an organizational behavior course in November, marketing in December, finance in March, and applied business research in May.

**Assessment Instrument: Perceived Leadership**

To ascertain perceived leadership, it was assumed that the MBA students in this study will, at some time in the future, be in positions to hire future leaders, thus their perception of leadership among cohort peers is important. In addition, their perception of each other's leadership potential is important in and of itself, given that many jobs are found through networking and personal relationships in the professional realm.

A feature of the full-time MBA program at this university is the use of a computer-based business simulation known as LINKS. In the simulation, which begins in their first semester and continues through the final semester in their program, teams of students compete against each other in operating simulated companies. In the portion of the simulation relevant to this study, students vote from among their entire cohort on the individuals whom they perceive as the best and most potentially-successful leaders for these teams, who then act as Chief Executive Officers (CEOs) for the companies/teams for the next phase of the simulation. CEOs then recruit cohort members as employees for their companies.

The leadership skills required of the CEO bear close resemblance to those mentioned in the literature review: providing overall leadership to their team, creating and sustaining relationships, motivating performance, and delivering reports and presentations, in this case an outline of results to a mock board of directors.

Knowing that they will eventually be on a team led by the CEO who recruits them, and that their course grades are affected by the outcome of the simulation, students are highly motivated to vote for the CEOs they perceive as having the greatest leadership strengths. Thus,
their votes serve as good indicators of perceived leadership. The usefulness of these data is underscored by the fact that they are submitted annually by the MBA program to the Association to Advance Collegiate Schools of Business (AACSB), an accrediting organization providing quality assurance to business schools, as evidence of leadership potential.

The number of votes each individual casts is equal to the number of companies created. For example, creating ten companies requires students to choose ten colleagues whom they see as potential leaders. This has the benefit of allowing participants to select a number of peers whom they perceive as leaders, providing richer data for analysis than if they each selected only one. The total number of CEO votes received for each student by their peers was used in this study.

**Data Analysis Plan**

Numerous statistics, defined by Dodge (2006) as the collection, organization, analysis, interpretation, and presentation of data, were used in analyzing the quantitative data collected in the seven surveys in this research (trait PSA, state PSA at each of five formal presentations, and perceived leadership). They included descriptive statistics, univariate analysis, bivariate analysis, measures of dependence, and linear, multiple, and hierarchical regression. Each analysis and statistic is described in general below, followed by the fifteen research hypotheses and how they were used for each.

Descriptive statistics provide simple summaries about a population and the observations that have been made (Trochim, 2006). Such summaries can be purely quantitative, known as summary statistics, or visual, in the form of charts and graphs. They can form the basis of the initial description of the data for use in further statistical calculations, or may be sufficient on their own for a particular investigation (Trochim). Data can be used in
univariate analysis to describe the distribution of a single variable such as mean, median, and mode, and can also be used to describe variable dispersion, including range, variance, and standard deviation (Trochim).

Descriptive statistics can also be used in bivariate analyses to describe relationships between two variables under study, for the purpose of determining the empirical relationship between them (Babbie, 2010). In this study, such analyses addressed relationships such as those between trait PSA and perceived leadership, and state PSA and perceived leadership.

Measures of dependence, which can include correlations and cross-tabulations, refer to the extent to which two variables have a linear relationship with each other (Babbie, 2010). For purposes of this study, a cross tabulation displayed and analyzed data across all variables: trait PSA, state PSA measured across five presentations to ascertain potential PSA reduction at graduated intervals, perceived leadership, sex, and age.

Linear regression analysis is widely used for prediction and forecasting (Freedman, 2005). It can be used to understand which among the independent variables (e.g., state PSA at various intervals) are related to the dependent variable, and to explore the forms of these relationships.

Multiple regression is an extension of simple linear regression. It is used to predict the value of a variable based on the value of two or more independent variables (Babbie, 2010). In this case, multiple regression was used to predict how PSA, with inclusion of other data such as sex and/or age, predicted perceived leadership.

Hierarchical regression takes linear and multiple regression a step further, by sequentially including additional variables or sets of variables in each step, to potentially increase the variance explained in the dependent variable.
Hypotheses

Fifteen hypotheses, addressing public speaking anxiety, perceived leadership, and potential moderating factors, formed the framework for this study. Descriptions of the hypotheses follow.

The following abbreviations for variables are used below:

- **PSAT** = trait PSA measurement from the Personal Report of Public Speaking Anxiety.
- **PSAS_a** = state PSA measurement from a specific self-report indicator given prior to a particular presentation, with “a” denoting which presentation is involved. For example, **PSAS_1** indicates the first presentation delivered by the participants, which is the presentation given at the end of orientation at the beginning of the program’s first year.
- **PSAS** = average of state PSA measurements from all five self-report indicators.
- **PLEAD** = perceived leadership, as measured by the voting survey described earlier.
- **SEX** = sex of respondent. **SEX_0** = male, **SEX_1** = female.
- **AGE** = age of respondent.

For each hypothesis listed in the research framework section of this document, a description of the method of analysis is given below. A confidence level of \( p < .05 \) was used as a benchmark of statistical significance in evaluating each hypothesis.

**Relationship of PSA to leadership perception by peers.** As stated earlier, trait PSA is a relatively enduring personality characteristic which causes people to feel anxiety in any public speaking situation, while state PSA describes a level of public speaking anxiety which is dependent on the context of a given presentation situation. The relation of each type of PSA to perceived leadership formed the first two hypotheses in this study:

**H1:** Trait PSA is related to perceived leadership.
Hypothesis 1 was tested via Pearson bivariate correlation of PSATR (independent variable) and PLEAD (dependent variable).

H2: State PSA is related to perceived leadership.
Hypothesis 2 was tested via Pearson bivariate correlation of PSAS results (independent variable) for each presentation, as well as overall PSAS (independent variable), with PLEAD (dependent variable).

Most thinking conceptualizes PSA as both a trait and a state, with the two components interacting (Bodie, 2010). While H1 and H2 separately test the relationships between trait PSA and perceived leadership, and state PSA and perceived leadership, combining them could yield a stronger relationship than either of them alone. This was addressed in the following three hypotheses:

H3a: Trait PSA and state PSA together are more strongly related to perceived leadership than trait PSA alone.
Hypothesis 3a was tested via hierarchical regression analysis of PLEAD (dependent variable) on PSATR and PSAS1-5 (independent variables).

H3b: Trait PSA and state PSA together are more strongly related to perceived leadership than state PSA alone.
Hypothesis 3b was tested via hierarchical regression analysis of PLEAD (dependent variable) on PSAS1-5 and PSATR (independent variables).

H4: Improvement in state PSA over time will explain significant additional variance in perceived leadership beyond that explained by trait PSA.
Hypothesis 4 was tested by hierarchical regression analysis of PLEAD (dependent variable) on PSATR and the difference score (PSAS1 - PSAS5) (independent variables).

**Relationship between trait and state PSA.** A potential relationship between the two variables formed the next hypothesis:

H5: Trait PSA is related to state PSA.
Hypothesis 5 was tested via Pearson bivariate correlations of PSATR and PSASa.

As mentioned in the literature review, numerous strategies exist to help individuals reduce anxiety surrounding public speaking. This study used the techniques of skill acquisition
and repeated exposure to anxiety-producing stimuli, described in the previous chapter, as students delivered five formal presentations at various time intervals during the academic year. Those presentations were given at the end of orientation in the students’ first year of the MBA program, as well as in their core courses in organizational behavior, marketing, finance, and applied business research. All presentations required research for their assigned topics, i.e., students did not present on topics with which they were already familiar. Audience sizes varied from approximately 25 to 75 people. Audiences for three presentations included all students in the cohort, plus program faculty and staff members, and sometimes professionals from outside the university. Two presentations included only fellow students and two to three faculty members.

The communication course at the base of this research, described in the introductory chapter, also included extemporaneous speeches. Taken together, students gave 15 presentations in their first year in the program: five formal and planned, ten informal and extemporaneous. These formed the basis of the use of the public speaking anxiety-reducing techniques of skill acquisition and exposure to anxiety-producing stimuli, as students continued to give, and receive feedback on, presentations throughout the year. The efficacy of this approach led to the following hypothesis:

H6: State PSA decreases over time, as students complete successive presentations. Hypothesis 6 was tested via one-way analysis of variance (ANOVA).

How much reduction in PSA the average student achieves is also of interest. Under an assumption that students who begin the year with higher PSA will receive more benefits from these techniques than will those who already experience low to moderate PSA, the following hypothesis was created:
H7: State PSA decreases less over time for those with lower trait PSA. Hypothesis 7 was tested via Pearson bivariate correlation of the difference score (PSAS₅ – PSAS₁) and PSATR.

**Sex and public speaking anxiety.** It is possible that the effective reduction of PSA is a greater concern for female students than for males, as research has shown small but salient differences in PSA between females and males (McCroskey et al., 1982). If this is true, the PSA reduction strategies in this study could have differential effects based on sex. With the following research hypotheses, the relationship between PSA and sex was examined for this population, and the possibility of women receiving more benefit from skill acquisition and exposure followed.

H8a: Women have higher trait PSA than men. Hypothesis 8a was tested via examination of the point biserial correlation between the means of PSATR and SEX, and one-way analysis of variance (ANOVA) of those means.

H8b: Women have higher state PSA than men. Hypothesis 8b was tested via examination of the point biserial correlations among means SPSA₁-₅, overall PSAS, and SEX, and one-way analysis of variance (ANOVA) of those means.

H9: Women show more improvement in state PSA than do men. Hypothesis 9 was tested by a one-tailed two population t-test of significance analyzing the difference score (PSAS₅-PSAS₁) for women and men.

**Sex and perceived leadership.** Turning to perceived leadership (PLEAD), as stated in the literature review, it is an accepted fact that while women are no less effective in leadership positions, and are as committed and motivated as men, they hold proportionately fewer leadership positions than do men (Northouse, 2016). The next hypotheses explored this subject:

H10: Perceived leadership in general is higher for men. Hypothesis 10 was tested by analysis of variance (ANOVA) of the means of PLEAD for females and males.
H11: The relationship between trait PSA and later perceived leadership is stronger for men than for women. Hypothesis 11 was tested by hierarchical regression analysis of PLEAD (dependent variable) on PSATR (independent variable) in step 1, and the interaction term (PSATR*SEX) (independent variable) in step 2.

H12: The relationship between state PSA and later perceived leadership is stronger for men than for women. Hypothesis 12 was tested by hierarchical regression analysis of PLEAD (dependent variable) on (PSAS$_5$-PSAS$_1$) and SEX (independent variables) in step 1, and (PSAS$_5$-PSAS$_1$)*SEX (independent variable) in step 2.

**Age and perceived leadership.** While psychologists agree that perceived age is an important contributor to how people generally perceive others, theorists have not shown much interest in issues regarding age and leadership (Zacher, Rosing, & Frese, 2011). As an opening for dialog, these hypotheses are stated:

H13: The relationship between perceived leadership and age is stronger for older students. Hypothesis 13 was tested via point biserial correlation of PLEAD (dependent variable) and AGE (independent variable).

H14: The relationship between trait PSA and later perceived leadership is stronger for younger students. Hypothesis 14 was tested by hierarchical regression analysis of PLEAD on PSATR in step 1, and the interaction term (PSATR*AGE) in step 2.

**Ethics and Confidentiality**

Following is a summary of the steps that were taken to carry out this research with ethical principles in mind. As mentioned in the previous section, respondents received consent forms prior to their participation, which stated that all data would be held in strictest confidence. An independent, paid data entry person, who signed a confidentiality agreement (shown in Appendix C), was hired to append respondent codes to student names and enter data from them into Microsoft Excel spreadsheets. Survey forms were kept in a locked drawer in
the researcher’s office. They will be retained for future research, until such a time when they are determined to be no longer useful, at which time they will be destroyed.

Summary data, comprising respondent codes and survey item responses, were entered into Microsoft Excel and SPSS (a statistics software package) spreadsheets, and were kept in password-protected files on the researcher’s computer. Only the researcher and his dissertation chair had access to these files. These data, which do not show any participant names, have been retained for future research.

Finally, the research plan was submitted to the University of St. Thomas Institutional Review Board, and all regulations and resulting comments from the board were strictly adhered to.

**Chapter Summary**

This chapter outlined the major variables measured in this research, the hypotheses surrounding various relationships among public speaking anxiety, sex, and age as they relate to perceived leadership, and the ethical practices adhered to in this study. The next chapter reports the results of the study.
Chapter 4

Results

This chapter describes the results of tests of each hypothesis listed in the previous chapter, following the methodologies described there and reviewed below. An initial summary of statistical findings is reported, followed by examinations of each research hypothesis in numerical order.

Before proceeding to hypothesis testing, data was checked for consistency with assumptions of regression analysis. For analyses using regression techniques, assumptions needed to be met. These included the presence of linear relationships, multivariate normality, and no or little multicollinearity. Linear relationships were confirmed via examination of relevant scatterplots, as shown in Appendix D, which demonstrated reasonably linear relationships among the primary relationships tested. Multivariate normality was confirmed by examination of histograms of all independent variables, each demonstrating varied but reasonable levels of normal distribution.

Multicollinearity was expected for the different measures of PSA. Intercorrelations, along with means and standard deviations, for all variables in this study are reported in Table 1. Examination of Table 1 indicates that PSA measures are intercorrelated (further discussed below) as expected. When performing multiple hypothesis testing on the same dependent variable (in this case, perceived leadership), the chance of committing a Type I error (accepting the hypothesis when it is, in fact, not true) can increase when independent variables are related. Various methods can be used to reduce the potential occurrence of Type I errors, for example a Bonferroni correction. In this research, hierarchical regression was used, which tests for the
ability of each interrelated variable to explain additional variance in the dependent variable after the shared variance is accounted for.

Table 1

Study 1 Sample Means, Standard Deviations, and Intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<td>2. Age</td>
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<td></td>
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</tr>
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<td></td>
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</tr>
<tr>
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<td>.84**</td>
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<td></td>
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<td></td>
</tr>
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<td>.68**</td>
<td>.73**</td>
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<td>8. State PSA AVERAGE</td>
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<td>.07</td>
<td>.87**</td>
<td>.92**</td>
<td>.94**</td>
<td>.89**</td>
<td>.79**</td>
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<td></td>
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<td>22.8</td>
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<td>.71**</td>
<td>.65**</td>
<td>.60**</td>
<td>.51**</td>
<td>.42**</td>
<td>.67**</td>
<td></td>
</tr>
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<td>2.67</td>
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<td>.00</td>
<td>.06</td>
<td>-.67**</td>
<td>-.58**</td>
<td>-.57**</td>
<td>-.52**</td>
<td>-.40**</td>
<td>-.63**</td>
<td>-.72**</td>
</tr>
</tbody>
</table>

Note. N=151. ** p < .01; * p < .05.

Means, standard deviations, and intercorrelations for age, sex, trait PSA, state PSAs at presentations 1 through 5, average state PSA across all presentations, and perceived leadership were examined. They are reported in Table 1. For relationships between continuous variables, Pearson bivariate correlations (denoted as r) were used. For relationships between a
dichotomous variable, in this case sex, and a continuous variable, point biserial correlations (denoted as \( r_{pb} \)) were used. All correlations ranged from .00 to .72. Twenty-nine correlations were above .21, significant at \( p < .01 \), and four were between .16 and .21, significant at \( p < .05 \). Twelve correlations were not significant.

Examination of Table 1, using point biserial correlation, reveals that sex was correlated with four of the five state PSA measurements at \( p < .01 \), but not with trait PSA and state PSA at presentation 2. However, both trait PSA and state PSA at presentation 2 approached significance at \( p = .096 \) and \( p = .07 \), respectively. At \( r_{pb} = .00 \), sex was not correlated with perceived leadership, however. Examination of Table 1 also shows that age was not significantly correlated with any PSA measures, however some Pearson correlations approached significance at \( .05 < p < .10 \). Therefore, age and sex were entered first, as control variables, into all ensuing regression analyses for hypothesis testing. Correlations between sex and PSA will be further discussed later in this chapter.

Mean state PSA measurements, taken prior to the five presentations described earlier in this document, decreased steadily with each presentation given, from 6.3 at presentation 1 to 3.9 at presentation 5, as expected. Table 1 also reveals that though all PSAs are related to perceived leadership, trait PSA (\( r = -.72 \)) seems to be more related than is average state PSA (\( r = -.63 \)).

PSA scores are correlated with each other, but of the 16 independent correlations between the five state PSA measures with each other and with trait PSA, only three are highly correlated (\( r > .8 \)), suggesting that they are not interchangeable with each other. The state PSA measurements generally correlate more closely with other state PSA measurements closer in time; for example, the Pearson correlation between state PSA at presentation 1 and
presentation 2 is .84, between presentations 1 and 3 is .76, between presentations 1 and 4 is .64, and between presentations 1 and 5 is .54. This pattern is as expected.

Trait PSA correlates with perceived leadership at r=-.72. State PSA, measured at each of the five presentations, correlates with perceived leadership in all instances, ranging from r=-.67 to r=.40, all significant at p < .01. Correlations decrease with each successive presentation. Sex and age are not correlated with perceived leadership at statistically significant levels. Age does approach significance at p < .10. As stated above, sex and age were controlled for in all hypothesis tests.

Trait PSA, as measured by the Personal Report of Public Speaking Anxiety (PRPSA), was examined for internal consistency using Cronbach’s alpha. The result was α = .96, well within the reliable range, and in line with other PRPSA research demonstrating α > .90 (e.g., McCroskey, 1970; Pribyl, Keaten, & Sakamoto, 2001).

The remainder of this chapter tests hypotheses developed in the previous chapter. Analyses are addressed in the order of hypothesis numbers.

**Hypothesis 1**

Hypothesis 1 states that trait PSA is related to perceived leadership. This hypothesis was tested by examining the Pearson correlation between trait PSA and perceived leadership scores presented in Table 1. This correlation of r=-.72 suggests that trait PSA is correlated negatively with perceived leadership (i.e., higher trait PSA levels correlate with lower perceived leadership levels). The correlation was statistically significant at p < .01. These results support hypothesis 1.
Hypothesis 2

Hypothesis 2 states that state PSA is related to perceived leadership. This hypothesis was tested by examining the Pearson correlations between each of five state PSA measurements, with perceived leadership, shown in Table 1. Each correlation was both statistically and substantively significant at $p < .05$. The mean state PSA level at presentation 1, measured prior to the formal presentation at the beginning of the program in late August, was 6.3 on a 10-point scale, correlating with perceived leadership at $r = -0.67$, $p < .01$. The mean state PSA level at presentation 2, measured in November prior to the second formal presentation in the program, was 5.4, a decrease of .09 from presentation 1 and correlating with perceived leadership at $r = -0.58$, $p < .01$. State PSA measurements taken prior to the third, fourth, and fifth formal presentations in December, March, and May, demonstrated mean levels of $r = 5.1$, $r = 4.1$, and $r = 3.9$, respectively, with correlations with perceived leadership of $r = -0.57$, $r = -0.52$, and $r = -0.40$, all at $p < .01$. Of note is the finding that mean state PSA levels decreased with each successive presentation, from 6.3 to 3.9, for a total decrease of 2.4.

Finally, average state PSA level was calculated by averaging the mean state PSA levels from each of the five presentation measurements, resulting in a level of 4.9. This correlated with perceived leadership at $r = -0.63$, significant at $p < .01$. All of these results support hypothesis 2.
Hypothesis 3a

Hypothesis 3a states that trait PSA and state PSA, when combined, are more strongly related to perceived leadership than is trait PSA by itself. This hypothesis was tested using a three-step hierarchical regression analysis. In step 1, the control variables sex and age were regressed on the dependent variable perceived leadership. Because the researcher wanted to test whether PSA had an impact on perceived leadership independent of its impact through sex and age, these were entered first in order to separate out any such relatedness. Note that this step is also used in later analyses.

In step 2 of the hierarchical regression, trait PSA was added to the regression, and in step 3, the five state PSA measurements were added. As mentioned above, state and trait PSAs are intercorrelated. Hierarchical regression allows testing of whether each of these adds explanation of perceived leadership, controlling for the other. The five state PSAs are also intercorrelated. Because they are entered together, the results will only suggest whether as a whole, state PSA has an impact, but cannot differentiate among the five measures of state PSA. The resulting three regression models are reported in Table 2.
Table 2

*Hierarchical Regressions of PSAs on Perceived Leadership to Test State PSA*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
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<tr>
<td></td>
<td>β</td>
<td>Δ R²</td>
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</tr>
<tr>
<td>Constant</td>
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<td>Sex</td>
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<tr>
<td>Age</td>
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<td>.05</td>
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<tr>
<td>Trait PSA</td>
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<td>-.09***</td>
<td>-.06***</td>
</tr>
<tr>
<td>State PSA PRESENTATION 1</td>
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</tr>
<tr>
<td>State PSA PRESENTATION 2</td>
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<td>State PSA PRESENTATION 3</td>
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<tr>
<td>Adjusted R²</td>
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<td>.52</td>
<td>.58</td>
</tr>
</tbody>
</table>

Note. N=151. *** p < .001; ** p < .01; * p < .05.

Model 1, entering only the control variables sex and age, did not explain any statistically significant levels of variance (p = .75), as expected. Model 2, adding trait PSA scores to the regression, explained 52% of the variance, significant at p < .001. Model 3, adding the five state PSA measurements, explained an additional 7% of variance, also significant at p < .001. In the final equation, the beta coefficients for trait PSA and state PSA for presentation 1 are significant, as expected. As noted above, because the five state PSAs are intercorrelated, it is only the overall impact of state PSA, after controlling for trait PSA, that is being tested in this analysis.
Because the state PSAs are intercorrelated, an additional test of this hypothesis, a similar hierarchical regression, was run, but substituting average state PSA for the five individual state PSA measurements at step 2, and entering both trait and state PSA numbers in the same step of the equation at step 3. Results are presented in Table 3. (Note that Model 3 in Table 3 will also be discussed in the sections on hypotheses 3b and 11, below.)

Table 3

Hierarchical Regressions of PSAs on Perceived Leadership with Average State PSA and Including PSA Interaction with Sex

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th>Model 2</th>
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<th></th>
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<th>Model 3</th>
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<tr>
<td>Trait PSA</td>
<td>-</td>
<td>-</td>
<td>.07***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.07***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.07***</td>
<td>-</td>
<td>.07***</td>
</tr>
<tr>
<td>State PSA AVERAGE</td>
<td>-.58***</td>
<td></td>
<td>-.58***</td>
<td></td>
<td>-.60**</td>
<td></td>
<td></td>
<td>.58***</td>
<td>.58***</td>
<td>.58***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Sex *</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
<td>-.07***</td>
<td></td>
<td></td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait PSA Interaction</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td>-.07***</td>
<td></td>
<td></td>
<td>.04</td>
<td>.04</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State PSA AVERAGE Interaction</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td>.00</td>
<td></td>
<td></td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F                      | .30     | 50.15*** |       |       | 33.11*** |       |       |       |       |       |       |       |       |
Total R²                | .00     | .58   | .58   | .58   | .00     | .58   | .58   | .58   | .00     | .58     | .58   | .58   | .58   |
Adjusted R²             | - .01   | .57   | .57   | .57   | - .01   | .57   | .57   | .57   | - .01   | .57     | .57   | .57   | .57   |

Note. N=151. *** p < .001; ** p < .01; * p < .05.
Examination of Table 3 shows that when entered into the equation together in Model 2, both trait PSA and average state PSA significantly predicted perceived leadership at p < .001, once again indicating that each type of PSA contributes to perceived leadership. This additional analysis confirms the conclusion of support for hypothesis 3a.

**Hypothesis 3b**

While hypothesis 3a stated that trait and state PSA, taken together, were more strongly related to perceived leadership than trait PSA alone, hypothesis 3b states that trait PSA and state PSA together are more strongly related to perceived leadership than state PSA alone. This hypothesis was tested using hierarchical regression analysis of perceived leadership on age and sex in Model 1 (again controlling for these variables), the five state PSA measurements in Model 2, and trait PSA in Model 3. Results are reported in Table 4 below.
Table 4

*Hierarchical Regressions of PSAs on Perceived Leadership to Test Trait PSA*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Constant</td>
<td>1.46</td>
<td>7.21***</td>
<td>10.88***</td>
</tr>
<tr>
<td>Sex</td>
<td>.02</td>
<td>.84*</td>
<td>.87**</td>
</tr>
<tr>
<td>Age</td>
<td>.04</td>
<td>.06</td>
<td>.05</td>
</tr>
<tr>
<td>State PSA PRESENTATION 1</td>
<td>-</td>
<td>-</td>
<td>-.86***</td>
</tr>
<tr>
<td>State PSA PRESENTATION 2</td>
<td>-.13</td>
<td>-</td>
<td>-.08</td>
</tr>
<tr>
<td>State PSA PRESENTATION 3</td>
<td>-.30</td>
<td>-</td>
<td>-.29</td>
</tr>
<tr>
<td>State PSA PRESENTATION 4</td>
<td>-.02</td>
<td>-</td>
<td>-.03</td>
</tr>
<tr>
<td>State PSA PRESENTATION 5</td>
<td>-</td>
<td>-</td>
<td>.48***</td>
</tr>
<tr>
<td>Trait PSA</td>
<td>-</td>
<td>-</td>
<td>-.06***</td>
</tr>
<tr>
<td>F</td>
<td>.30</td>
<td>19.12***</td>
<td>26.54***</td>
</tr>
<tr>
<td>Total R$^2$</td>
<td>.00</td>
<td>.48</td>
<td>.60</td>
</tr>
<tr>
<td>Adjusted R$^2$</td>
<td>- .01</td>
<td>.46</td>
<td>.58</td>
</tr>
</tbody>
</table>

*p = .001; ** p = .01; * p = .05.

Examination of Table 4 reveals that Model 2, entering the five state PSA measurements, explains an additional 48% of variance over Model 1, and that this change is significant at $p < .001$. Model 3, adding trait PSA after controlling for state PSA, explained an additional 12% of variance, also significant at $p < .001$. These results support hypothesis 3b.
Results reported in Table 3 from the previous section, used for hypothesis 3a, also relate to hypothesis 3b in that when entered into the equation together in step 2, both trait PSA and average state PSA significantly predict perceived leadership, indicating that each type of PSA contributes to it, also supporting hypothesis 3b.

**Hypothesis 4**

Hypothesis 4 states that improvement in state PSA over time will explain significant additional variance in perceived leadership beyond that explained by trait PSA. This hypothesis was tested using hierarchical regression analysis of perceived leadership on age and sex in Model 1, trait PSA in Model 2, and the difference score between state PSA at presentation 1 and state PSA at presentation 5 in Model 3. Results are reported in Table 5.
Table 5

Hierarchical Regressions of PSAs on Perceived Leadership to Test State PSA Improvement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>Δ R²</td>
<td>β</td>
<td>Δ R²</td>
<td>β</td>
<td>Δ R²</td>
</tr>
<tr>
<td>Constant</td>
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<td>11.54***</td>
<td>11.55***</td>
<td></td>
<td></td>
<td></td>
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<td>.02</td>
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<td>.56</td>
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<td>Age</td>
<td>.04</td>
<td>.03</td>
<td>.02</td>
<td>.00</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Trait PSA</td>
<td>-</td>
<td>.09***</td>
<td></td>
<td>-</td>
<td>.09***</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.52***</td>
</tr>
<tr>
<td>Difference: State PSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.18</td>
<td>.01</td>
</tr>
<tr>
<td>vs. State PSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final equation F</td>
<td>.30</td>
<td>54.47***</td>
<td></td>
<td>41.97***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total R²</td>
<td>.00</td>
<td>.53</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>-.01</td>
<td>.52</td>
<td>.52</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=151. *** p < .001; ** p < .01; * p < .05.

Examination of Table 5 reveals that adding the difference score between state PSA at presentation 1 and presentation 5, after controlling for trait PSA, did not explain significant additional variance. In addition, as noted above, the relationships between trait PSA and perceived leadership as reported in Table 1 decrease between presentation 1 and presentation 5. These results do not support hypothesis 4.
**Hypothesis 5**

Hypothesis 5 states that trait PSA is related to state PSA. This hypothesis was tested by examining the correlations between trait PSA and the five measures of state PSA from Table 1, repeated in Table 6 below.

**Table 6**

*Correlations Between Trait PSA and State PSA at Five Time Intervals*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trait PSA</td>
<td>105.4</td>
<td>22.8</td>
<td>-</td>
</tr>
<tr>
<td>2. State PSA PRESENTATION 1</td>
<td>6.3</td>
<td>2.0</td>
<td>.71</td>
</tr>
<tr>
<td>3. State PSA PRESENTATION 2</td>
<td>5.4</td>
<td>1.9</td>
<td>.65</td>
</tr>
<tr>
<td>4. State PSA PRESENTATION 3</td>
<td>5.1</td>
<td>1.9</td>
<td>.60</td>
</tr>
<tr>
<td>5. State PSA PRESENTATION 4</td>
<td>4.1</td>
<td>1.7</td>
<td>.51</td>
</tr>
<tr>
<td>6. State PSA PRESENTATION 5</td>
<td>3.9</td>
<td>1.5</td>
<td>.42</td>
</tr>
</tbody>
</table>

*Note. N=151. Correlations above .21 are significant at p < .01.*

These correlations were both statistically and substantively significant at p < .001, such that trait PSA was correlated positively with state PSA at each time, although the correlation decreased over time from .71 at presentation 1 to .42 at presentation 5. These results support hypothesis 5.
Hypothesis 6

Hypothesis 6 states that state PSA decreases over time, as students complete successive presentations. As shown in Table 7 below, mean state PSA levels decreased relatively steadily from 6.3 at presentation 1 to 3.9 at presentation 5. To ascertain whether the differences among these means were statistically significant, a one-way ANOVA test was performed, followed by a post hoc test with a Tukey statistic.

Table 7

ANOVA of Mean Differences of State Public Speaking Anxiety Levels at 5 Measurement Times

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State PSA</td>
<td>6.3</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRESENTATION 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. State PSA</td>
<td>5.4</td>
<td>.19</td>
<td>.90***</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PRESENTATION 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. State PSA</td>
<td>5.1</td>
<td>.19</td>
<td>1.16***</td>
<td>.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRESENTATION 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. State PSA</td>
<td>4.1</td>
<td>1.7</td>
<td>2.23***</td>
<td>1.33***</td>
<td>1.06***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRESENTATION 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. State PSA</td>
<td>3.9</td>
<td>1.5</td>
<td>2.40***</td>
<td>1.50***</td>
<td>1.24***</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td>PRESENTATION 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>593.24</td>
<td>4</td>
<td>148.31</td>
<td>46.15</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Note. N=151. *** p < .001; ** p < .01; * p < .05.

Of ten pairs of means, all differences were significant at p < .001 except presentations 2 and 3 (p = .71), and presentations 4 and 5 (p=.92). It appears some presentations closer together in time were not different at a statistically significant level. However, the overall
pattern holds quite strongly. The overall pattern between group mean variance shows significance at $p < .001$. These results generally support hypothesis 6.

**Hypothesis 7**

Hypothesis 7 states that state PSA decreases less over time for those with lower trait PSA. This hypothesis was examined by correlating trait PSA and the differences between state PSA at presentation 1 and state PSA at presentation 5 (2.4). The Pearson correlation between trait PSA and state PSA at presentations 1 through 5 was $r = .46$, which was significant at $p < .01$. This result supports hypothesis 7.

**Hypothesis 8a**

Hypothesis 8a states that women have higher trait PSA than do men. This hypothesis was tested by examining the point biserial correlation between trait PSA and sex in Table 1. Mean trait PSA for women was 109.1 and for men was 102.8. Examination of Table 1, however, reveals that the correlation between trait PSA and sex is $r_{pb} = .14$, $p = .096$, not significant at $p < .05$. The correlation does approach significance, however, at $p < .10$. A one-tailed t-test corroborated this finding, showing no significance at $p = .11$. These results do not support hypothesis 8a.

**Hypothesis 8b**

Hypothesis 8b states that women have higher state PSA than men. This hypothesis was tested by examining the point biserial correlations between state PSA at presentations 1-5 and sex in Table 1. As reported for hypothesis 6, an ANOVA test demonstrated that the differences between the five state PSA means are significant. Examination of these five correlations in Table 1 reveals that all except presentation 2 were significant at $p < .05$. $r_{pb}[sex, PSA_{PRESENTATION 1}] = .17$, $p = .04$; $r_{pb}[sex, PSA_{PRESENTATION 2}] = .15$, $p = .07$; $r_{pb}[sex, PSA_{PRESENTATION 3}] = .18$, $p = .03$;
Hypothesis 8b

Hypothesis 8b states that the relationship between trait PSA and later perceived leadership is stronger for men than for women. This hypothesis was tested using hierarchical regression analysis of perceived leadership on age and sex in step 1, trait PSA and r_{pb}[sex, PSA_{PRESENTATION 4}]=.20, p=.02; r_{pb}[sex, PSA_{PRESENTATION 5}]=.26, p=.00. Presentation 2 approaches significance at p < .10. These results are generally supportive of hypothesis 8b. In addition, average state PSA is correlated with sex at .21, p=.01, further supporting the hypothesis. Overall, these results support hypothesis 8b.

Hypothesis 9

Hypothesis 9 states that women show more improvement in state PSA than do men. This hypothesis was tested through point biserial correlation of the difference scores between state PSA at presentation 1 and 5 with sex. For women, the mean resulting difference score was 2.35 and for men was 2.43. The correlation coefficient for this relationship is r_{pb}=.02 (p = .79), indicating that this correlation was not significant. To corroborate these results, a one-tailed, two-population t-test was performed on the mean difference scores. The result also showed no significant difference in the means, at p = .92. These results do not support hypothesis 9.

Hypothesis 10

Hypothesis 10 states that perceived leadership in general is higher for men. This hypothesis was tested by examining the point biserial correlation between perceived leadership and sex in Table 1. For men, the mean perceived leadership measurement was 2.64, and for women was 2.66. At r_{pb}=.00, p=.97, this correlation was not significant. A t-test corroborated this result at p=.97. These results do not support hypothesis 10.

Hypothesis 11-12

Hypotheses 11 and 12 are alternative hypothesis pairs. Therefore, they are tested using the same analysis. Hypothesis 11 states that the relationship between trait PSA and later perceived leadership is stronger for men than for women. This hypothesis was tested using hierarchical regression analysis of perceived leadership on age and sex in step 1, trait PSA and
average state PSA in step 2, and the interactions between sex and trait PSA, and between sex and average state PSA. Results are reported as Model 3 in Table 3 earlier in this chapter.

Adding the interactions with sex does not add to explained variance, \( p < .001 \). Hypothesis 12 states that the relationship between state PSA and later perceived leadership is stronger for women than for men. This hypothesis also used the hierarchical regression analysis in Table 3. Again, step 3 does not add to explained variance. These results do not support hypotheses 11 and 12.

**Hypotheses 13-14**

Hypotheses 13 and 14 are alternative hypothesis pairs. Therefore, they are tested using the same analysis. Hypothesis 13 states that perceived leadership is higher for older students. This hypothesis was tested by examining the bivariate correlation between perceived leadership and age, reported in Table 1 as \( r = .06 \), \( p = .44 \). This correlation was not significant.

Hypothesis 14 states that the relationship between trait PSA and later perceived leadership is stronger for younger students. This hypothesis was also tested by examining the bivariate correlation used to test the alternative hypothesis 13. At \( r = .06 \), \( p = .44 \), this correlation was not significant. These results do not support hypotheses 13 and 14.

**Chapter Summary**

This chapter described the results testing for all hypotheses developed in the previous chapter. The following hypotheses were supported:

H1: Trait PSA is related to perceived leadership.

H2: State PSA is related to perceived leadership.

H3a: Trait PSA and state PSA together are more strongly related to perceived leadership than trait PSA alone.
H3b: Trait PSA and state PSA together are more strongly related to perceived leadership than state PSA alone.

H5: Trait PSA is related to state PSA.

H6: State PSA decreases over time, as students complete successive presentations.

H7: State PSA decreases less over time for those with lower trait PSA.

H8b: Women have higher state PSA than men.

The following hypotheses were not supported:

H4: Improvement in state PSA over time will explain significant additional variance in perceived leadership beyond that explained by trait PSA.

H8a: Women have higher trait PSA than men.

H9: Women show more improvement in state PSA than men.

H10: Perceived leadership in general is higher for men.

H11: The relationship between trait PSA and later perceived leadership is stronger for men than for women.

H12: The relationship between state PSA and later perceived leadership is stronger for men than for women.

H13: Perceived leadership is higher for older students.

H14: The relationship between trait PSA and later perceived leadership is stronger for younger students.
Chapter 5:
Conclusions, Implications, and Recommendations

This study contributes to two fields: communication and leadership. While both are well-studied in their respective literatures, this research opens a new and important avenue of exploration, uniting two concepts previously unaddressed together: public speaking anxiety, and its relationship with one's propensity to be perceived as a leader by others. This chapter summarizes findings from the study, discusses conclusions, implications, and limitations, and makes recommendations for education, practice, and future research.

The author, a graduate school instructor teaching a required course on public speaking to MBA students, was curious about a phenomenon witnessed over fifteen years. Public speaking anxiety (PSA) exists at varying levels for more than 70% of the population (McCroskey, 2009), causing considerable problems for many who suffer from it. While ample evidence (e.g., Bodie, 2010; Finn et al., 2009; Richmond et al., 2013) suggests that techniques to reduce PSA can be effective, many do not use them. Instead, they choose to maintain a state of learned helplessness, the condition suggested by Seligman (1975) as behaving helplessly even though there are opportunities to improve one’s situation. In this case, learned helplessness can comprise avoiding giving presentations to the greatest extent possible, and avoiding college and post-graduate courses requiring them (Bodie, 2010). This is especially surprising given the emphasis in the program on the relationship between presenting and speaking well and outcomes such as being seen as a leader, performance in internship and job interviews, and longer-term career progression and success.

Leadership development is integrated into the aforementioned program in several ways, including this oral communication course. Yet, there is little research in either the
communication or leadership literatures that explores the relationships between anxiety over presenting and leadership. However, anecdotally, there was evidence of a strong link.

In the aforementioned course, two interventions to reduce PSA exist as part of the course design, and two others are optional. The course itself uses two strategies: skills training and repeated exposure. Skills training is a behavioral intervention that considers PSA to be a result primarily of skill deficit (Hopf & Ayres, 1992). The intervention used in this course provides in-class instruction and instructor modeling, covering such skills as eye contact, movement, and audience rapport-building, with a goal of building self-efficacy by reducing the ambiguity of public speaking situations.

Repeated exposure therapy, first described by Barlow in 1984, seeks to reduce anxiety by bringing a person into contact with the anxiety-producing event, such as the act of public speaking. Using this intervention in the aforementioned course, students give fifteen presentations, varying between formal and extemporaneous in design, over the course of the school year.

The two optional interventions comprise personal coaching self-modeling. Coaching involves individual meetings with the instructor to talk about a student's speaking anxiety and develop strategies for reducing it. Self-modeling involves reviewing video recordings of past presentations, identifying strengths and areas for improvement. Only a small percentage of students take advantage of these two optional growth opportunities. Put another way, most students employ the PSA reduction strategies required in the course, but do not go beyond.

Anecdotal evidence, through conversations and course evaluations, suggests that these interventions are effective, and many students report that reducing their PSA also generated positive effects beyond just speaking, comfort in job interviewing being one example.
As described in the literature review, the professional world is calling for leadership skills, and the post-graduate education field has responded by including leader development courses in their curricula. In fact, according to Doh (2003), a large majority of the top 50 business schools in the U.S., as defined by *U.S. News & World Report* (2002), offer leadership coursework in some form.

While students want to be seen as having leadership potential by prospective employers, and seem to find the two required PSA reduction interventions to be helpful, they do not take advantage of additional opportunities to ameliorate their public speaking anxiety beyond those offered in the course, which can be a major detractor from that perception. Business schools, at least at the graduate level, are generally not requiring presentation skills training in their leadership development criteria.

These observations from practice motivated this study. If a relationship could be shown between public speaking anxiety and leadership, two things might happen. First, leadership-seeking students might be motivated to work on this destructive effect on their perceived leadership potential. Second, post-graduate programs could offer, and even require, interventions such as the skill-building and exposure found in communication and presentation skills courses, rather than offering them as electives.

Public speaking anxiety (PSA) has both trait and state elements. Trait PSA is a relatively enduring personality characteristic in which people feel anxiety in any public speaking situation (McCroskey, 1977), while state PSA is dependent on the context of a given presentation situation, such as the makeup of the audience and/or difficulty of the material (Booth-Butterfield & Booth-Butterfield, 2004).

This study explored four general research questions through testing 16 hypotheses:
1) What relationships exist between the presence and degree of an individual’s public speaking anxiety (PSA) and propensity to be perceived as a leader?

2) Which type of PSA, trait-based or state-based, demonstrates a stronger relationship and better predicts perceived leadership?

3) Does sex/gender moderate the relationships between PSA and perceived leadership?

4) Does age moderate the relationships between PSA and perceived leadership?

To answer these questions, 151 Masters in Business Administration (MBA) students participated in the study. Each participant completed a measure of trait public speaking anxiety via completion of the 34-item, self-report Personal Report of Public Speaking Anxiety (PRPSA), a respected and commonly-used indicator created by McCroskey (1977). Each participant also completed self-report surveys before each of five formal presentations in their MBA program. Perceived leadership was measured by each participant's score from a leadership election ballot completed by all students in the program.

The main findings of the study were that (1) PSA, both trait and state, are generally related to perceived leadership; (2) trait PSA has a slightly stronger relationship with perceived leadership than does state PSA; and (3) the demographic variables of sex and age do not appear to contribute to PSA or perceived leadership in significant ways.

**Public Speaking Anxiety and Perceived Leadership**

Study results affirm McCroskey's (2009) finding that approximately 70% of individuals experience public speaking anxiety: 66.2% of the population in this study indicated via the PRPSA that they experienced moderate to high trait PSA.

The first research question posed in this study concerned general relationships between public speaking anxiety and perceived leadership. All PSA indicators, both trait and state,
demonstrated strong relationships. Trait PSA, for example, showed a Pearson correlation of $r = -.72$, $p < .01$ (i.e., higher PSA correlated with lower perceived leadership). State PSA at five presentation intervals showed correlations of $r = -.67$, $r = -.58$, $r = -.57$, $r = -.52$, and $r = -.40$, respectively, all at $p < .01$. Average state PSA, calculated across all five presentations, correlated with perceived leadership at $r = -.63$, $p < .01$.

Regressions were also performed to determine the strength of relationships between both trait PSA and state PSA, and perceived leadership. These regressions further reinforced the value of measuring both trait and state public speaking anxiety as predictors of perceived leadership, especially in the case of trait PSA, as the indicator was completed at the beginning of the program while perceived leadership was not measured until 12 months later. By themselves, trait PSA explained 52% of the variance in perceived leadership scores ($p < .001$), and state PSA across the five presentations explained 48% ($p < .001$). Combining trait and state PSA yielded even greater predictive value, explaining 58% of variance ($p < .001$). More information on these two variables will be presented later.

These findings imply that people wishing to be perceived as a leader would do well to analyze their levels of public speaking anxiety as a part of assessing various factors of their overall leadership acumen, and possibly take steps to reduce them.

While these findings were expected, the strength of the relationships came as a surprise. Correlation coefficients as high as $r = .67$, and variance explanations as great as 58% suggest that a third factor may be predicting both PSA and perceived leadership. In addition, however, based on all evidence, it is likely that PSA does have a direct causal relationship with perceived leadership.
This presents important opportunities for future research. Other factors, not considered for inclusion in this study, can be explored. For example, future research could measure individuals' levels of the Five Factor Model trait of emotional stability, as well as the variance in PSA explained by it, and in order to separate out the level of variance in perceived leadership explained directly by PSA separate from this, or other, common causes. This study was designed to open the door to new discussion, and it was unknown what other variables might contribute. In addition to emotional stability, for example, PSA is considered a subset of generalized communication anxiety, which in turn is a facet of overall social anxiety, and numerous indicators exist to assess them in the future. Self-efficacy and general confidence would also seem to contribute to perceived leadership, and could be also be measured and included in future research designs.

Average state PSA levels decreased with each successive presentation, from 6.3 (out of 10) at the first presentation to 3.9 at the fifth, meaning that the average student felt less nervous each time he/she gave a presentation. These findings support the value of the interventions included in the aforementioned public speaking course – skill development, repeated exposure over fifteen presentations, coaching and self-modeling – in reducing PSA. Taken together with the finding that PSA and perceived leadership are related, this speaks to the value of including a course in presentation skills in any leadership development curricula.

Earlier measures of state PSA had stronger relationships with later perceived leadership than did later measures (e.g., r=-.67 at the first presentation, r=-.40 at the last one). This is likely a first-impression bias in the followers, in which people are strongly influenced by the first piece of information they are exposed to, leading to bias in evaluating subsequent information. This could also simply be a function of the reduction in PSA itself, with
perceived leadership held constant as it was in this single-measure study. Future research could measure perceived leadership at more intervals to gain more insights into the possibility of this variable changing through the course of successive presentations.

While successive reductions in state PSA over time were expected, and the magnitude of the changes suggest that the aforementioned interventions play a role, it is important to remember that the very definition of state public speaking anxiety, as described by Booth-Butterfield and Booth-Butterfield (2004), includes the fact that any number of variables can contribute to it, and that such variables can differ from presentation to presentation and person to person. Audience size, composition and familiarity can play a role, as can the subject matter, presentation setting, and any number of other variables.

A potential limitation of this study is the fact that each formal presentation was on a different business topic, and it can be assumed that different speakers have different comfort levels across each. For example, one student may feel less proficient in quantitative topics such as finance and accounting, while another has less comfort with management and human resource topics.

A few studies have attempted to control for such individual variables that could affect state PSA, but the complex interplay among them has received little attention. Future research could expand upon this idea, and develop models that offer more assistance to those who wish to reduce their anxiety over giving presentations.

**Trait vs. State Public Speaking Anxiety**

The second research question explored which PSA measure, trait or state, better predicts perceived leadership. In this study, trait PSA showed a slightly stronger relationship to perceived leadership than did average state PSA (Pearson correlations of -.72 vs. -.63, both
Trait PSA also showed a stronger relationship than state PSA at each presentation. In the behavioral sciences, traits are considered to be relatively stable over the short term, but can and do shift at least in small amounts. Given that state PSA showed significant changes at each measurement interval in this study, it would be interesting for future research to explore whether trait PSA showed any shifts as well. Such research could reassess trait PSA levels at different time intervals to explore additional relationships with state PSA, and possibly reinforce the more lasting value of anxiety reduction interventions in the academic curricula.

**Sex, Public Speaking Anxiety, and Perceived Leadership**

The third research question in this study explored whether the demographic variable of sex moderated the relationship between public speaking anxiety and perceived leadership. While sex did show point biserial correlations with PSA measures, it did not show a direct relationship to perceived leadership. As discussed in the literature review, research by McCroskey et al. (1982) showed small but salient differences in general public speaking anxiety between women and men, with women demonstrating slightly higher PSA. Results of this study affirmed this finding, suggesting slightly higher PSA for women in the case of both trait and average state PSA, with point biserial correlation coefficients of .14 and .21, respectively. The difference in trait PSA was not significant at p < .05, but did approach significance at p < .10. The difference in average state PSA between women and men showed higher significance, at p < .05, as well as a significant difference for all but one of the five individual state PSA measurements.

Women showed a greater reduction in mean state PSA from the first presentation to the last than did men. This could suggest that women benefit slightly more from the PSA reduction techniques found in the public speaking course, but the difference was not statistically
significant in this study. Nonetheless, the general pattern, as well as the overall findings about
the strength of the impact of sex on perceived leadership, suggests further investigation is
warranted.

Although some existing research (e.g., McCroskey, 2009), as well as this study, points
to the existence of differing PSA levels between the sexes, not enough research has been
carried out to draw conclusions suggesting underlying reasons for it. Thus, no interventions
specifically tailored to women have been found. However, given the suggestion that PSA and
perceived leadership are related, and women have higher PSA, there could be value in future
research exploring this phenomenon. A possible starting point would be to examine sex-based
responses to the individual items in the Personal Report of Public Speaking Anxiety (PRPSA).
Oddly enough, while this well-researched indicator has high reliability estimates ($\alpha > .90$), no
subscales within it are found to exist. In the PRPSA, some statements address physical
responses (e.g., "I perspire just before starting a speech") and others address feelings (e.g.,
"During an important speech I experience a feeling of helplessness building up inside me"),
and correlations of these items with sex could further develop the concept of women's slightly
higher PSA, and create hypotheses and implications surrounding it.

The finding that no direct relationship existed between a person's sex and their
propensity to be perceived as a leader, could be seen as supporting Kelan and Jones' (2010)
finding that no such relationship existed in MBA programs; to quote an interviewee in the
study, "[gender] just doesn’t seem to matter that much" (p. 35). The same study suggested that
women in MBA programs did not think that gender imbalance had an effect on their own
performance.
An important thing to consider, however, is that Kelan and Jones’ study was qualitatively based, using a small number of open-ended interviews within a single MBA program. Argyris (1993) discussed the concept of espoused theory vs. theory in use, in which one might say something, possibly to promote a certain appearance, while their overt behavior suggests a different belief. Simons (2006) refers to this phenomenon as behavioral integrity. Kelan (2009) further reports on the existence of gender fatigue, one aspect of which being a reluctance to acknowledge the persistence of gender inequities, and Ely, Meyerson, and Davidson (2006) contend that discussions on diversity are often driven by fear of saying something offensive.

A vast body of research would be extremely critical of such findings regarding sex and perceived leadership, both in general (Eagly & Carli, 2007; Eagly & Karau, 2002; Northouse, 2016) and within MBA programs (Berkery et al., 2014; Powell et al., 2002). For example, as mentioned in the literature review, the study by Berkery et al. (2014) found that within business education, male students showed a consistent pattern of sex typing management roles in favor of men.

In this study, perceived leadership was measured months into the program, after additional factors could have intervened and been witnessed by participants. For example, the leadership behaviors of charisma, intellectual stimulation, and individualized consideration (Bass, 1990), non-verbal or non-presentation communication skills (Barge, 1994), and task-focused behaviors (Salas et al., 1992) could have been demonstrated by women in the ensuing months of the program, potentially muting the effect of sex alone.

Future research could delve further into this, measuring perceived leadership at both the outset and at numerous intervals in the program, while testing for any variables that could have
affected it. Also of potential interest would be an analysis of the voting behavior of the sexes, that is, were men more likely to vote for men, and women for women. This study did not explore these questions. By exploring this in future research, value could be added to our understanding of gender, communication skills, and leadership.

**Age, Public Speaking Anxiety, and Perceived Leadership**

The fourth general research question in this study explored the effect of age on perceived leadership. No relationships between age and PSA were found to be significant or useful. Age and perceived leadership were only marginally related (r=.06, ns), a finding which runs counter to general findings by Nishii and Mayer (2009) and Buengeler et al. (2016), both suggesting that age does play a significant role in persuading others to accept them as leaders.

However, this sample is attenuated on age, and so perhaps the findings were not surprising. Ages of the participants ranged from 22 to 48, were heavily concentrated around the mean of 27.7, and only 21.9% were more than 30 years old.

Future research could uncover more valuable information for MBA education by focusing on MBA program formats other than full-time, such as part-time and executive MBA programs, which often have greater age dispersion than do full-time programs (Vincia Prep, 2014).
Implications for Education

Organizations are calling for skilled leaders, and leadership is "an increasingly ubiquitous subject in business school curricula, a theme of popular business books, and a topic for academic and practitioner research" (Doh, 2003, p. 54). Parks (2005) states: "We live in a time when the hungers for leadership are strong and deep. As our world becomes more complex, diverse, and morally ambiguous, leadership training and programs abound and executive coaching has appeared on the scene" (p. 2).

Rynes, Trank, Lawson, and Ilies (2003) found that business recruiters indicate a preference for graduates who supplement functional courses, such as finance and accounting, with more behavioral, skills-based coursework, such as leadership and communication. Further, a study by Alsop (2001) demonstrated that top-ranked business schools received high ratings from recruiters for their graduates' communication skills.

At the same time, leadership development in academic institutions has come under fire and is facing an uphill battle to demonstrate legitimacy. A common complaint among students is that leadership courses, and many other behavioral science courses within the management realm, are regarded by students as marginal topics in business programs, and receive too much emphasis. Students often label them as "fuzzy wuzzy" and "a bit of a blowoff" (Rynes et al., 2003, p. 269).

A related criticism of leadership education is that it lacks practical relevance and fails to go beyond understanding and comprehension, to application and action (DeRue & Ashford, 2010; Petriglieri & Petriglieri, 2010; Rubin & Dierdorff, 2009).

At the core of this issue is an often-asked question: can leadership actually be taught and learned? Doh (2003) interviewed prominent leadership educators for insights into this
issue, and the general consensus was that while some general characteristics of leaders defy teaching, some leadership skills can, in fact, be taught, and should be included in business school curricula. Professor Jay Conger of London Business School noted that leadership skills regarding communication, including presenting ideas more persuasively and inspirationally, could indeed be taught. Professor Stephen Stumpf of Villanova University stated that leadership skills focusing on communication and inspiring are teachable.

Of note here is the reference to skills over mere knowledge. As Parks (2005) states: "educators ... have persuasively argued that human beings, and particularly adults, learn best from their own experience" (p. 7). Perhaps students' attitudes toward, and avoidance of, leadership courses is related to the fact that they spend more time on theory and not enough on application, as the general criticism of leadership education above cites. The implication here is that applicable skills, such as communication and presentation skills, could set leadership development courses apart and make them more valuable and palatable to students.

As mentioned in the literature review, many theories on leadership exist, and can be categorized as those framing leadership as being focused on the leader, the situation, or the followers. In turn, those focused on leaders conceptualize leadership as caused by traits of leaders, by a set of behaviors leaders perform, as a collection of skills leaders have, and others (Northouse, 2016). Whichever theory of leadership one chooses to ascribe to, communication, often through public speaking, plays an important role. In trait theory, founded upon the idea that there are specific attributes that a leader possesses (Northouse, 2016; Emery et al., 2013; Stewart, 2001; Yukl, 2006), traits that motivate leaders to engage with others, encourage discussion, and communicate to build trust are seen as crucial factors in leadership success.
Behavioral approaches to leadership, centering on specific leadership behaviors successfully used by leaders, are often thought to be best explained by communication skills (Barge, 1994; Wolvin & Coakley, 1991). Leadership as a set of skills, proffering the suggestion that learnable knowledge and skills contribute to success, include communication coaching, monitoring, and feedback (Burke et al., 2006). Finally, transformational leadership, briefly described as a process that changes people (Northouse, 2016), depends on communication that is frequent, personal, and inspirational (Avolio & Bass, 2002). These theoretical perspectives all reinforce the findings of this study, which demonstrated for the first time, strong empirical relationships between PSA and the extent to which one is perceived as a leader.

Doh's (2003) findings reinforce the fact that communication skills are important parts of leadership, can be taught, and have an important place in business education. To bring the benefits of communication and public speaking education to leadership development programs, increasing their legitimacy and value, business schools must not only change their program offerings, but also their attitudes toward the study and teaching of communication. While the importance of communication in one's career may receive lip service, little is actually done to arm students with applicable skills, and communication courses are relegated to the status of mere electives in curricula. An attitude that only functional courses such as finance, accounting, and marketing have value, limits the growth opportunities of students, and could even hamper them in getting quality jobs with companies that value leadership.

Another implication for graduate business programs is to require skills-based communication courses in their programs, as is done in the university in this study. Such a requirement is rare, but because students often already consider themselves to be good
communicators, the likelihood that they will choose to take a communication course on their own is unlikely.

Having stand-alone communication courses offered by non-business faculty and not integrated with business curriculum, as are found in most business programs, can reinforce the notion that they are adjunct to, rather than part of, formal business study. Thus, to add a level of legitimacy to such communication courses, they should be partnered with the functional courses of marketing, accounting, finance, and others, to demonstrate the importance of communication to all business functions. Students can create presentations specifically for those courses, and deliver them to either actual or imagined executive audiences in a format that simulates the actual workplace. This takes the communication course out of the esoteric, busy-work mindset and integrates it into the context that is the primary motivation for students in these programs.

The employment world is calling for leadership and communication skills. This study demonstrates that a public speaking course has the potential to reduce speaking anxiety, and that this has a relationship with perceived leadership. Therefore, business schools should consider communication education a competitive advantage for the institution and its programs. The market for MBA education is flooded with new entrants, particularly in the area of online learning, leading to commoditization of the MBA degree. Featuring an emphasis in communication and public speaking skills, and being able to explicitly demonstrate how they can relate to employment and growth opportunities, can set a school apart in a competitive field. The university under study, for example, actively promotes its skills-based offerings as part of its leadership development curriculum.
Implications for Students

As discussed earlier, many if not most people with higher levels of public speaking anxiety are loath to take steps to ameliorate it, assuming a position of learned helplessness by avoiding speaking opportunities and courses to the greatest extent possible. It can be assumed that students in MBA programs are looking for anything to set them apart from others in a difficult job market. Knowing that lowering their public speaking anxiety can cause them to be perceived as having greater leadership potential may provide them with the impetus they need for self-improvement in this arena. Further, in showing that courses in public speaking provide the anxiety-reducing interventions of skill-building and repeated exposure, they may feel more motivated to approach communication coursework with more seriousness.

General Limitations

The goal of this research was to open the discussion on the relationship between public speaking anxiety and perceived leadership, and its findings offer implications for leadership development in business education. Some specific limitations of the study (differing presentation topics, perceived leadership time measurement, and lack of population age dispersion) were scattered throughout this chapter, it is also important to recognize some overarching limitations that should be considered in evaluating results and designing future research. First, the study was limited to a single full-time MBA program at a university in the midwestern U.S. While the study can offer ideas for other MBA programs to consider, demographic and cultural differences can present challenges in generalizing the information to them. Second, unique characteristics of the MBA educational environment limit the applicability of the results outside of academia beyond providing ideas for discussion. Third, the relatively small population under study included most, but not all, students in the program.
Any unique characteristics of those who elected not to participate, or ceased participation before the study was completed, are not reflected in the results.

Chapter Summary

This study provides the first empirical evidence of a strong relationship between public speaking anxiety (PSA) and leadership. It demonstrates strong evidence suggesting a significant relationship between a person's level of public speaking anxiety and their propensity to be perceived as a leader by others. Of course, like all research, replication will be needed before conclusions are drawn. While existing research (e.g., Baccarani & Bonfanti, 2015; Bartholomay & Houlihan, 2016; Boohar & Seiler, 1982; Emanuel, 2005) speaks to the existence of negative downstream effects of public speaking anxiety in one's professional life, this study is the first to empirically explore these two individual constructs in quantitative research.

Both trait PSA and state PSA showed significant relationships with perceived leadership. At each of five formal presentations, state anxiety was considerably reduced. This demonstrated the notion that a course dedicated to public speaking, as in the MBA program under study, provided interventions – namely, skill-building and repeated exposure – that can add value to students' careers. Few such required courses exist in post-graduate business programs, instead being offered only as electives which, in the opinion of the researcher, are avoided by the people needing them the most. This research calls on these programs to include communication courses in their core curricula.

This recommendation is bolstered by considerable research (e.g., DeRue & Ashford, 2010; Petriglieri & Petriglieri, 2010; Rynes et al., 2003) suggesting a legitimacy problem in the teaching of leadership. While many business programs have responded to calls from the
professional world to develop leadership skills in their students, challenges to results and value have led to questions about whether leadership can be taught in the first place. Doh (2003) provides opinions from top leadership education experts suggesting that while some aspects of leadership defy teaching in classrooms, the skill portion of leadership can, in fact, be taught. Thus, since communication is a crucial part of leadership, skill-building in this area is not only possible, but important.

The variables of sex and age, and their respective relationships with public speaking anxiety, received secondary focus in this study. No significant relationship between sex and perceived leadership was found, however years of research refute this result, and closer study is demanded before such a finding can be considered of major value, in the MBA program under study or elsewhere. The same can be said of age, which demonstrated little relevance in this study, likely related to the concentration of ages found in a study of full-time MBA programs.

The main goal of this study was to introduce a new avenue of conversation and research into existing studies of communication and leadership, and many possibilities exist for further exploration. With the business world crying out for leadership skills, students seeking leadership-related roles in their careers, and MBA programs looking for points of differentiation in an increasingly competitive education market, a closer look at public speaking anxiety, and its value to perceived leadership potential, can bring benefits to many.
References


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APPENDIX A:

Personal Report of Public Speaking Anxiety (PRPSA)

**Directions:** Below are 34 statements that people sometimes make about themselves. Please indicate whether or not you believe each statement applies to you by marking whether you:

**Strongly Disagree** = 1; **Disagree** = 2; **Neutral** = 3; **Agree** = 4; **Strongly Agree** = 5.

1. While preparing for giving a speech, I feel tense and nervous.
2. I feel tense when I see the words “speech” and “public speech” on a course outline when studying.
3. My thoughts become confused and jumbled when I am giving a speech.
4. Right after giving a speech I feel that I have had a pleasant experience.
5. I get anxious when I think about a speech coming up.
6. I have no fear of giving a speech.
7. Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.
8. I look forward to giving a speech.
9. When the instructor announces a speaking assignment in class, I can feel myself getting tense.
10. My hands tremble when I am giving a speech.
11. I feel relaxed while giving a speech.
12. I enjoy preparing for a speech.
13. I am in constant fear of forgetting what I prepared to say.
14. I get anxious if someone asks me something about my topic that I don’t know.
15. I face the prospect of giving a speech with confidence.
16. I feel that I am in complete possession of myself while giving a speech.
17. My mind is clear when giving a speech.
18. I do not dread giving a speech.
19. I perspire just before starting a speech.
20. My heart beats very fast just as I start a speech.
21. I experience considerable anxiety while sitting in the room just before my speech starts.
22. Certain parts of my body feel very tense and rigid while giving a speech.
23. Realizing that only a little time remains in a speech makes me very tense and anxious.
24. While giving a speech, I know I can control my feelings of tension and stress.
25. I breathe faster just before starting a speech.
26. I feel comfortable and relaxed in the hour or so just before giving a speech.
27. I do poorer on speeches because I am anxious.
28. I feel anxious when the teacher announces the date of a speaking assignment.
29. When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.
30. During an important speech I experience a feeling of helplessness building up inside me.
31. I have trouble falling asleep the night before a speech.
32. My heart beats very fast while I present a speech.
33. I feel anxious while waiting to give my speech.
34. While giving a speech, I get so nervous I forget facts I really know.

Source:
APPENDIX B:

Measure of State Public Speaking Anxiety

NAME _________________________________________________

On a scale of 1 to 10, how nervous are you feeling about giving today’s presentation? Circle one number below:

1 2 3 4 5 6 7 8 9 10

Least ---------------------------------------------------------------- Most
Nervous                                                            Nervous
APPENDIX C:
Transcriber Confidentiality Agreement

Confidentiality Agreement for Transcription Services

CONFIDENTIALITY AGREEMENT

This Confidentiality Agreement (the “Agreement”), made effective the 20th day of September, 2017, by and between Provincetown transcription provider (“Transcriber”), and James K. Arnold, a doctoral candidate (“Arnold”).

As part of his dissertation, Arnold hires Transcriber to code data forms and transfer numerical data to summary forms. Transcriber agrees to maintain the forms and resulting summary sheets in confidence and not to disclose, distribute or disseminate them to anyone, except Arnold and his doctoral advisors.

Upon the request of Arnold, transcriber agrees immediately to return or destroy all written, machine-readable or otherwise tangible documents received or created.

TRANSCRIBER SIGNATURE:

Signature: [Signature]
Date: 9/26/17

ARNOLD SIGNATURE:

Signature: [Signature]
Date: 9/26/17
APPENDIX D:

Scatterplots

Figure 1. N=151. Correlation between sex and perceived leadership. \( r = .00, \ p = .97 \).

Figure 2. N=151. Correlation between age and perceived leadership. \( r = .06, \ p = .44 \).

Figure 3. N=151. Correlation between state PSA at presentation 1 and perceived leadership. \( r = -.67, \ p < .01 \).

Figure 4. N=151. Correlation between state PSA at presentation 2 and perceived leadership. \( r = -.58, \ p < .01 \).
Figure 5. N=151. Correlation between state PSA at presentation 3 and perceived leadership. \( r = -0.57, p < 0.01 \).

Figure 6. N=151. Correlation between state PSA at presentation 4 and perceived leadership. \( r = -0.52, p < 0.01 \).

Figure 7. N=151. Correlation between state PSA at presentation 5 and perceived leadership. \( r = -0.40, p < 0.01 \).

Figure 8. N=151. Correlation between average state PSA across all 5 presentations and perceived leadership. \( r = -0.63, p < 0.01 \).

Figure 9. N=151. Correlation between trait PSA and perceived leadership. \( r = -0.72, p < 0.01 \).
Figure 10. N=151. Scatterplot with regression line for Table 2, Model 1.
Independent variables = sex, age. F=.30, not significant (p = .75).

Figure 11. N=151. Scatterplot with regression line for Table 2, Model 2.
Independent variables = sex, age, trait PSA. F = 54.47, significant at p < .001.
Figure 12. N=151. Scatterplot with regression line for Table 2, Model 3. Independent variables = sex, age, trait PSA, state PSA at presentations 1 through 5. F=26.54, significant at p < .001.

Figure 13. N=151. Scatterplot with regression line for Table 3, Model 2. Independent variables = age, sex, trait PSA, average state PSA. F=50.15, significant at p < .001.
Figure 14. N=151. Scatterplot with regression line for Table 4, Model 2. Independent variables = sex, age, state PSA at times 1 through 5. F=19.1, significant at p < .001.

Figure 15. N=151. Scatterplot with regression line for Table 4, Model 3. Independent variables = sex, age, state PSA at times 1-5, trait PSA. F=26.5, significant at p < .001.
Figure 16. N=151. Scatterplot with regression line for Table 5, Model 2. Independent variables = age, sex, trait PSA. F=54.47 significant at p < .001.

Figure 17. N=151. Scatterplot with regression line for Table 5, Model 3. Independent variables = age, sex, trait PSA, difference between state PSA at presentations 1 and 5. F=41.97, significant at p < .001.
Figure 18. N=151. Scatterplot with regression line for Table 3, Model 3. Independent variables = age, sex, trait PSA, average state PSA from presentations 1-5, interaction sex*trait PSA, interaction sex*state PSA. $F=33.11$, significant at $p < .001$. 