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Walden University
2020

Abstract

The Effect of Self-Control and Grit on Female Leader Emergence

by

Heather Mitterer

MS, Walden University, 2016

BS, The Pennsylvania State University, 2014

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Industrial and Organizational Psychology

Walden University

August 2020

Abstract

Women account for 47% of the total workforce in the United States, but only 27% of women hold executive positions. The purpose of this study was to assess whether and to what extent a significant relationship exists between self-control and grit, as well as the effect that both have on female leader emergence within male-dominated industries of manufacturing, computer science, and engineering in the United States. The goal of this research was to show how gender stereotypes shape a woman's journey to leadership, with a focus that does not characterize women as victims of discrimination, but rather empowers women to influence existing stereotypes and develop their leadership potential through the regulation of their behavior. Role congruity, which focuses on dimensions of gender at work in society, and leadership and hierarchical goal theory, which focuses on goal paths through the use of self-control and grit, were used as theoretical frameworks to guide this study. The variables were measured using 6 reliable surveys; 164 participants completed the surveys. Linear regression and mediation analysis were conducted using bootstrapping and a Sobel test. The results determined that there was a significant relationship between self-control and leadership emergence, as well as between grit and leadership emergence. Mediation was not significant in the indirect effect of self-control and leadership emergence when controlling for grit (Path B). This study provided information on two positive behaviors that have not previously been studied within male-dominated work environments. Women may apply these findings to support their own success, rather than hoping that an organizational environment will improve or change to allow for their emergence into leadership.

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Dedication

I dedicate this dissertation to my amazing husband, Dennis. You encouraged me to never give up on my personal and professional goals, and I am so honored to have you by my side. Thank you for your unwavering love and support throughout this journey. I also dedicate this work to two of my closest friends, Christy and Lori, who continually asked for updates and took an interest in helping troubleshoot through roadblocks in the dissertation process. Your input, feedback, and cheerleading were instrumental in pushing me forward. Also, I dedicate this work to Emily, one of my newest friends and coworkers, who has encouraged me through the defense process. The sky is the limit for the three of you. You are amazing ladies. Keep pursuing your dreams, educational aspirations, and career goals. Thank you for your friendship, support, and love!

To my coworkers, the organizational environments that led to my inspiration for this research, and my fellow leaders/managers who inspired me to investigate this theory, thank you for the lessons you provided and the support that many of you showed. With challenges, we can either allow them to drive us forward or hold us back. Thank you for the lessons and experiences, for they drove me forward to start research in this area.

Lastly, this research is dedicated in honor and respect to all the young women seeking to break into leadership. My hope is that this work will offer an understanding of unconscious bias, the double bind you may be experiencing, and offer a positive way to traverse the situation. I believe in you! Go be incredible female leaders, and don't forget to help other women you work with be amazing too!!!

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First and foremost, I am thankful to have had the opportunity to walk this path. All glory goes to God for His abundant favor and the grace and confidence provided to complete this journey. I would like to extend an enormous amount of gratitude to my committee chair, Dr. Marlon Sukal. You had incredible faith in me, and I appreciate your guidance and hours of hard work to provide feedback on this research. Thank you also to Dr. James Herndon, for your excitement to be part of my committee and your ongoing support and feedback throughout the process. I appreciate that you both shared your time and expertise to walk beside me through this process. I am honored that you agreed to work with me and am forever thankful. This experience was much more enjoyable by sharing it with those who traveled with me, for I have walked with some amazingly talented scholars.

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Chapter 1: Introduction to the Study

Male-dominated organizational environments influence female leadership emergence, resulting in the modern-day deficit of women in the top leadership echelons of organizations. Even though women make up nearly half of the workforce in the United States and have been successful in obtaining supervisory or middle management positions, they have not progressed to senior levels of leadership at the same rate as males (Gipson, Pfaff, Mendelsohn, Catenacci, & Burke, 2017). In many cases, their advancement has stalled completely (Berdahl, Cooper, Glick, Livingston, & Williams, 2018). Data from the 144 countries that participated in the latest World Economic Forum Global Gender Gap Report indicate that at the current rate, it will take 170 years to reach gender equality globally (Bullough, Moore, & Kalafatoglu, 2017). A gap in research remains concerning why women have progressed so slowly toward obtaining top management positions within organizations and what they can do to impact this deficit (Madsen & Scribner, 2017).

One popular way to address this issue is to focus on the factors that contribute to this deficit and seek ways to reduce it (Gipson et al., 2017). Research focusing on bias and blatant discrimination has been conducted to explain the leadership gap (Gipson et al., 2017). However, this narrow view does not explain all of the factors that contribute to these leadership slights. There are many categories of behaviors, organizational characteristics, and beliefs that factor into the reasons why women do not ascend to senior leadership roles. Behaviors such as those reflecting conscious and unconscious biases; organizational characteristics such as male dominance, decreased networking

opportunities, and lack of mentorship; and beliefs such as those involving gender roles or stereotypes influence decisions regarding women reaching leadership positions.

Various theories can explain some of the variables that lead to limiting women's ascension. Role congruity theory is pertinent to female leadership, in that it outlines the two dimensions of gender at work in society and leadership: the female communal role and the male agentic role (Ferguson, 2018). When there is incongruity between the female gender role and leadership roles, prejudice and lack of fit perception can result (Ferguson, 2018). Additionally, the context of leadership in the organizational environment matters. When leadership better aligns with a stereotypical male role than a stereotypical female role, a lack of fit is perceived, and women may experience more barriers to positive evaluations and advancement (Ferguson, 2018). These perceptions can be unconscious and difficult to identify or correct.

Women leaders are very aware of a need to shape who they are, manage impressions, and negotiate their identity in the workplace (Meister, Sinclair, & Jehn, 2017). The phrase *double bind* describes the struggle that people deal with when forced to balance gender role expectations, the impressions and beliefs of others, and leadership role expectations (Ely, Ibarra, & Kolb, 2011). When women do not assimilate as expected, the potential for bias exists. When biases are unrecognized and permitted to continue within the workplace and within society, women may struggle to achieve advancement opportunities, due to unconscious trappings of a double bind (Ely et al., 2011).

In male-dominated work environments, this bias can lead to a masculinity contest that divides the workplace into winners and losers based on conformance with gender norms and the perception of what it takes to succeed in that environment as a leader (Berdahl et al., 2018). Women are less likely to emerge as leaders when environments and tasks are gender based and group directed (Bear, Cushenbery, London, & Sherman, 2017). When a qualified individual emerges as leader-like, is recognized by peers as having leadership status, and displays leadership effectiveness within the environment, this is referred to as *leadership emergence* (Paunova, 2015). However, despite fitting these requirements, women are judged as competent leaders using additional criteria that are subjective and based on factors that cannot be quantifiable.

Background of the Problem

The U.S. Bureau of Labor Statistics (2018b) reported that women account for 47% of the total workforce in the United States but only 27% of women hold executive positions. Forty-three percent of women in the workforce have achieved a bachelor's degree or higher yet only receive 82% of the pay that men receive for the same labor (U.S. Bureau of Labor Statistics, 2018a). Not only do women earn lower wages, but they also lack autonomy and authority when compared to male leaders. According to Fleming (2015); McCaughey, McGhan, Savage, Landry, and Brooks (2017); Walsh, Fleming, and Enz (2015); and Diehl and Dzubinski (2016), women's upward mobility in organizations is slower than that of their male counterparts, leading to a smaller number of female executives than male executives. The slower mobility of women toward positions of leadership is not due to lack of skills or education, but is potentially due to other factors.

One possible explanation for this inequality is a lack of emergence of women in leadership positions due to social barriers. Invisible social barriers occur when people do not possess specific or perceived behaviors (Baker, 2014). Finkelstein, Costanza, and Goodwin (2018) stated that social barriers prevent the hiring and promotion of women to leadership roles. These barriers create bias and acts of exclusion that are often subtle and unintentional. Biases and exclusion reinforce gender norms and practices within organizations and often subject women to assumptions that they are less competent than men in leadership roles (Diehl & Dzubinski, 2016; Mölders, Brosi, Bekk, Spörrle, & Welpe, 2018).

According to Golbeck et al. (2016), a bias is a person's displaced response of possible judgments. Biases fall along a continuum. On one end of the spectrum, biases can take conscious (explicit) form, and on the other end, they may be unconscious (implicit). Golbeck et al. defined implicit or unconscious bias as an attitude that people have, outside of their awareness, which is rooted in a habitual response either in support of or against something. Actions arising from unconscious bias may take the form of subtle slights that, in the long term, have an undesirable effect on a female's ability to emerge in leadership (Prime, Carter, & Welborn, 2009).

Madsen and Scribner (2017) determined that a gap exists in understanding why women seeking top management and leadership positions in organizations have progressed very little. Ely, Ibarra, and Kolb (2011) noted that unconscious bias based on gender limits a person's ability to obtain leadership status in organizations. Esser, Kahrens, Mouzughi, and Eomois (2018) studied male-dominated industries and found

that for women, leadership emergence involves a mix of professional and personal behaviors. Many organizations have instituted policies, procedures, and regulatory practices to end blatant discriminatory practices; however, unconscious biases that affect women continue to exist in society and business, and change is needed.

Researchers must contribute to both gender and leadership literature by exploring effective behaviors that women can use within these environments to counteract the adverse effects of unconscious bias and double binds. There is a need to focus on specific behaviors that have been successful in other contexts and investigate their success in an organizational environment in order to provide tools for women that aid in their emergence as leaders. In this study, I examined how grit and self-control behaviors, used within a male-dominated environment, can impact a woman's leadership emergence within that environment.

Problem Statement

The overarching question addressed in this study was why female leaders who seek to emerge in a leadership role within a male-dominated organization have difficulty succeeding. Despite the growth of leadership opportunities, women are underrepresented in the upper echelons of corporations. In 2017, women comprised approximately 44% of employees in S&P 500 companies; however, women were underrepresented in leadership positions, with 36% of women holding first- to middle-level management positions, 25% holding senior- to executive-level positions, and 5% holding CEO positions (Lyness & Grotto, 2018). Occupational and industrial representation also shows gender disparity. Women are underrepresented, relative to their share of the total workforce, in areas such

as manufacturing (29%), computer science (26%), and engineering (16%; U.S. Bureau of Labor Statistics, 2018a).

The specific problem is that continuing research on gender discrimination and leadership has not investigated effective behaviors that women can use to impact their leadership emergence and professional success within a male-dominated environment (Gipson et al., 2017). Research performed on both males and females in schools and the military has linked two behaviors to success: self-control and grit (Duckworth, Gendler, & Gross, 2014; Duckworth, Peterson, Matthews, & Kelly, 2007a). Duckworth and Gross (2014) suggested that the mediating effect of self-control and grit aids an individual's ability to reach a goal. However, there is a gap in this research literature concerning how grit impacts female leaders in organizational environments (Caza & Posner, 2018).

Sriram, Glanzer, and Allen (2018) demonstrated the importance of self-control and grit for teachers within a college environment; however, they did not apply these two behaviors to leadership emergence or a female population, nor did they examine the interplay of self-control and grit. Clipa and Greciuc (2018) linked self-control and perseverance (grit) to the performance of teachers and stated that these behaviors are essential to success. Schimschal and Lomas (2019) noted that future research on positive leadership variables, such as self-control and grit, could provide additional insight into the strength of significant relationships between these variables. There is a gap in research on the barriers of unconscious gender bias in an organizational environment, as well as the effect that self-control and grit have on women's ability to emerge as leaders.

Purpose Statement

This quantitative study assessed whether and to what extent a significant relationship exists between self-control and grit and the effect that self-control and grit have on female leader emergence within male-dominated industries of manufacturing, computer science, and engineering in the United States. The variable of self-control emphasizes the prioritization of decisions and behaviors that are based on goals and desired success outcomes (Duckworth & Gross, 2014; Duckworth & Seligman, 2017). The variable of grit includes two facets: perseverance of effort and consistency of interest (Duckworth & Quinn, 2009). Self-control and grit are highly correlated and are predictors of success (Duckworth et al., 2007a). The target population of this research was females currently working in a male-dominated industry in the public or private sector who were in middle management or higher positions within their organization.

Quantitative data were collected by accessing working women through internet-based surveys. An analysis of the results determined whether there was a mediating effect of self-control on grit in the female leaders' success in a male-dominated business environment. If unconscious bias within the workplace continues to lead to a lack of female leader emergence, women may struggle to achieve advancement opportunities, due to unconscious trappings of a double bind (Baker, 2014; Caza & Posner, 2018; Duckworth & Gross, 2014; Ely et al., 2011; Schimschal & Lomas, 2019; Sriram, Glanzer, & Allen, 2018). Research focusing on behaviors of self-control and grit may increase understanding of productive behaviors that women can exercise to support their

career success (Duckworth & Gross, 2014; Schimschal & Lomas, 2019; Sriram et al., 2018).

Research Questions

RQ1: Is there a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment?

$H1_0$: There is no significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

H1a: There is a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

RQ2: Is there a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment?

$H2_0$: There is no significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

H2a: There is a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

RQ3: Is there a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment?

$H3_0$: There is no mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

H3a: There is a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

Theoretical Framework

Role congruity theory explains the existence of barriers to women's ability to succeed in leadership. Eagly and Karau (2002) argued that the stereotypes associated with women's role in society are at odds with the stereotypes associated with effective leadership traits. Social role theory describes how people have expectations for individuals and believe that they will comply with the tendencies and actions that are equal to their social roles (Baker, 2014). Role congruity theory advances social role theory a step further and incorporates gender roles with leadership roles, suggesting that when people fail to conform to societal beliefs about what is consistent with their gender roles, punishment will occur in some way (Baker, 2014; Eagly & Karau, 2002).

The central tenet of role congruity theory is that the prejudice against females in leadership is due to the incongruence of social perceptions about women and those perceptions associated with leaders (Eagly & Karau, 2002). According to this theory, penalization occurs when women do not adhere to their gender roles based on the beliefs of society. Men are perceived as agentic, assertive, and decisive, whereas women are perceived as communal, with characteristics such as helpfulness and warmth (Brescoll, 2016). There are consequences for women, due to role incongruity, when agentic qualities are expected in leadership positions (Brescoll, 2016).

The hierarchical goal framework offers a structure to assess how the variables of self-control and grit interact with one another relative to goals. The hierarchical goal framework indicates that an individual will use self-control to find a successful resolution to a conflict between two impulses (Duckworth & Gross, 2014). One impulse corresponds to the goal that holds higher value now, and the other corresponds to a higher enduring goal (Duckworth & Gross, 2014). This framework also indicates that grit requires individuals to have a dominant superordinate goal toward which they work even when faced with obstacles or setbacks (Duckworth & Gross, 2014).

When faced with a setback, gritty individuals will be flexible and select a lower order goal or action that is similar to the lower order goal or action that was blocked (Duckworth & Gross, 2014). When goals or actions are deemed ineffective or unfeasible, a person will find a viable alternative (Duckworth & Gross, 2014). Self-control is necessary to manage lower level goals and conflicting actions, and grit is needed to focus on long-term, higher goals, even in the presence of setbacks and disappointments (Duckworth & Gross, 2014).

Nature of Study

The nature of this study was quantitative. Quantitative research is consistent with assessing mediation between variables such as self-control and grit and the impact this has on a woman's emergence as a leader, which was the primary focus of the dissertation. The mediator variable was self-control, the independent variable was grit, and the dependent variable was leader emergence. Through this quantitative research, I sought to determine whether self-control and grit have an impact specifically on the leader

emergence of females within a male-dominated double bind environment. For this research, mediation analysis assessed the influence and significant relationship between the variables.

Definitions

Self-control: Self-control is the ability to voluntarily regulate conflicting action, thoughts, or feelings in the focused pursuit of long-term goals (Duckworth, White, Matteucci, Shearer, & Gross, 2016). It is the set of processes that individuals use to regulate their "attention, motivation, and behavior to pursue higher-order goals despite momentary impulses and desires to do otherwise" (Duckworth et al., 2014, p. 22).

Grit: Grit is drive and persistence displayed to pursue long-term goals. Grit is the "perseverance and passion for long-term goals" (Duckworth et al., 2007a, p. 1087).

Leader emergence: Leader emergence is the process of transitioning or moving into a leadership position within an organization (Eagly, 2018). It is the degree to which one person is perceived as successful in a career as the leader of a group or in an environment (Panuova, 2015).

Career success: Career success is satisfaction and accomplishment of work-related outcomes that occur over time, are desirable, and are in line with a person's goals (Shockley, Ureksoy, Rodopman, Poteat, & Dullaghan, 2016b).

Male-dominated industries: A male-dominated industry was numerically defined as having a male-to-female personnel ratio of 70:30 (critical mass) or lower (Griffith & Dasgupta, 2018).

Conscious (explicit) bias: Conscious biases are explicit and are perceptions that occur at a conscious level (Golbeck et al., 2016). Explicit biases happen at a high level of awareness and involve blatant discrimination and willful ignorance toward another person (Golbeck et al., 2016).

Unconscious (implicit) bias: Unconscious bias is implicit and is an unintentional perception that operates at an unconscious level (Golbeck et al., 2016). Implicit bias is an attitude that a person has, outside of awareness, which is a preference either for or against something (Goltz & Sotirin, 2014). Implicit attitudes are persistent, are often rooted in habitual responses, and are difficult to alter (Goltz & Sotirin, 2014). Implicit bias involves a combination of attitudes and stereotypes about another person that affect an individual's understanding, actions, and decisions about that person in an unconscious way (Golbeck et al., 2016).

Stereotype: Stereotypes are mental shortcuts that allow a person to evaluate a complex environment and simplify it by categorizing the surroundings (Chang & Milkman, 2019).

Descriptive stereotypes: Descriptive stereotypes, in the context of this study, are qualities that are possessed and used to describe each gender (Eagly & Karau, 2002)

Prescriptive stereotypes: Prescriptive stereotypes, in the context of this study, are the beliefs that people have about the role that each gender should play (Eagly & Karau, 2002).

Double bind: A double bind occurs when individuals are trapped in an either-or situation and must decide between gender role expectations and demonstrate specific

characteristics or display characteristics that do not correspond to their gender role or gender expectations (Chisholm-Burns, Spivey, Hagemann, & Josephson, 2017).

Long-term goals: A long-term goal is a maintained vision focused on an objective that could take anywhere from a week to a few years to achieve (Duckworth et al., 2007)

Short-term goals: Short-term goals are hourly or day-to-day objectives (Galla & Duckworth, 2015).

Assumptions

I had the expectation that participants would be willing to share honest feedback about their experiences in an open manner. It was assumed that participants understood how specific behaviors affected their leader emergence within an organization. Assumptions were made regarding career advancement, including the following: (a) bona fide occupational qualifications are not a factor precluding women from advancement to open positions, (b) men and women are both willing to follow the same advancement career paths, and (c) men and women are both qualified for open positions and meet all qualifications required for advancement.

It was accepted that the surveys accurately measured the concepts in question and that the results provided an accurate representation of the sample population. Another assumption was that the survey method was considered reliable and valid. It was assumed that male-dominated environments are accurately measured using an adjusted critical mass calculation because Kanter's critical mass research was aged over 40 years (Griffith & Dasgupta, 2018). Lastly, it was believed that both men and women have equal opportunities to advance in their careers.

Scope and Delimitations

Unconscious bias can lead to many challenges when accessing a perception that we are unaware of consciously, as previously discussed. Characteristics that may have limited the scope of this inquiry included the influence of a woman's personal beliefs about her work, a woman's perception of herself and her ability as a leader, and her leadership style and experience. These characteristics present new challenges for women in business that were not within the scope of this research. Included in this survey were women currently working in the private and public sector, who were recruited using social media outlets. Men were excluded, in addition to women who worked in industries that were not measured as male dominated.

Limitations

Limitations of this research included the risk of a small sample size due to the limited percentage of women within male-dominated organizations. A challenge was locating the proper social media resource to recruit participants. However, the electronic collection of data allowed for a higher potential for inclusion and diversity within a heterogeneous sample. Another potential limitation was the definition of the male-dominated industry and the self-reported procedure to ensure that the participants were working in a male-dominated environment and industry. An additional concern was whether adequate technology to accommodate the participant was present in a confidential environment.

A potential barrier to collecting data through surveys is the ability to recruit a sufficient number of participants identified as a part of the sample population. Inclusion

criteria presented a challenge in reaching the proper participant sample size. Although surveys offer a cost-effective mode for gathering data, there is a risk of nonresponse when using this method. Selection bias was also a concern in using social networks to recruit participants.

Significance of Study

This research addressed a gap by investigating whether a significant relationship exists between self-control and grit to influence a woman's leader emergence within male-dominated industries of manufacturing and engineering. This project was unique because it addressed the impact that grit has on a female leader's success (Caza & Posner, 2018) and the link between self-control and grit in organizations (Schimschal & Lomas, 2019; Sriram et al., 2018). Additionally, this study investigated male-dominated organizational environments, as opposed to schools or the military, which in previous research have linked grit to success (Clipa & Greciuc, 2018; Duckworth & Gross, 2014). The results provide insight into the potential behaviors that a female exhibits to emerge successfully as a leader in a male-dominated organization. Insight from this study may be applied to behavioral solutions that can overcome the barriers that women face in leadership. Many organizations have instituted policies, procedures, and follow regulatory practices to end blatant discriminatory activities; however, unconscious biases that affect women continue to exist in business and society, and change is needed.

Summary

There are several areas of research that focus on lack of women in leadership and the discrimination challenges that women encounter in organizations. Research on grit

and the positive effect that this behavior has on success in academia and the military has been demonstrated. The goal of this research was to show how gender stereotypes shape a woman's journey to leadership without making her a victim of discrimination but rather empowering her to influence existing stereotypes and develop her leadership potential through the regulation of her behavior.

In Chapter 1, the history of unconscious bias, role congruity theory, and hierarchical goal theory were presented. The scope and outline of this research, the theoretical framework, and the limitations of the study were also reviewed in Chapter 1. The theoretical framework, unconscious bias, gender leadership behaviors, stereotypes, grit, self-control, and leader emergence are all discussed in greater detail in Chapter 2.

Chapter 2: Literature Review

Introduction

The major sections of this chapter include the literature search strategy, theoretical foundation, unconscious bias literature review, leader advancement literature review, grit literature review, and self-control literature review. The review of research on unconscious bias is broken into a historical review, challenges that women face, and a review of the double bind concept. The literature on the three main constructs of grit, self-control, and leader emergence was explored to understand the significant relationships between the variables in this study.

Literature Review Strategy

Primary sources of data included peer-reviewed journal articles within the PsycINFO, PsycARTICLES, and EBSCO databases. Additional sources consisted of books authored by researchers discussing their findings, data analysis, and theories. Keywords included *unconscious bias, women* and *leadership, grit, self-control, leader emergence, male-dominated industries, role congruity theory,* and *female leadership success.* The goal was to focus on research published within the last 5 years; however, seminal research from the 1980s and 1990s to the present was included because current research led back to self-control, grit, and theoretical literature. Most of the literature reviewed was from 2000 or later.

Theoretical Foundation

Role Congruity Theory

This study was grounded in role congruity theory. The central tenet of this theory is that individuals are penalized if they do not act in unity with their socially expected gender roles. Because strong male characteristics are consistent with leader characteristics, a male would not violate his gender role when demonstrating stereotypical leadership behaviors. A male social role, along with the stereotypical belief in leader agency, creates an expectation that males are more likely to possess leadership traits for success, compared to women (Martin & Phillips, 2017).

Male agentic behaviors include dominance, independence, aggression, and ambition (Brescoll, 2016). Martin and Phillips (2017) stated that male-dominated work environments tend to value stereotypical male agentic leadership traits versus traditional female communal characteristics. Role congruity theory corroborates that influential and strong male leaders are generally agentic. Insensitive behaviors are viewed more positively from agentic males as opposed to males who are sensitive and violate an agentic male role (Eagly & Karau, 2002).

Role congruity theory focuses on effectiveness and likability both before and after one becomes a leader (Johnson, Murphy, Zewdie, & Reichard, 2008). Role congruity theory indicates that incompatible relationships exist between the traditional female gender role and conventional leadership styles, producing a prejudice against female leaders (Eagly & Karau, 2002). The theory supports that women may not gain access to leadership because they are viewed as less favorably in the workplace when they adopt

agentic behaviors to obtain advancement (Johnson et al., 2008). Strong and assertive women possess less influence over men, compared to less assertive and less dominant women, who represent the traditional gender role (Johnson et al., 2008). A small body of research found that when women express anger, they are evaluated more negatively compared to when their male counterparts express anger (Johnson et al., 2008). These preconceptions result in a less favorable view of women as potential leaders. The incompatibility experienced between female and male roles leads to an evaluation of women leaders that is unfavorable due to a gender role violation (Baker, 2014; Brescoll, 2016).

Agentic and communal behaviors. Leaders possess unique characteristics that demonstrate their ability to build consensus among employees, their confidence in making business decisions, and a vision that produces long-lasting value. Leadership characteristics include task orientation, self-confidence, ambition, and self-sufficiency, which mirror an agentic agent (Brescoll, 2016). Zheng, Kark, and Meister (2018) added that stereotypically, people in leadership roles possess characteristics such as aggression, dominance, and self-confidence.

Masculine qualities are stereotypically associated with leadership, and men are often portrayed as naturally endowed to have the characteristics necessary for leadership (Prime et al., 2009). Males display agentic characteristics such as dominance, independence, aggression, and ambition (Brescoll, 2016). Assertiveness, control, efficacy, and mastery are also agency characteristics discussed in research (Johnson et al.,

2008). Lyness and Grotto (2018) added the agentic traits include competitive and achievement orientation.

Females may possess characteristics that are communal, such as concern for the welfare of others and being helpful, kind, gentle, and nurturing (Brescoll, 2016). Communal traits represent harmony and affiliation while promoting the formation of social relationships (Johnson et al., 2008). Lyness and Grotto (2018) supported that communal attributes include nurturing, kindness, and a compassionate social approach. These characteristics are not commonly considered strong leadership characteristics. Behaviors that are unselfish, friendly, and caretaking are viewed as lacking the necessary components for leadership emergence (Ely et al., 2011).

Lyness and Grotto (2018) contended that leadership stereotypes are consistent with masculine agentic traits compared to female communal characteristics. Due to perceptions of incongruences between communal and agentic characteristics, women are less likely to be viewed as qualified leaders and are less likely to succeed in leadership positions (Lyness & Grotto, 2018). Gender role violations occur when women display agentic leadership traits. Agentic behavior that is exhibited by men results in positive evaluation; however, the same behavior exhibited by a woman is viewed negatively (Johnson et al., 2008).

Women who display agentic traits to obtain leadership positions experience negative feedback about their behavior. For women in male-dominated workplace settings, when comparing their characteristics to the agentic expectations of leaders, a perceived lack of fit for success is created (Eagly & Karau, 2002; Martin & Phillips,

2017). For example, female leaders who are tough and insensitive are perceived as weak leaders because their behavior appears to violate communal female characteristics of sensitivity (Eagly & Karau, 2002). Backlash is more prevalent when female leaders threaten the status quo of the male-dominated leadership domain (Lyness & Grotto, 2018).

Hierarchical Goal Framework

Duckworth and Gross (2014) developed the hierarchical goal framework to explain how self-control and grit influence goal decision making. Individuals determine hierarchically which goal is more important than another and organize goals accordingly. The higher order goal sits at the top of a well-organized structure of lower order goals (Duckworth & Gross, 2014). Short-term goals are lower order, context-specific, interchangeable, and numerous when compared to higher order goals, which are fewer in number, more enduring, abstract, and more significant to the person (Duckworth & Gross, 2014). Through effective actions and the use of self-control and grit, an individual achieves higher order goals.

Self-control behavior manages short-term goals and aids in deciding between conflicting actions between short-term or lower level goals. Self-control is linked to self-regulation and occurs when a person chooses between two actionable impulses, one where the outcome would be valuable in the present and the other where the action would be useful to help achieve an enduring long-term goal (Kwon, 2017). Self-control focuses on short-term actions and goals to inhibit or enhance impulses that aid in the achievement of short-term goals that lead the individual to a superordinate goal (Duckworth & Gross,

2014). Using self-control may involve lessening an appealing goal for the moment in order to focus on the long-term value goal that leads to a higher enduring goal (Duckworth & Gross, 2014).

Grit helps in achieving a long-term superordinate goal. Grit is linked to tenaciously facing obstacles and setbacks, over a long period of time, to meet a dominant higher order goal (Duckworth & Gross, 2014). Grit pushes the individual toward the superordinate goal through the use of tenacity and perseverance (Duckworth & Gross, 2014). In the face of significant setbacks, to push forward, a gritty individual might create new actions or lower order goals to aid in forward movement (Duckworth & Gross, 2014).

Current Conditions

Within the United States, in the year 2000, women represented a mere 0.4% of CEOs in Fortune 500 companies, and by 2016, the numbers had only increased slightly, with women representing 4.4% of S&P 500 CEO positions (Bullough et al., 2017). Women make up more than 50% of the U.S. population and represent approximately half of the labor force, and 40% are the breadwinners of their household (Chisholm-Burns et al., 2017). Women earn about 60% of all bachelor's and master's degrees and 50% of doctoral degrees. They also hold about 50% of managerial and professional-level jobs; however, less than 25% hold executive or senior-level roles (Chisholm-Burns et al., 2017).

Worldwide, the numbers for women in executive leadership are weaker. For instance, women hold 2.5% of executive leadership or director positions in companies

based in India and listed on the Bombay Stock Exchange 100, and 15.4% of such positions in Australia. In Canada, there is just one woman CEO listed on the Canadian TSX 60, according to Catalyst (Bullough et al., 2017). A gap in research remains concerning why women have progressed so slowly in obtaining top management positions within organizations (Madsen & Scribner, 2017). Of 144 countries that participated in the latest World Economic Forum Global Gender Gap Report, at the current rate, it will take 170 years to reach gender equality globally (Bullough et al., 2017).

History of Gender Leadership Research

Historical research has reviewed barriers to women advancing in leadership, including blatant discrimination, fewer developmental assignments, lack of quality mentors or sponsorship, and exclusion from social and informational networks (Carli & Eagly, 2016). Workplace barrier research assumes that women can and want to compete to acquire a position in the upper levels of an organization, and their leadership capabilities are impressive, equal, and within some contexts surpass a male's leadership capabilities (Watts, Frame, Moffett, Van Hein, & Hein, 2015). Although many of the historical barriers have changed and some are not as prevalent as they once were, full equality is a distant goal, and female leaders face many obstacles that are not encountered by male leaders (Carli & Eagly, 2016).

Hyde, Bigler, Joel, Tate, and van Anders (2019) stated that people perceive that men and women are notably different. Pop culture and books demonstrate that women and men are worlds apart, which promotes the predisposition that gender differences

make males and females dissimilar. Zell, Strickhouser, Lane, and Teeter (2016) suggested that media reports not only can change, but also reinforce ideology about gender differences. However, meta-analytic research has revealed that the way that men and women lead, and their leadership styles, are not markedly different (Prime et al., 2009). An analysis of transformational, transactional, and laissez-faire leadership styles showed that there are more similarities in how women and men utilize these styles of leadership (Eagly & Carli, 2003).

Researchers have found that women and men share similarities in cognitive functions and personality traits (Prime et al., 2009). Hyde et al. (2019) proposed a gender similarities hypothesis, which stated that men and women are more similar for most psychological variables than they are different. Hyde et al. noted that overinflated claims concerning gender differences continue to create a gap between genders in suggesting that men and women are more different than similar.

Unconscious Bias

In this research, unconscious bias is the framework used for the operational environment. Biases may take conscious or unconscious forms. Conscious biases are explicit and are perceptions at a conscious awareness level (Golbeck et al., 2016). Conscious biases occur at a higher level of awareness and involve blatant or overt discrimination and willful ignorance toward another person; as such, they are easier to detect and control (Golbeck et al., 2016). Many employment laws protect against conscious and overt discrimination, such as those that protect against disparate treatment and disparate impact (Golbeck et al., 2016).

What is not as obvious is unconscious bias. Unconscious bias is implicit and is an unintentional perception that operates at an unconscious level (Golbeck et al., 2016). An implicit bias is an attitude that a person has, outside of awareness, which is a preference either for or against something (Goltz & Sotirin, 2014). Implicit attitudes are persistent, are often rooted in habitual responses, and are difficult to alter (Goltz & Sotirin, 2014). Implicit bias is a combination of attitudes and stereotypes about another person that affect an individual's understanding, actions, and decisions about the person in an unconscious way (Golbeck et al., 2016). After 30 years, debate over this concept continues. Implicit bias is an automatic and unconscious gut-triggered reaction that impacts the way in which people interact with one another (Golbeck et al., 2016). Hiring, pay, promotion, and other professional considerations are often affected by decisions made from implicit biases.

Unconscious bias is developed early and strengthens over time (Templeton, 2016). Society and culture influence these perceptions, both negatively and positively, culminating in the application of generalized perceptions of a individual (Templeton, 2016). There is an established implicit association between words such as *male* and *work*, or *women* and *family*, that results in generalized expectations that men are authoritative and competent for work environments, whereas women are nurturing and sympathetic for family environments (Templeton, 2016). When men or women do not exhibit gender traits that are consistent with social and cultural expectations, people subconsciously view the nonconformist as different, resulting in the potential for negative evaluations of their performance and abilities (Templeton, 2016).

In the workplace, unconscious bias is a form of gender bias that is powerful yet creates an invisible barrier to a woman's progression in leadership (Ely et al., 2011). Ely et al. (2011) conceptualized leadership development as based on identity, suggesting that subtle forms of gender bias within an organization interfere with a woman's ability to lead. Baker (2014) noted that blatant discrimination is not the only reason for the underrepresentation of women in executive leadership positions, adding that invisible barriers and beliefs also support the perception of a male role of leadership in the workplace. Once these barriers accumulate, it is difficult for women to see themselves as leaders within the environment and for others to see women as leaders (Ely et al., 2011). The incongruity of perception between a woman's gender role and a leadership role may contribute to this underrepresentation.

Second-Generation Bias

Women fall into the trap of gender discrimination or second-generation bias that is present in organizational policies and practices that subsequently limit their power over success and advancement in leadership (Ely et al., 2011). Second-generation bias does not require intent or deliberate exclusion, nor does it necessarily create immediate harm to the individual; instead, it has subtle and pervasive effects on a woman's ability to succeed or counter negative actions (Ely et al., 2011). In organizational hierarchies where males dominate, there are examples of second-generation bias within work environments in deeply rooted practices that connect effective leadership behaviors with those associated with males, in addition to cultural beliefs and interaction patterns that favor males (Diehl & Dzubinski, 2016; Ely et al., 2011). Second-generation bias is deeply

ingrained in the daily functions of organizational practices and is invisible to the men and women working within the environment (Diehl & Dzubinski, 2016).

Challenges Women Face in Leadership

Bierema (2016) stated that women face formidable challenges, in a male-dominated corporate culture with prevalent gender stereotyping, such as exclusion from important meetings or promotions based on achievement rather than potential. Women deal with unconscious bias or defined role perceptions that limit their ability to successfully obtain leadership status in an organization**.** Chisholm-Burns, Spivey, Hagemann, and Josephson (2017) supported that unconscious bias plays a substantive role in impeding a woman's advancement to senior or executive leadership positions. Lyness and Grotto (2018) stated that a leadership gap remains in the United States because of powerful and hidden barriers that are present within all levels of organizations and are supported by societal beliefs of traditional male and female stereotypes.

Leaders apply a gendered construct, with men holding leadership positions instead of women (Lyness & Grotto, 2018). Scholarly literature, on leadership, does not include women or gender issues, nor does the literature address these issues directly. Lyness and Grotto (2018) noted that a search of three leadership publications, since their inception, resulted in less than 10% of the articles discussing leadership mentioning for women or gender-related issues. A small body of research investigated challenges that women face when aspiring to leadership and defined the obstacles as the glass ceiling, the labyrinth, or the bed of thorns (Lyness & Grotto, 2018). These hurdles portray the difficulties women experience in securing leadership positions or senior levels in

management, in addition to showing the inhospitable conditions they often face (Lyness & Grotto, 2018).

Gupta, Han, Mortal, Silveri, and Turban (2018) stated the glass ceiling metaphor is a springboard to identify mechanisms that explain why certain women have been able to penetrate often invisible barriers to leadership while others struggle. Biases manifest as several subtle and unconscious slights that occur regularly and impede a woman's leadership advancement, resulting in a noticeable disadvantage over time (Prime et al., 2009). Research performed on women executives in a male-dominated corporate environment found that women adopt habits of speech and interaction, or unique hobbies, that offer a way to navigate through the male network (Gupta, Han, Mortal, Silveri, & Turban, 2018). Women often use strategies to de-emphasize their gender status to effectively interact with their male peers (Gupta et al., 2018).

Ely et al. (2011) outlined several other challenges that women encounter in reaching their leadership aspirations. The first challenge is social support. Women tend to have less social support compared to their male counterparts, which decreases their ability to obtain role models, receive feedback, and to experiment with different identities within the standards of the environment (Ely et al., 2011). The second challenge is that women have less room to make mistakes and learn due to structural limitations (Ely et al., 2011). As women become scarce in the higher ranks of an organization, it is noticeable when they make a mistake, resulting in greater scrutiny. The third challenge is a lack of informal networks, which can impact career direction and access to jobs (Ely et al., 2011). Token women, in a male-dominated environment, are tolerated but are not

included in professional or social networks, receive frequent scrutiny concerning their performance, and experience stereotypes by the male majority in an organization (Lyness & Grotto, 2018).

Stereotypes

Gender stereotyping has a long history concerning the impact on recruitment, engagement, and retention in the workplace (Prime et al., 2009) Stereotypes influence the beliefs about characteristics, human attributes, and the behaviors of people (Dunn-Jenson, Jensen, Calhoun, & Ryan, 2016). Chang and Milkman (2019) defined a stereotype as a mental short-cut that allows people to evaluate a complex environment and simplify it by categorizing their surroundings. Stereotypes are practical and useful when providing a broad understanding of the differences between people. However, when stereotypes solidify judgment-based biases, these biases have the potential to negatively impact people (Dunn-Jensen, Jensen, Calhoun, & Ryan, 2016).

Two stereotypes are prevalent in research, descriptive and prescriptive stereotypes. Descriptive stereotypes focus on the qualities that are possessed by each gender, and prescriptive stereotypes are the beliefs the people have about the role that each gender should play (Eagly & Karau, 2002). Descriptive stereotypes result from a lack of fit between a female gender role and a leadership role. Prescriptive stereotypes result from a woman adopting a masculine leadership style, which results in a violation of her sex role expectations (Johnson et al., 2008). Prescriptive stereotypes, assigned to females, are incongruent with a leadership role; however, the prescriptive stereotypes

attached to males are consistent with the expectations of a leader (Prime et al., 2009). Both stereotypes lead to a negative impression of the female leader (Johnson et al., 2008).

Brescoll (2016) stated that the belief that women are more sensitive when compared to their male counterparts is one of the strongest gender stereotypes in Western culture. Brescoll identified that emotional stereotypes are a fundamental barrier to women's success in leadership positions. Showing emotions can result in penalization, even when minor or moderately displayed within the workplace by female leaders, specifically when emotions of dominance, anger, or pride are displayed (Brescoll, 2016). Brescoll asserted that women who act outside stereotypes are unlikable, subject to backlash effects or scrutiny from their male counterparts, and are viewed as undeserving of rewards.

Biases, based on gender, are the foundation of stereotypes and can unconsciously influence decisions in a work or business environment (Dunn-Jensen et al., 2016). Many of these biases are deeply entrenched, powerful, and pervasive within society and occur in organizational structures, processes, and practices (Lyness & Grotto, 2018). Since many of these biases are hidden and unconscious, it is difficult to identify their impact on female empowerment and advancement (Lyness & Grotto, 2018). The adverse consequence risk is higher when biases are unconscious (Dunn-Jensen et al., 2016). A review of research shows that stereotypes can be changed. Since implicit associations are not as rigid as explicit, they are malleable and can be unlearned and replaced with accurate beliefs (Dunn-Jensen et al., 2016). Raising awareness is the first important step in reducing biases and stereotypes (Dunn-Jensen et al., 2016).

Baker (2014) stated that gender plays a significant role in obtaining leadership positions within an organization and is not isolated to one culture or country. A meta-analytic study that controlled for all differences except for gender, found that female leaders were evaluated less favorably compared to male leaders due to different judgments about leader behaviors and how those behaviors were ascribed to men or women (Prime et al., 2009). Effective leadership qualities are often attributed to male characteristics and stereotypically masculine talents, such as delegating, problem-solving are task-oriented leadership (Eagly & Karau, 2002; Prime et al., 2009). Eagly and Karau (2002) noted that this is problematic for women because when women violate their stereotypical female role, to enter into leadership, they are less likely to succeed. However, the same does not occur for men because their stereotypical gender role and leadership role are in alignment.

Double Bind

Female leaders face societal expectations that are both agentic and communal, and this creates a double bind or backlash conundrum (Zheng, Kark, & Meister, 2018). Societally, females are expected to possess characteristics that are communal (Brescoll, 2016). Female leaders may need to violate gender standards by exhibiting male-stereotypical agentic characteristics and avoid displaying female-stereotypical communal characteristics to be effective in business (Eagly & Karau, 2002). Women who aspire to occupy leadership positions must simultaneously demonstrate agency leadership role expectations while also adhering to communal gender role characteristics (Zheng et al., 2018). Without the simultaneous demonstration of both agency and communal

characteristics, female leaders could experience backlash to their behavior (Williams & Tiedens, 2016).

Due to the stereotypes related to gender roles, women fall into an awkward position where they must traverse an either-or situation; being a good woman or a good leader (Prime et al., 2009). Women who are true to their gender role and display feminine characteristics, seem too soft; however, when a woman is true to the leadership role and less feminine, she is viewed as harsh (Chisholm-Burns et al., 2017). Faced with this dilemma, women who hide their femininity are penalized for displaying assertiveness, competitiveness, and independence (Chisholm-Burns et al., 2017). The typically warm and less direct communication approach that women use undermines confidence in their abilities. Women striving for leadership positions not only need to perform their jobs well, but they must also actively overcome stereotypes and minimize negative perceptions (Chisholm-Burns et al., 2017).

Women face a double bind in their career when they must overcome stereotypes and reduce negative perceptions of their leadership capabilities, while balancing being too aggressive or not aggressive enough (Ely et al., 2011). Women face continual tradeoffs and must assess the environment to choose between being viewed as competent or likable in leadership roles (Ely et al., 2011). Due to this double bind, women face greater difficulty in achieving their full potential, and as a result, many organizations remain male-dominated in leadership roles (Berdahl et al., 2018).

Male-Dominated Work Environments

Male-dominated environments are business industries that hold a higher proportion of men compared to women in the workplace (Mölders et al., 2018). Within a male-dominated industry, cultures are more aggressive and competitive. Agentic leadership behaviors are viewed as critical in leadership roles, and males are viewed as effective leaders because they display important behaviors such as dominance and assertiveness (Mölders et al., 2018). When women work in male-dominated environments, they are particularly vulnerable to evaluative biases (Prime et al., 2009). Women in leadership roles are often scrutinized and held to a higher standard with different expectations compared to men in the workplace (Chisholm-Burns et al., 2017). According to Wright (2016), informal gender practices have a significant effect on women's daily experiences when working in a male-dominated environment.

Underrepresentation of women in professions and industries such as science, technology, engineering, and math could be due to biases in hiring decision making processes. Goltz and Sotirin (2014) noted that research is growing in areas such as science, technology, engineering, and math (STEM), where a 4:1 male to female ratio has remained consistent for the past 20 years. Male-dominated leadership has a powerful effect throughout an organization, including the structures that make up the organization and the interpersonal and intrapersonal processes within the organization (Lyness & Grotto, 2018).

Rice and Barth (2017) supported that traditional gender beliefs have an impact within organizations including promotion, salary, and retention decisions. Additionally,

gender stereotyping occurs in hiring decisions, where applicants are more likely to be selected and hired into a profession that is perceived as a gender match (Rice & Barth, 2017). Women who seek to obtain a leadership position in a male-dominated industry require unique competencies to gain value and respect from their male peers (Esser, Kahrens, Mouzughi, & Eomois, 2018).

Esser et al. (2018) performed gender-related leadership studies within male-dominated industries and used the perspective of male leaders to focus on the complexity of competencies required by women to succeed in a male-dominated environment. According to Esser et al., male leaders believe that it was essential for female leaders to possess masculine competencies to be successful in leadership in a male-dominated environment. To compete for leadership positions, women must over-adapt to masculine leadership behavior and reduce their female strengths to gain access to the workplace and boys' network using a complex mix of behaviors (Eagly & Carli, 2003; Esser et al., 2018).

In their research, Martin and Phillips (2017) found that perceived differences in assertiveness and independence accounted for variances in workplace confidence, in male-dominated environments, and within managerial positions. Martin and Phillips stated that a woman's confidence and behavior in the workplace was a result of how people embrace or downplay the differences in gender. Ely et al. (2011) referred to this strategy as a competence-likability trade-off, where women downplay feminine qualities to convey competence, and others attempt to strike a balance between feminine and leadership qualities.

Male-dominated leadership creates cultural barriers and top-down structures that interfere with female leadership potential. A study performed in male-dominated investment banks in the United Kingdom found that the demanding organizational culture, which worked for males within the environment, interfered with female promotion potential (Lyness & Grotto, 2018). A similar study in the United States found that women reported a lack of fit based on their level within the hierarchy of the organization (Lyness & Grotto, 2018).

The power held by a male leader influences organizational values and the rewards conferred within the organization (Lyness & Grotto, 2018). These values create expectations that could make it difficult for women to advance to senior levels within an organization (Lyness & Grotto, 2018). Stamarski and Son Hing (2015) determined that women are not only limited in their informal professional networks, but in a male-dominated environment, males exclude females from formal power structures, including leadership positions. Male-dominated work environments often perpetuate gender inequality rather than promote equality.

Based on cultural barriers, the lack of rewards, and exclusion from formal power structures, women's leadership could be undermined which may cause her to internalize gender stereotypes (Lyness & Grotto, 2018). Since some of these practices occur at the unconscious level and are subtle, it is difficult to offset the effects (Lyness & Grotto, 2018). In a male-dominated environment, women often show less interest in succeeding due to the barriers and exclusion, which is in contrast to the support and positive reaction

that their male peer's experience, reinforcing the perception that men are leaders and women are not (Lyness & Grotto, 2018).

Not only do women not receive the same sponsorship and advice as their male counterparts, but women are less prepared for leadership opportunities. Research has found that men receive more career development support to aid them in advancement into leadership positions, compared to females in the same environment (Diehl & Dzubinski, 2016). Work is assigned differently to women leading to a developmental offset compared to males within the environment (Lyness & Grotto, 2016). Men also experience more opportunities for leadership development when in a leader role, compared to women in male-dominated environments (Lyness & Grotto, 2018).

Kaiser and Wallace (2016) performed a study that found that women are less prepared for leadership due to a lack of opportunity, critical job experiences, and prior learning when compared to men. In a study performed on six global companies, Kaiser and Wallace found that women were rated lower in their strategic skills, which resulted in less likelihood that a woman would obtain a critical promotion into leadership within the organization. The researchers attributed this to the difference in gender and the fact that job experiences and assignments were less diverse for women. These experiences were needed to develop critical strategic skills (Kaiser & Wallace, 2016).

Chisholm-Burns et al. (2017) stated that female leaders are hired, trained, and promoted to a standard that is in line with stereotypically held male leadership characteristics. Research combining male-stereotypical traits of dominance, aggression, and achievement are more favorable when presented by a male than a female. To better

understand this situation, it is essential to recognize how women are perceived and the various behaviors that compromise their leader emergence (Prime et al., 2009).

Leader Emergence and Career Success

Leadership emergence is a process by which group members perceive leaders of the group, which could be more than one single leader; whereas, leader emergence is the degree to which one person is perceived to be the leader of a group (Panuova, 2015). Leader emergence describes the process by which a person is perceived as possessing leadership characteristics to succeed as the leader in a group. Leaders emerge within a group due to a variety of factors, including personality, traits, behaviors, and ability, to name a few (Panuova, 2015). Some researchers separate the constructs, and others combine them.

Wille, Wiernik, Vergauwe, Vrijdags, and Trbovic (2018) outlined emergence as a pathway to leadership success and ascendancy occurs in different ways for males and females. Eagly (2018) discussed that leaders emerge and are successful despite title or status within the organization. Leadership emergence is referred to as a route to leadership and a measure of how successful and satisfied a female leader self-reports her emergence (Eagly, 2018). The process of emergence aids in determining how effectively she navigates the route to leadership.

In situations that require social leadership, females tend to emerge quicker compared to males. Leaders emerge from a group based on the perception of the leadership characteristics they possess (Paunova, 2015). In groups that carry out tasks, have short-term goals, or do not require complex social interactions, males emerge as

leaders quicker compared to females (Panuova, 2015). Researchers have reviewed the conditions that exist when women obtain leadership positions within organizations, even with well-documented barriers. Several factors are beneficial in counteracting the gender stereotypes that thwart a woman's advancement into a leadership position within organizations. Changes in workforce distribution, shifting stereotypes, and viewing leadership as less agentic and more communal, have aided in successful advancement (Badura, Grijalva, Newman, Yan, & Jeon, 2018).

Subjective and objective factors can drive emergence into leadership, career advancement, and success. Objective factors are generally observable using landmarks that are reachable and comparable over time (Shockley et al., 2016b). An example would be the title, salary, or hierarchical position within an organizational chart. Personal evaluation of progress and career advancement are subjective factors (Shockley et al., 2016b). Career success and emergence into leadership occurs over time, as a person achieves work-related outcomes that are desirable and in line with their goals (Shockley et al., 2016b).

People form a subjective view of success, that is interpreted using objective factors such as title and salary; however, career success is also driven by less tangible factors that require measurement focused on subjective career success (Shockley et al., 2016b). Career satisfaction, success perceptions, and multidimensional conceptualizations of success must all be measured to determine subjective career success and the process of leader emergence (Shockley et al., 2016b).

Self-Control and Grit

Self-control is the ability to regulate behavior and impulses to achieve a specific goal (Kwon, 2017). Through the use of self-control, a person chooses to regulate their behaviors and actions in order to focus on a long-term goal. Duckworth et al. (2016) added that self-control is the voluntary regulation of thoughts, feelings, and actions that conflict or present a dilemma between an immediate reward and long-term enduring value. Self-control is considered a motivational behavior and is broadly used to capture all intentional, goal-directed behaviors (Duckworth et al., 2016).

Individuals who exhibit self-control use metacognition and self-talk as tricks to delineate between five strategies of self-control (Duckworth et al., 2014). These strategies include situation selection, situation modification, attentional deployment, cognitive change, and response modification (Duckworth et al., 2014). Situation selection and modification both involve physical modification of a situation (Duckworth et al., 2014). Attentional deployment and cognitive change include alteration of objective features and the mental representation within a situation (Duckworth et al., 2014). Response modification is the suppression or enhancement of an impulse (Duckworth et al., 2014).

Self-control is linked to academic success in several studies. Duckworth et al. (2016) performed two field experiments and found that when conflicting impulses emerge, self-control behaviors impact overall success for high-school students. For example, high school students must choose between the immediate interests of texting a friend verses performing academic work such as math homework, while recognizing the long-term benefits of the academic work to their future (Duckworth et al., 2016).

Duckworth discovered that self-control and grit are highly correlated, but not identical (Kwon, 2017).

Grit is unique in that it encompasses strength and drive; however, self-control involves effort that is directed and self-regulated (Vardhan & Mahato, 2019). Researchers over the past 100 years have termed grit as zeal, persistence, and capacity for hard work (Duckworth et al., 2007). Grit is the drive and persistence displayed to pursue long-term goals. Commitment to long-term goals requires maintaining a vision and movement toward the goal through steps over a week, months, or years (Vardhan & Mahato, 2019). Two facets of grit include consistency of interest and effort (Duckworth & Quinn, 2009). Determination, strength, and drive are all elements of grit (Vardhan & Mahato, 2019). People with grit do not sway from their goals when they meet resistance, absence of positive feedback, or challenges; rather, they have stamina and do not give up (Duckworth & Quinn, 2009).

Caza and Posner (2018) concluded that leaders with grit are highly innovative. Grit was assessed in undergraduate students at Ivy League schools and with cadets at the United States Military Academy at West Point (Duckworth et al., 2007a). Intellectual talent is important; however, researchers found that there are noncognitive trait differences that predict success (Duckworth et al., 2007a). Grit pushes an individual toward a difficult long term goal that requires sustained and focused attention over an extended period of time to achieve (Duckworth et al., 2007a).

Summary

The literature review has indicated that even though there has been some growth in female leadership within the United States, the progress in the advancement of women into leadership positions is slow (Baker, 2014). Male-dominated industries contain difficult barriers for advancement, creating more challenges for women seeking leadership within those environments (Prime et al., 2009). Research has often focused on the blatant discrimination that is present in work environments; however, it is important to research subtle actions that lead to unconscious bias (Carli & Eagly, 2016). Many of these biases are deeply rooted in day to day activities within male-dominated environments (Diehl & Dzubinski, 2016; Ely et al., 2011). Since we cannot change an organization's leadership approach or philosophies overnight, research from a different angle, focusing on the effective behaviors that some women have and other women can utilize, is needed to break through these barriers to female leadership advancement.

This research approach was a new one, by taking behavioral concepts that have been previously linked to success, and applying them to female leadership. Duckworth et al. (2007a) showed that grit and self-control are both effective in the success of students and adults in different environments. This research applied grit and self-control to female leadership in a male-dominated environment, to investigate if those behaviors have a productive impact on a woman's leader emergence in the workplace.

Chapter 3: Research Method

Chapter 2 focused on a literature review covering role congruity and hierarchical goal theories, unconscious bias, grit, self-control, male-dominated industries, and leadership emergence. This chapter addresses the research design and rationale for this quantitative study, the methodology for collecting and analyzing the data, threats to the validity, how threats and risks were minimized, ethical issues, and the management of these ethical issues.

Research Design and Rationale

The quantitative, nonexperimental design of this study used survey instruments to determine if a significant relationship existed between the independent variable of grit, the mediator variable of self-control, and the dependent variable of leadership emergence. A quantitative approach using correlation and mediation was the most effective way to test the theory of the effect that self-control has on grit and leadership emergence in male-dominated environments. The research questions for this study investigated the correlation between two variables and the mediating effect between three variables. Researchers have used quantitative research and correlation to investigate variables of grit, self-control, and success (Salisu, Hashim, Mashi, & Aliyu 2020; Schimschal & Lomas, 2019). Luthans, Luthans, and Chaffin (2019) noted that future researchers might want to investigate the mediation relationship of variables to include other psychological factors that enhance grit. They suggested that future investigations should study the mediating effect of grit in performance success (Luthans, Luthans, & Chaffin, 2019).

Researchers have successfully used mediation research to understand the relationship that grit and another variable have with performance success (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2011; Luthans et al., 2019; Salisu et al., 2020). Mediation focuses on the mechanism that functions between two predictor variables and an outcome. Duckworth et al. (2011) used mediation to research the effect that deliberate practice had on grit and spelling bee performance in the National Spelling Bee. Luthans et al. (2019) used mediation to research the effect psychological capital had on grit and academic performance as indicated by student grade point averages. Researchers have also used mediation to understand the effect that grit and resilience have on career success for entrepreneurs (Salisu et al., 2020).

A quantitative approach was appropriate to measure participants' perspectives on closed-ended statements such as those on Likert-type survey instruments (see Appendix D). Surveys and quantitative research designs have identified patterns of reactions of participants to grit and self-control questions (Duckworth et al., 2014; Duckworth & Gross, 2014). A qualitative research method was not appropriate because the purpose was not to investigate phenomenological research and lived experiences of participants. Qualitative researchers examine context and meaning that participants assign to an experience, and that was not the focus of this research study. Additionally, qualitative researchers investigate individual perspectives and not relationships between variables.

Methodology

Population

The sampling framework for this study consisted of females who worked in a male-dominated industry in the public or private sector and occupied middle management or higher positions within their organization. Participants were over the age of 18 and lived within the United States. A demographic questionnaire was collected from each participant (see Appendix C). Purposive sampling offered the most direct approach to obtaining the proper population.

Sampling and Sampling Procedure

Power analysis determined sample size. The G*Power 3.1.9.4 program (Faul, Erdfelder, Lang, & Buchner, 2019) was used, and alpha level, effect size, and power level were used in the calculation. F-tests was selected as the test family, with a linear multiple regression statistical test, and R2 deviation from zero and a priori options as the type settings. Alpha level was set at .05 because this is a traditional level of significance used in research (Faul, Erdfelder, Lang, & Buchner, 2007). The power level was set to .95 to minimize type II error, and effect size was set to .10 (Faul et al., 2007). The number of predictors was two: IV grit and MV self-control. The G*Power calculation resulted in a sample size of 158. To account for incomplete data, 10% was added, resulting in a homogeneous sample size of 174.

Kanter defined numerical gender domination as a ratio of 85:15 or lower in industries in research conducted in 1977 (Griffith & Dasgupta, 2018). However, since 1977, the number of women in the workforce has increased, thus creating the need to

reevaluate this number to properly determine current male-dominated industries in 2020. Additionally, research completed in 2018 suggested that even when industries reach 30% female participation, referred to as *critical mass*, there is a possible increase in backlash due to the loss of resources and status for the dominant group (Griffith & Dasgupta, 2018). For these reasons, the representation of women in male-dominated industries must be less than 30% (i.e., lower than critical mass; Griffith & Dasgupta, 2018). The U.S. Bureau of Labor and Statistics was used to collect 2018 industry data, and to select three male-dominated industries or occupational areas. If women within an industry constituted less than 30% of the workforce, the industry was deemed male-dominated for this study.

Figure 1 shows the results of data collection and the percentage of women as a total of all workers. The three industries or occupation areas used for this research were manufacturing, architecture/engineering, and computer/mathematical occupations. Manufacturing included all occupations in both durable and nondurable goods (U.S. Bureau of Labor and Statistics, 2018b). Architecture and engineering occupations included environmental engineers, agricultural engineers, biomedical engineers, chemical engineers, surveyors, drafters, health and safety engineers, and architects (U.S. Bureau of Labor and Statistics, 2018b). Computer and mathematical occupations included computer programmers, web developers, information security personnel, systems analysts, actuaries, and network administrators (U.S. Bureau of Labor and Statistics, 2018b).

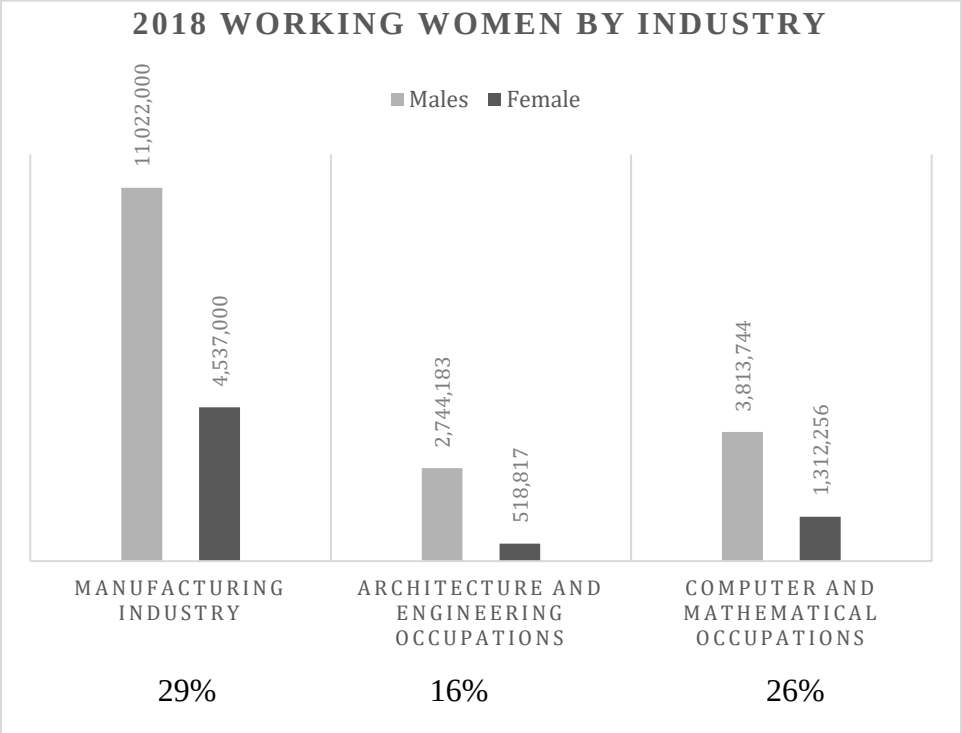

Figure 1. 2018 working women by industry/occupation. Data from U.S. Bureau of Labor Statistics (2018c, 2018d).

Recruiting and Data Collection Procedure

Quantitative data were collected by accessing working women through internet-based surveys. The nonprobability sample was drawn from a professional network (LinkedIn), personal networks, Amazon Turk, and other female leadership networks via social media. An electronic survey was administered using Survey Monkey and was distributed via social media, email, and social science website research postings. The identity of all participating organizations and membership information were masked, so there was no potential to identify participants.

Instrumentation

In the data analysis process for this study, I used a Likert-type survey instrument to determine if a significant relationship existed between the three variables. There was no one survey available to collect data on all three variables; thus, I used seven different surveys to create a new survey containing 70 Likert-type statements. Statements were adapted from the surveys listed in Table 1. Table 1 also lists the concept and reliabilities of each measure used.

The final survey was a Likert-type survey instrument (see Appendix D) designed to rate a female's grit and self-control behaviors and subjective rating of success in a male-dominated environment. Participants rated each statement on a 5-point Likert scale (1= *strongly disagree* to 5 = *strongly agree*). Cronbach's alpha assessed internal consistency with a reliability coefficient above 0.70. Permission to use the surveys was granted by the authors for noncommercial research or educational purposes without the need for written consent (see Appendix A). One survey required author permission (see Appendix B). Each survey was obtained from the Walden University Library.

Table 1

Concept, Measure, Reliability, and Survey Questions Used

Concept	Measure	Cronbach's alpha	Survey questions used
Self-control	Self-Control Scale		1, 2, 3, 6, 8,
1. Impulsivity	(Cochran, 2016a)	.74	18, 25, 26, 27,
2. Simple tasks		.75	29
3. Risk taking		.81	
4. Self-centeredness		.81	
5. Anger		.75	
	Self-Control Scale (Jeong, Kim, Yum, & Hwang, 2016a)	.77	1, 2, 6
Grit	Grit Scale		1, 2, 3, 5, 7, 8,
1. Consistency of interests	(Duckworth,	.84	9, 10, 12
2. Perseverance of effort	Peterson,	.78	
	Matthews, & Kelly, 2007a)		
	Grit Scale for Children and Adults (Sturman & Zappala-Piemme, 2017a)	.86	2, 3, 4, 5, 6, 7, 9, 11, 12
Career success/leader emergence	Career		1, 2, 3, 4, 5, 7,
1. Power/status	Satisfaction Scale	.86	9, 11, 12
2. Financial success	(Seibert, Kraimer,	.90	
3. Knowledge & skill development	Holtom, &	.87	
4. Employability	Pierotti, 2013a)	.81	
1. Recognition	Subjective Career	.78	1, 3, 4, 6, 7, 8,
2. Quality work	Success Inventory	.86	10, 12, 15, 20,
3. Meaningful work	(Shockley,	.89	21, 22, 23
4. Influence	Ureksoy,	.82	
5. Authenticity	Rodopman,	.81	
6. Growth & development	Poteat, &	.87	
7. Satisfaction	Dullaghan, 2016a)	.92	
1. Lack of cultural fit	Perceived Barriers	.80	1, 3, 4, 5, 6, 8,
2. Excluded from informal networks	to Career	.81	9, 10, 12, 13,
3. Lack of mentoring	Advancement		14, 16, 18, 19,
4. Poor organizational career mgmt processes	Scales (Lyness & Thompson,	.79 .74	20, 21, 22
5. Difficulty getting development assignments	2000a)	.84	

Self-Control Scale. The Self-Control Scale was developed by Cochran in 2016 to measure the process of self-control and situational deterrence interaction in a crime or deviance situation (Cochran, 2016b). This survey contains 38 items using a 4-point scale (1 = *agree* to 4 = *disagree*). Five subscales produce Cronbach's alpha of the following: impulsivity (.74), simple tasks (.75), risk-taking (.81), self-centeredness (.81), and anger (.75; Cochran, 2016b). This instrument was appropriate because it measured decision making based on self-control (Cochran, 2016b). Ten questions from this scale were used. Additionally, the scale was adjusted to a 5-point Likert scale with 1 = *strongly disagree* and 5 = *strongly agree*, for continuity within the new survey. These questions were reverse coded due to the scale adjustment that was made.

Self-Control Scale. Jeong, Kim, Yum, and Hwang developed another instrument named the Self-Control Scale in 2016 to measure self-control and the ability to regulate behavior when necessary. The researchers studied the effect of self-control on smartphone use. Using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*), participants indicated the degree to which they agreed or disagreed with each statement. The Self-Control Scale was developed to include six items with interitem consistency of Cronbach's alpha .77 (Jeong et al., 2016b). Three questions from this scale were used. This instrument was appropriate because it measured self-control and regulation of behavior in questions that are applicable to a variety of settings. None of the questions in this survey were reverse coded.

Grit Scale for Children and Adults (GSCA). The GSCA was developed by Sturman and Zappala-Piemme in 2017 to measure grit in children and adults in academic

and test-anxiety situations. Using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*), participants indicated their degree of agreement or disagreement based on how each question made them feel. The internal consistency of the GSCA was adequate at both time points, with Cronbach's alpha of 0.84 at baseline and 0.86 at Time 2, and test-retest reliability of 0.78 (Sturman & Zappala-Piemme, 2017b). Nine questions from this scale were used. This instrument was appropriate as it measures grit and is applicable to any setting. Three of the questions in this survey were reverse coded to verify participants' accuracy in completing the survey instrument.

Grit Scale. The Grit Scale was developed by Duckworth, Peterson, Matthews, and Kelly in 2007 to measure grit in dimensions from the Big Five model that predict success, including conscientiousness, extraversion, neuroticism, agreeableness, and openness (Duckworth et al., 2007b). Using a 5-point scale (1 = *very much like me* to 5 = *not like me at all*), participants indicated the degree to which each statement was like them or not like them. The Grit Survey was organized into two subscales with internal consistency respectively noted: Consistency of Interests (.84) and Perseverance of Effort (.78; Duckworth et al., 2007a). Nine questions from this scale were used. This instrument appropriately measured grit on two subscales that were relevant to this research. Four of the questions in this survey were reverse coded to verify participants' accuracy in the survey instrument.

Career Satisfaction Scale. The Career Satisfaction Scale was developed by Seibert, Kraimer, Holtom, and Pierotti in 2013 to measure how satisfied individuals are with their career success and emergence on several dimensions. Using a 5-point Likert

scale (1 = *strongly disagree* to 5 = *strongly agree*), participants indicated the degree to which they agreed or disagreed with each statement based on how they felt with each aspect of their career, given their age and amount of work experience (Seibert et al., 2013). Four subscales were used, with Cronbach's alpha respectively noted: power and status (.86), financial success (.90), knowledge and skill development (.87), and employability (.81; Siebert et al., 2013b). Nine questions from this scale were used. This instrument appropriately evaluated subjective career satisfaction as a measure of the process of leadership emergence (Shockley et al., 2016b). None of the questions in this survey were reverse coded.

Subjective Career Success Inventory Scale. The Subjective Career Success Inventory Scale was developed by Shockley, Ureksoy, Rodopman, Poteat, and Dullaghan in 2016. This questionnaire has 24 items from eight dimensions measuring subjective career success and emergence in an environment. Using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*), participants indicated the degree to which they agreed or disagreed with the each statement when they considered their career as a whole (Shockley et al., 2016b). The subscales and internal consistency reliability are noted respectively: recognition (.78), the quality of work (.86), meaning of career (.89), influence (.82), authenticity (.81) growth and development (.87), and career satisfaction (.92). Cronbach's alpha was satisfactory. This instrument was appropriate because it measured a self-evaluation of success in meeting leadership emergence and career goals such as advancement, income, and skills, rather than through traditional means of success

such as title or hierarchal status. Thirteen questions from this scale were used. None of the questions in this survey were reverse coded.

Perceived Barriers to Career Advancement Scale.

The Perceived Barriers to Career Advancement Scale was developed by Lyness and Thompson in 2000 to examine perceived barriers that female's encounter which limit their career progression within a work environment. Using a 5-point Likert scale (1 = *no problem at all* to 5 = a *very serious problem*) participants rated the extent to which each factor had been a problem for their career advancement within an organization. This questionnaire had five subscales producing a Cronbach's alpha respectively: lack of culture fit (.80), excluded for networks (.81), lack of mentoring (.79), poor organizational career management processes (.74), difficulty getting development assignments (.84) (Lyness & Thompson, 2000b). Seventeen questions from this scale were used for overall analysis of barriers in the workplace for the participants. This instrument was appropriate because it measured perceived barriers to success and leadership emergence (Shockley et al., 2016b). Since career success is often measured by organizational level and compensation, this survey data added information on the barriers present for research participants. None of the questions in this survey were reverse coded.

Data Analysis

Data collected through responses from participants were analyzed and summarized using descriptive statistics. Data were managed and statistically analyzed using Statistical Package for Social Science (SPSS) software, Version 25. The results were analyzed to examine the mediating effect of self-control on grit and female leader

emergence in a male-dominated business. Data cleaning and checking occurred prior to performing data analysis. The SPSS program allowed for the identification of missing data and the process of data cleaning. Any surveys returned with missing or incomplete data were removed from consideration.

Simple linear regression was used to measure the strength and degree of the correlation between the interval variables. Frequency distribution analysis was used to calculate percentage distributions to compare the frequency of data in the data set. Hypotheses 1 and 2 were addressed using linear regression and correlation analysis. Hypothesis 3 was addressed using mediation analysis as guided by Preacher and Hayes's PROCESS approach via bootstrapping using SPSS (Hayes, 2012). A Sobel test was used to cross validate the mediation analysis to determine whether the reduction in the effect of the independent variable on the dependent variable via the mediator was significant.

Threats to Validity

Threats to both internal and external validity were assessed. One assumption was that participants would answer the survey honestly and provide truthful answers. It was also assumed that no other factors, such as bona fide occupational qualifications or willingness to participate limited a woman's success within the environment. Another assumption was that the study maintained ethical guidelines and adhered to the test administration as outlined.

Surveys must accurately measure the concepts in question and provide an accurate representation of the sample population to ensure validity. It was assumed that male-dominated environments were accurately measured using the critical mass criteria

(Griffith & Dasgupta, 2018). Additional validity concerns and barriers existed in recruiting a sufficient number of participants within the sample population. Surveys and social media offered a cost-effective method to gather this data. However, selection bias was a concern in using social networks to recruit participants.

The proper sample size limited a type I and type II error. Power analysis was used to determine the number of responses that produced results at a high confidence interval with a small margin of error. The alpha level for the power analysis could not be set too high or too low so that a true null hypothesis was not rejected (type I) and a false null hypothesis was not accepted (type II). The significance level for this study was set to .05, rather than .001, and the power was set to .80 (Faul et al., 2007).

Ethical Procedures

Data collection occurred after obtaining Walden University IRB approval (number 03-16-20-0520029) expiring on March 15th, 2021. All data collected remained confidential and identifiable information was not collected. The study was voluntary and participants were not required to complete the survey. Participants were notified that they may end the survey at any time by exiting the program. The data obtained was stored on a password-protected personal computer with limited access by any outside person. Data were backed up and stored on an encrypted cloud-based platform that was password-protected with restricted access by any outside person. Data were not disseminated and will be destroyed after five years.

The informed consent form was located on the first page of the survey and participants could not proceed to the survey unless they agreed to the statements on the

consent form. The consent form informed participants of the risks and benefits of participating in the study. No physical or psychological harm was identified as a risk resulting from this study. The benefits of participating included the ability to consider career advancement success and share behaviors that were effective or not effective in the participant's career process. As noted in Chapter 1, selection bias was reduced through the use of multiple methods of participant recruitment. The results of this study were posted on my social media pages and shared with any organizations that helped with participant recruitment.

Summary

In this chapter, the research design, methodology, threats to validity, and ethical considerations were discussed. In summary, this research was a quantitative, nonexperimental study of self-control and grit behaviors of female leaders within a male-dominated industry and the impact these behaviors have on their leader emergence within that environment. Multiple recruitment methods were used and clear operational definitions of each variable were determined to address threats to validity and potential risks. Data were collected via web survey and data were statistically analyzed using SPSS with the Hayes PROCESS v3.4 add-on tool. The results are discussed in detail in Chapter 4.

Chapter 4: Results

The purpose of this quantitative study was to assess whether and to what extent a significant relationship exists between self-control and grit, as well as the effect that self-control and grit have on female leader emergence within the male-dominated industries of manufacturing, computer science, and engineering in the United States. Mediation, linear regression, and correlation analysis were used to address the research questions and hypotheses as follows:

RQ1: Is there a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment?

$H1_0$: There is no significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

H1a: There is a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

RQ2: Is there a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment?

$H2_0$: There is no significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

H2a: There is a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

RQ3: Is there a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment?

$H3_0$: There is no mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

H3a: There is a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

Data were analyzed using SPSS with the Hayes PROCESS v3.4 add-on tool. This chapter outlines the statistical analysis and findings. In this chapter, data collection, study results, and a summary are presented.

Data Collection

The data collection phase was completed within a 1-month period using various recruiting strategies. Data were collected using a web-based program via Survey Monkey. This method offered an increased response rate and offered respondents anonymity.

Based on the IRB-approved recruiting plan, invitations were sent to my entire network with the following data collection timeframes and processes:

1. My professional LinkedIn network (approximately 600 connections) and my Facebook network (approximately 150 connections). The recruiting window was 30 days.
2. Amazon Turk was also used. The recruitment window was 30 days.
3. Two anonymous women's groups also posted the survey in their April publication. The recruiting window was 20 days.

4. Connections were asked to share the survey with others in their network, which resulted in additional participants being reached through social media connections on LinkedIn and Facebook.

Several reminders were sent during the recruiting window. By the end of the data collection window for the above mentioned recruiting methods, 284 of the 158 required sample size responses were collected. Of the responses collected, 107 were rejected because demographic data did not match the requirements for participation in the study (71 respondents were from a nonqualifying industry, 11 worked outside the United States, and 25 were male). Additionally, 13 responses were rejected due to missing or incomplete data. One hundred sixty-four participants were used in this sample.

After the dataset was acquired, the scores were converted to Microsoft Excel format and uploaded to SPSS, where the data set was established and labeled. Ten questions in the self-control scale and seven in the grit scale were reverse coded. This was performed using the compute variable section within the transform tab of SPSS.

A diverse group of 164 respondents was collected. Demographic data was analyzed using frequency distribution. Table 2 presents details on the demographics of the participants, including age, race, marital status, and education level.

Table 2

Respondent Age, Race, Marital Status, Education Level (N = 164)

		Frequency	Percent
Age	18-29	51	31.1
	30-39	53	32.3
	40-49	36	22.0
	50-59	17	10.4
	60 +	7	4.3
Race	Caucasian/White	125	76.2
	Asian	15	9.1
	Hispanic	11	6.7
	African American/Black	9	5.5
	American Indian	2	1.2
	Other	2	1.2
Marital status	Married	102	62.2
	Single (never married)	48	29.3
	Separated/divorced	14	8.5
Education level	Bachelor's degree	77	47.0
	Master's degree	38	23.2
	Associate's degree	17	10.4
	Some college, no degree	13	7.9
	High school graduate	10	6.1
	Some postgraduate work	6	3.7
	PhD, law, medical, or advanced degree	3	1.8

In Table 3, data are presented for the respondents' industry, sector, number of years worked in the industry, current title, and number of years within that title. Among participants, 50% were from the manufacturing industry, 16% were from architecture and engineering, and 34% were from computer and mathematical industries. Forty-one percent of participants held a manager or senior manager title, 9% were at the director level, 28% were supervisors or senior team leaders, and 3% held a VP or C-level position

within their organization. The remaining 19% defined themselves as holding another titled leadership position within the organization.

Table 3

Respondent Industry, Sector, Years in Industry, Current Title, and Years in Current Title (N = 164)

		Frequency	Percent
Industry	Manufacturing	82	50.0
	Computer or mathematical	56	34.1
	Architecture or engineering	26	15.9
Sector	Private	105	64.0
	Public	56	34.1
	Nonprofit	3	1.8
Years in industry	Less than 1 year	5	3.0
	1-3 years	44	26.8
	4-7 years	53	32.3
	8-11 years	24	14.6
	12-15 years	8	4.9
	More than 16 years	30	18.3
Current title	Manager or senior manager	67	40.9
	Supervisor/senior team lead	46	28.0
	Director	15	9.1
	Other leader in organization	15	9.1
	Self-employed/owner	12	7.3
	Partner/shareholder/BOD	4	2.4
	VP or senior VP	2	1.2
	C-level executive (CIO, COO, CFO)	2	1.2
	CEO or president	1	0.6
Years in title	Less than 1 year	15	9.1
	1-3 years	68	41.5
	4-7 years	56	34.1
	8-11 years	15	9.1
	12-15 years	4	2.4
	More than 16 years	6	3.7

Data Results

The research questions were investigated using linear regression, correlation, and mediation analysis. The analysis was performed using the Statistical Package for the Social Sciences, Version 26.

Descriptive Statistics

There was no one scale to collect all of the data relevant to the three variables, requiring the use of seven different surveys and the development of a new survey containing 70 Likert-type statements. The intent of all scale authors was to not rank data using an ordinal scale, but to anchor data using interval scales as interpretation of the results. Cochran's (2016) and Jeong et al.'s (2016) self-control scales were combined, with 13 questions total, to create a measure of self-control behavior. The Struman and Zappala-Piemme (2017) and Duckworth et al. (2007) grit scales were combined, 18 questions total, to create a measure for overall grit behavior. Seibert et al.'s (2013) and Shockley et al.'s (2016) career success and satisfaction scales were used to create a measure of self-reported emergence and success in a leadership position, 22 questions total, to create a measure for overall leader emergence. Lyness and Thompson's (2000) perceived barriers scale was used to investigate overall perceptions of the barriers present and is reviewed in the discussion in Chapter 5.

For this study, three scores were created, for self-control, grit, and leadership emergence. Assuring measurement validity of the survey required that Cronbach's alpha have a reliability coefficient above 0.70. Cronbach's alpha is widely used to estimate reliability of tests and scales, and it was utilized to confirm the measure of internal

consistency and scale reliability. All survey questions were retained, and Cronbach's alpha indicated that all items had relatively high internal consistency, self-control (> .80), grit (> .80), and leadership emergence (> .90). In Table 4, the descriptive statistics for self-control, grit, and leadership emergence are listed.

Table 4

Cronbach's Alpha and Descriptive Statistics

	α	*M*	*SD*	*n*
Self-control reliability	0.893	45.5	10.559	13
Grit reliability	0.835	64.9	9.932	18
Leadership emergence reliability	0.908	86.0	12.04	22

Note. Cronbach's alpha scores indicated that all items have relatively high internal consistency. CI = 95%. *n* = number of questions.

Prior to analyzing the three research questions, basic parametric assumptions were evaluated. The assumption of normality was analyzed using Q-Q scatterplots for each variable. There were slight variations noted during review of the plots (see Figures 2-4); however, the deviations were mild, and normality assumption was met for each variable.

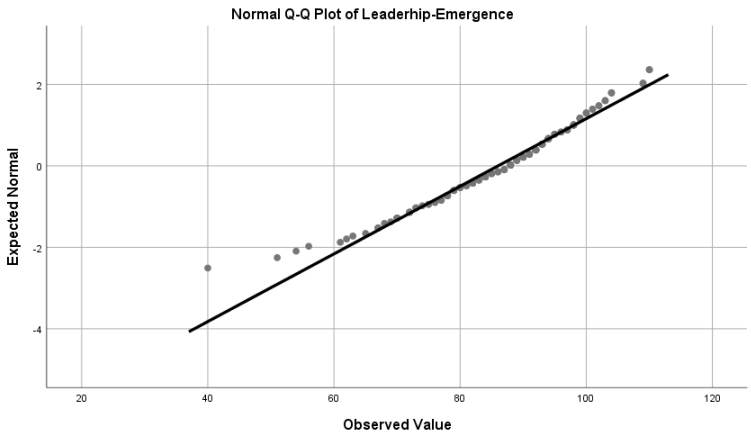

Figure 2. Q-Q scatterplot for leadership emergence.

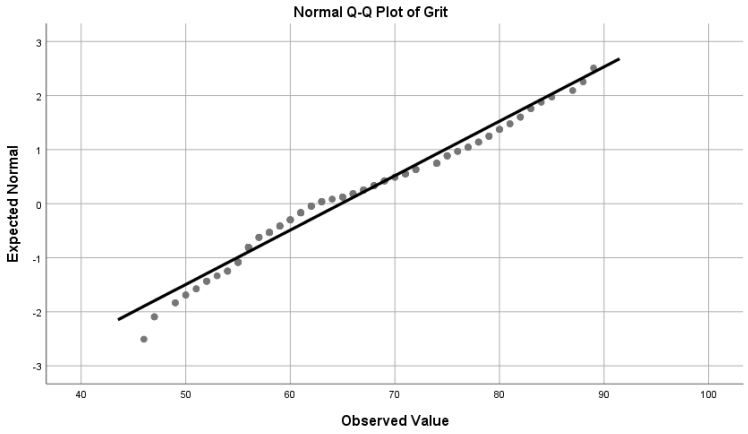

Figure 3. Q-Q scatterplot for grit.

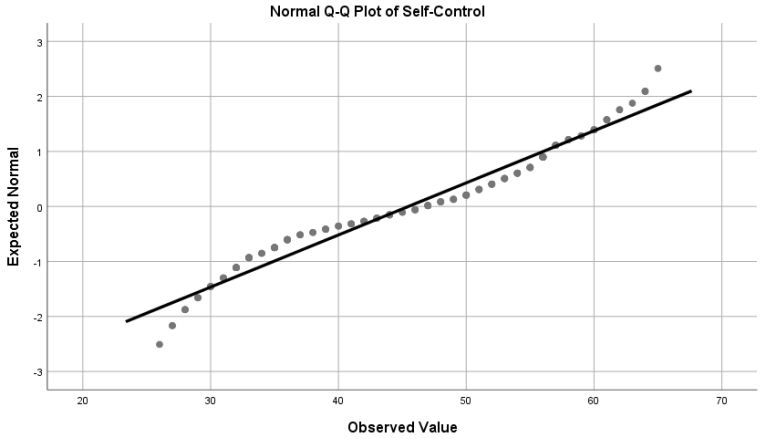

Figure 4. Q-Q scatterplot for self-control.

Additionally, a histogram was reviewed to assess normality of the dependent variable; see Figure 5 (skewness -.694, kurtosis .887). Assumptions of linearity and homoscedasticity are considered met using the evidence presented in the residual P-P scatterplot; see Figure 6.

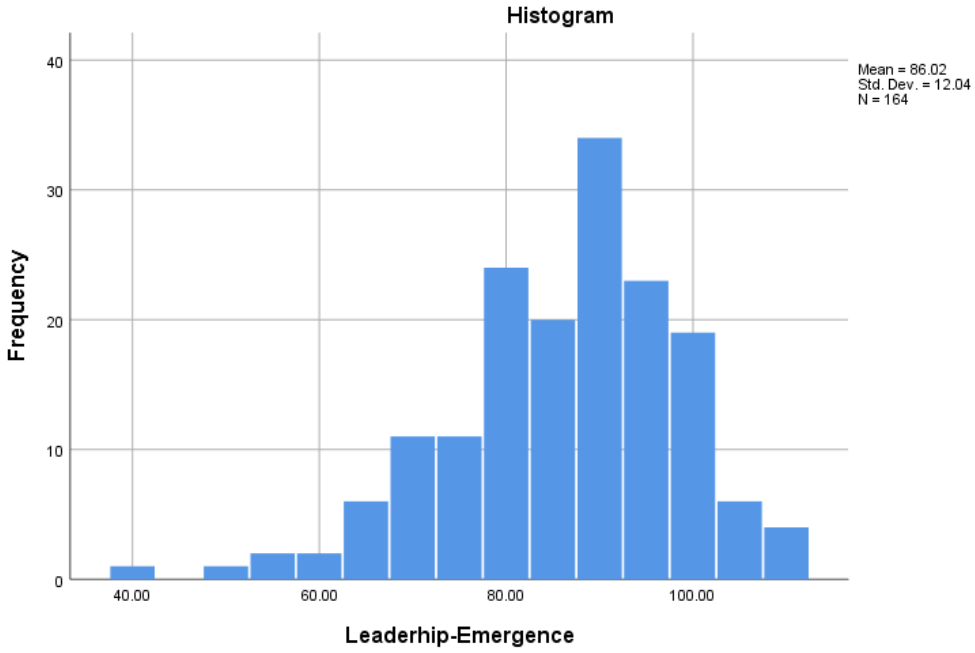

Figure 5. Histogram for leadership emergence.

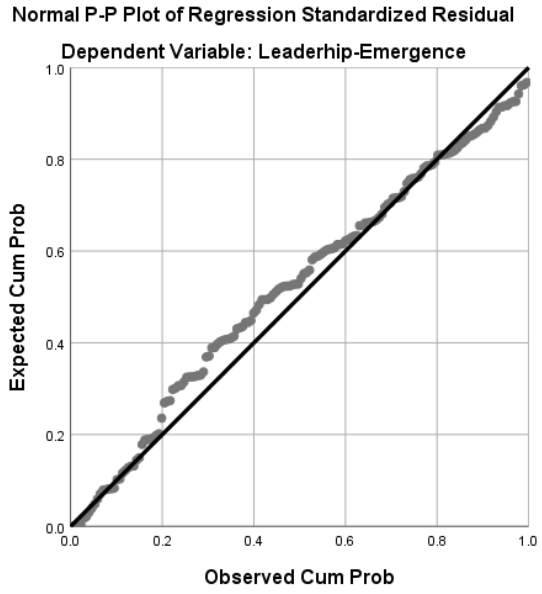

Figure 6. Residual scatterplot for leadership emergence.

Research Question 1 Analysis

RQ1: Is there a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment?

$H1_0$: There is no significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

H1a: There is a significant relationship between a woman's self-control and leadership emergence in a male-dominated work environment.

To investigate RQ1, a simple linear regression was conducted. The predictor was self-control, and the outcome was leadership emergence. The predictor variable was found to be statistically significant (B = .186, 95% CI (.011-.360), $p < .05$), indicating that for every one-unit increase in self-control, leadership emergence changed by +.186 units. The model explained approximately 3% of the variability (R^2 = .027). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted. There was sufficient evidence at the .05 level to conclude that self-control and leadership emergence are positively correlated. Results of the simple linear regression are provided in Table 5.

Table 5

Simple Linear Regression With Self-Control Predicting Leadership Emergence

Item	*B*	*SE*	ß	*t*	*p*
Self-control	0.186	0.088	0.163	2.101	0.037*

Note. Dependent variable: leadership emergence.
* Correlation is significant at the 0.05 level (1-tailed).

Research Question 2 Analysis

RQ2: Is there a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment?

$H2_0$: There is no significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

H2a: There is a significant relationship between a woman's grit and leadership emergence in a male-dominated work environment.

To investigate RQ2 a simple linear regression was conducted. The predictor was grit and the outcome was leadership emergence. The predictor variable was found to be statistically significant (B = .301, 95% CI (.119-.483), p < .01), indicating that for every one-unit increase in grit, leadership emergence changed by +.301 units. The model explained approximately 6% of the variability (R^2 = .062). Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. There was sufficient evidence at the .01 level to conclude that grit and leadership emergence are positively correlated. Results of the simple linear regression are provided in Table 6.

Table 6

Simple Linear Regression With Grit Predicting Leadership Emergence

Item	*B*	*SE*	ß	*t*	*p*
Grit	0.301	0.092	0.249	3.266	0.001**

Note. Dependent variable: leadership emergence.
** Correlation is significant at the 0.01 level (1-tailed).

Research Question 3 Analysis

RQ3: Is there a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment?

$H3_0$: There is no mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

H3a: There is a mediation relationship between a woman's self-control, grit, and leadership emergence in a male-dominated work environment.

To investigate RQ3 a simple mediation analysis was performed using the PROCESS add-on tool in SPSS (Bootstrap 10,000, CI 95%) to determine if self-control mediated the relationship between grit and leadership emergence. A Sobel test was used to cross validate the mediation analysis to determine whether the reduction in the effect of the independent variable on the dependent variable via the mediator was significant. Figure 7 shows the research model of RQ3.

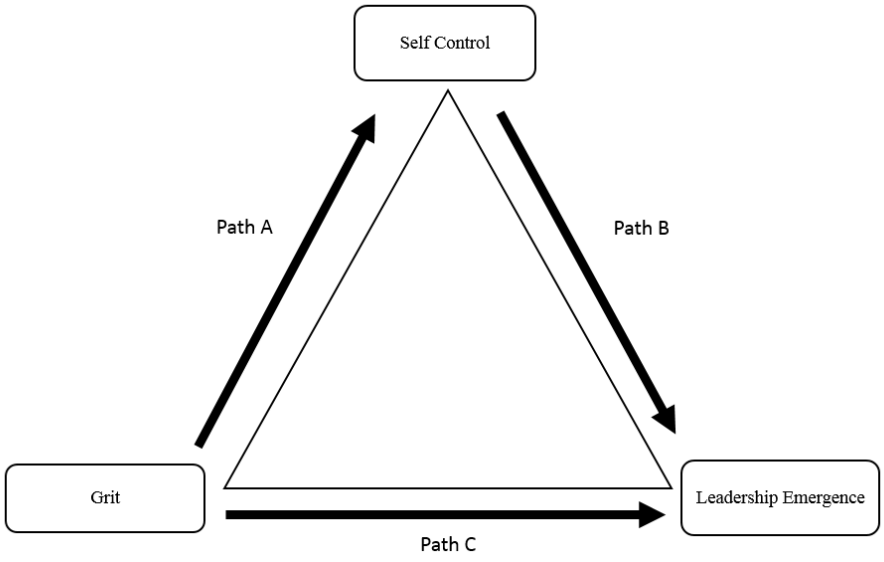

Figure 7. Research model for Research Question 3.

Table 7 shows the Pearson correlation matrix of the three variables included in the mediation analysis.

Table 7

Correlation Analysis Among the Three Variables Included in Mediation Analysis

	Self-control	Grit	Leadership emergence
Self-control			
Pearson correlation	1	.642**	.163*
Sig. (two-tailed)		0	0.037
N	164	164	164
Grit			
Pearson correlation	.642**	1	.249**
Sig. (two-tailed)	0		0.001
N	164	164	164
Leadership emergence			
Pearson correlation	.163*	.249**	1
Sig. (two-tailed)	0.037	0.001	
N	164	164	164

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

The outcome variable for analysis was leadership emergence, the predictor variable was grit, and the mediator variable was self-control. There was not a significant indirect effect of grit on leadership emergence through self-control (*B* = 0.0045, 95% CI (-.1682-.1523). Therefore, the null hypothesis is not rejected. There was insufficient evidence to conclude that grit and self-control have a mediating effect on leadership emergence.

A Sobel test was also conducted. The goal of a Sobel test was to check whether the reduction in the effect of the independent variable on the dependent variable via the

mediator was a significant reduction and therefore whether the mediation effect was statistically significant. The Sobel test found lack of mediation in the model (z = .0582, p = .9536).

Table 8 through Table 11 provide a visual representation of the mediation effects and Sobel test analysis, with Figure 8 displaying each path and effect.

Table 8

Statistical Output Verifying the Basic Relationship IV to DV

Model	*B*	*SE*	*t*	*p*
1. (Constant)	66.4859	6.0523	10.9853	0.0000
Grit	0.3013	0.0923	3.2657	0.0013**

Note. DV: leadership emergence.
** Correlation is significant at the 0.01 level.

Table 9

Statistical Output of the IV Predicting the MV (First Regression)

Model	*B*	*SE*	*t*	*p*
1. (Constant)	1.2433	4.2032	0.2958	0.7678
Grit	0.682	0.0641	10.6455	0.000**

Note. DV: self-control.
** Correlation is significant at the 0.01 level.

Table 10

Statistical Output of the IV and MV Predicting the DV (Second Regression)

Model	*B*	*SE*	*t*	*p*
1. (Constant)	66.4776	6.0726	10.9471	0.000
Grit	0.2967	0.1206	2.4598	0.015**
Self-control	0.0066	0.1135	0.0585	0.9535

Note. DV: leadership emergence.
** Correlation is significant at the 0.01 level.

Table 11

Output From Sobel Test

	Input	*B*	*Z*	*SE*	*p*
a	0.682	.0045	0.0582	0.0777	0.9536
b	0.066				
sa	0.0641				
sb	0.1135				

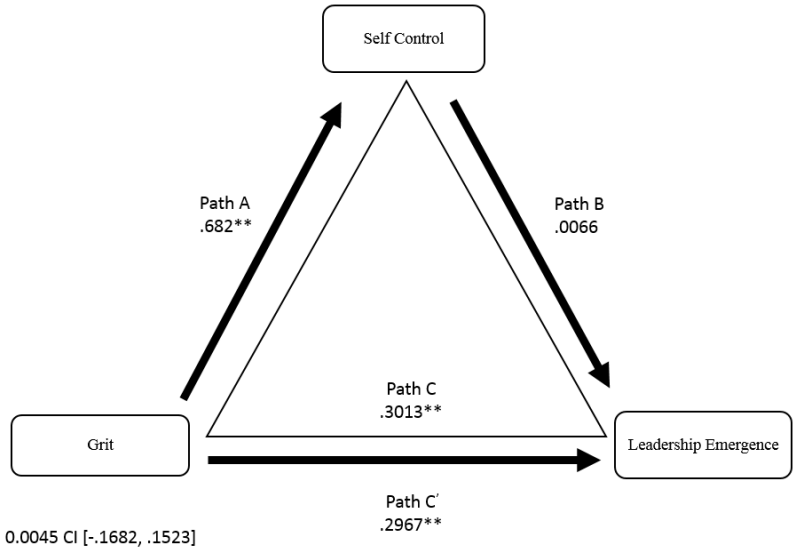

Figure 8. Mediation analysis with self-control mediating the relationship between grit and leadership emergence.

Summary

The goal of this study was to assess the relationship between self-control, grit, and leadership emergence. Chapter 4 provided data collection details, results and analysis performed. Data were collected from 284 participants in a one-month period, only 164 met the requirements of this study. Three variables were measured to include grit, self-control, and leadership emergence. Each had strong reliability. There were two simple

linear regression performed resulting in analysis that showed significance suggesting a positive relationship between self-control and leadership emergence, and grit and leadership emergence.

When measuring mediation, the analysis determined that there was not a significant indirect effect of self-control on grit and leadership emergence. Based on the analysis, there is not a strong confidence that mediation has a stronger effect than the main effect of grit on leadership emergence. The detailed discussion of these findings, conclusions to be drawn from the findings, social change implications, and recommendations for future research are discussed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This quantitative study assessed whether and to what extent a significant relationship exists between self-control and grit and the effect that self-control and grit have on female leader emergence within male-dominated industries of manufacturing, computer science, and engineering in the United States. For this research, simple linear regression and mediation analysis were used to assess the influence and significant relationship between the variables.

The surveys used for this research had strong reliability. Two simple linear regressions were performed, resulting in an analysis that showed significance. RQ1 data analysis resulted in accepting the alternative hypothesis of a significant relationship between self-control and leadership emergence. RQ2 data analysis resulted in accepting the alternative hypothesis of a significant relationship between grit and leadership emergence. When measuring mediation, the analysis determined that even though some effects within the mediation model were significant, there was not a significant indirect effect of self-control on leadership emergence when controlling for grit (Path B). Based on the analysis, there was not strong confidence that mediation has a more substantial effect than the main effect of grit on leadership emergence.

Interpretation and the Findings

Researchers have linked success in academia and the military to both self-control and grit, and have also found that self-control and grit mediate an individual's ability to meet a goal (Duckworth et al., 2014; Duckworth et al., 2007a). The lack of discussion of

gender in the workplace offered a gap for this research to investigate. Consistent with previous researchers, this research found that there is a strong relationship between grit and leadership emergence, as well as between self-control and leadership emergence (Clipa & Greciuc, 2018; Duckworth et al., 2014; Sriram et al., 2018).

However, it is also noted that other positive leadership variables play a key role in leadership success and emergence (Schimschal & Lomas, 2019). Because the mediation relationship of grit and self-control to leadership emergence is not a strong one, there may be other variables that must be investigated or that might contribute more to leadership emergence. For example, researchers have also used mediation to understand the effect that grit and resilience have on career success for entrepreneurs (Salisu et al., 2020). Other researchers have suggested that emotional intelligence or conscientiousness is a strong predictor of success and emergence (Werner, Milyavskaya, Klimo, & Levine, 2019). Most recently, researchers have demonstrated that there is a need to better understand these variables and their interaction to understand effective behaviors for emergence and success (Georgoulas-Sherry & Kelly, 2019).

Within the past year, Werner, Milyavskaya, Klimo, and Levine (2019) performed research on academic motivation using the variables of self-control, grit, and conscientiousness. This research is similar to the study presented here; however, it adds the variable of conscientiousness to the study. The researchers found that these traits accounted for most of the positive variance associated with motivation (Werner et al., 2019). Alhadabi and Karpinski (2020) also performed research similar to this study and demonstrated that grit is positively associated with academic performance through

mediators such as self-efficacy and goal mindset. Danner, Lechner, and Rammstedt (2020) performed a cross-national comparative study from Germany to see if grit impacts career success and subjective job outcomes such as satisfaction. They found modest outcomes compared to this study; however, they stated that education levels and labor market impacted their results.

Overcoming gender and leadership barriers in an effective way is important to female leadership emergence. Results from the barriers survey for this study showed that overall, most of the barriers were sometimes a problem for female leaders in all industries (Lyness & Thompson, 2000). Across the industries studied, the leadership areas that presented the greatest barriers for participants, with 25%-27% finding these areas to be a problem, included feeling pressure to fit in or adapt to a culture, being held to a higher standard, not having access to the right people, and a lack of opportunity to move across functions of businesses.

Overcoming barriers and challenges requires grit, determination, and zeal, which was the focus of research conducted in Asia, where interviews were conducted on female auto drivers to understand how they used determination and grit to reach success in their profession (Vardhan & Mahato, 2019). Grit fuels strength with self-regulation to make a direct effort to pursue long-term goals and often delay gratification and was a key factor in self-employment success (Vardhan & Mahato, 2019). Researchers continue to find links between self-control and grit success in fields such as academia and not the importance of these behaviors in overall success and advancement (Duckworth, Taxer, Eskreis-Winkler, Galla, & Gross, 2019).

As presented, some organizational environments have higher levels of stereotypes, double bind, or discrimination, and female leaders are perceived as not fitting into leadership positions (Ferguson, 2018). This plays a key role in the disparity seen in female leadership emergence throughout the United States. Some organizations, specifically male-dominated industries, adopt a token-women strategy or create programs that do not reflect consideration of the unique development needs of women in leadership positions (Ely et al., 2011). Other organizations approach the issue in a different way and attempt to fix women or teach them skills so that they fit into a male-dominated environment (Ely et al., 2011). Both of these approaches have proven ineffective and do not directly address the issues that women face in these environments (Ely et al., 2011). Alternatively, it is important that organizations give adequate resources, support, and mentoring to women to foster success and development for female leaders (Wille, Wiernik, Vergauwe, Vrijdags, & Trbovic, 2018).

Theoretically, there is a lack of actionable frameworks for women in leadership positions to use in efforts to overcome gender disparity and unconscious bias (Ely et al., 2011). One goal of this research was to place some control back into the hands of female leaders and offer them a way to creatively impact their emergence success into leadership positions. With the use of role congruity theory to bring awareness to social gender issues and hierarchical goal theory as a means to integrate self-control and grit into goal accomplishment, one can see that there is power in women effectively utilizing these positive behaviors to impact their personal success and emergence (Duckworth & Gross, 2014; Eagly & Karau, 2002;). Both self-control and grit influence female leadership

success in a male-dominated environment and can be used to support women's emergence and success in those environments.

Leadership and leadership emergence also hold a variety of definitions and perceptions. Sosik, Chun, Ete, Arenas, and Scherer (2019) associated leadership knowledge, character, and ethics with advancement in a leadership position. Badura, Grijalva, Newman, Yan, and Jeon (2018) stated that leadership emergence involves whether and to what degree an individual is perceived as a leader by others. Luria, Kahana, Goldenberg, and Noam (2019) added that leadership emergence may be both formal and informal, noting that emerging leaders may have not formal authority, but influence over a group. Yet others define it as the process of emerging into a leadership position (Eagly, 2018). For this research, the last definition of the term was used; however, consideration of the act of becoming a leader adds a unique element to this type of research and offers area for future research, which is discussed later in this chapter.

This study provides evidence that behaviors of self-control and grit are both important for female leaders and have a strong, direct relationship with leadership emergence in a male-dominated work environment. However, self-control does not enhance the effect of grit on leadership emergence in a male-dominated environment, based on the mediation analysis within this study. Vazsonyi et al. (2019) supported the contention that self-control and grit are similar yet distinct. It is clear that grit and self-control do impact leadership emergence, offering a female leader increased satisfaction in the areas that this research assessed as measures of emergence, including finances, status,

knowledge, skill, employability, influence, development, and recognition (Shockley et al., 2016b; Seibert et al., 2013b).

Limitations of the Study

Limitations of this research include the small sample size due to the limited percentage of women within male-dominated organizations. Inclusion criteria also presented a challenge in reaching the proper participant sample size. However, the electronic collection of data allowed for higher potential for inclusion and diversity within a heterogeneous sample. A challenge was locating the proper social media and membership resources to recruit participants. Another potential limitation was the definition of the male-dominated industry and the self-reported procedure to ensure that the participants were working in a male-dominated environment and industry.

Threats to both internal and external validity were assessed. One assumption made in this study was that participants answered the survey honestly and provided truthful answers for this study. It was also assumed that no other factors, such as bona fide occupational qualifications, willingness, or years of experience, limited a woman's success within the environment.

The surveys needed to measure the concepts in question accurately and provide an accurate representation of the sample population for validity. The proper sample size was obtained to ensure that a type I or type II error was not made. Power analysis was used to determine the number of responses that would produce results at a high confidence interval with a small margin of error. The alpha level for the power analysis could not be set too high or too low so that a true null hypothesis was not rejected (type I) and a false

null hypothesis was not accepted (type II). The significance level for this study was set to .05, rather than .001, and the power was set to .80 for this reason (Faul et al., 2007).

Recommendations for Future Research and Practice

Further research into the relationship between grit and self-control is recommended (Schimschal & Lomas, 2019). Recommendations for future research include assessing the gender of leadership within the male-dominated environment to determine differences between genders in key management roles. Considering the size of the organization or isolating a certain sector might be helpful in assessing gender discrimination and double-bind challenges within a specific group of participants. Size of the company might also influence the relationships between employees and culture. Assessment of leader emergence from a group or follower perceptive within one organizational environment could aid in the investigation of these variables in a more controlled way.

The impact of other controlled positive behaviors such as self-regulation or emotional intelligence might add to future research. Reviewing the moderation effect or multiple influencing variables within mediation would add to the understanding of how these variables interact with one another. Self-leadership has also been studied as an important variable that contributes to success in the workplace (Stewart, Courtright, & Manz, 2019). Knowledge level and education could greatly impact emergence into leadership positions; future research might test the impact of knowledge or education and how participants emerged into leadership titles or positions (Shockley et al., 2016).

Investigating this research from the opposite perspective is a recommendation for practice. Role congruity theory also impacts males, so research on the influence of positive leadership behaviors that a male can use in a female-dominated environment is recommended for practice. Lastly, there was no updated formal method for determining male dominance. For this reason, Kanter's dominance ratios were updated using recent research presented based on critical mass calculations (Griffith & Dasgupta, 2018). More formal collection of organizational data to confirm male dominance for each participant would be helpful for future researchers and practice.

Implications for Social Change

There are several positive social change implications of this study. First, the study expands literature based on role congruity theory and female leadership (Eagly & Karau 2002). It also fills a gap in the literature because it is the first study to examine the relationship between grit, self-control, and leadership emergence of female leaders in a male-dominated environment. Empirical evidence shows that grit and self-control have a positive relationship with emergence into leadership (Duckworth et al., 2007). This awareness may influence a woman to use grit and self-control to regulate behaviors and navigate challenging work environments.

This research has demonstrated the impact that women can have on their success within a male-dominated work environment by assessing productive and positive behaviors that female leaders can use to impact career success and emergence into a leadership position and status. In a male-dominated environment that is often riddled with

unconscious bias and stereotypes, providing effective behavioral awareness tools allows a female leader to personally manage her emergence.

This research may also promote awareness of unconscious bias, stereotypes, and the subtle slights that impact a woman's emergence into leadership and cause challenges to her growth and development. Not only can this study help promote change to policies and procedures that improve advancement opportunities for women, but it could also provide support for programs that promote diversity and inclusion in leadership positions for both males and females. For organizations to maintain competitive advantage, opportunities must be made equally available to each gender allowing for variations of leadership style and strategic approach (Eagly & Carli, 2003).

Conclusion

In summary, this study addressed a gap in research by investigating the relationship between self-control and grit and the impact that those variables have on a woman's emergence into leadership with a male-dominated environment. Research has focused on the lack of female emergence into leadership positions, the discrimination and bias challenges that women face, and the impact that discrimination has on women's success.

To contribute to female leadership research in a unique and positive way, it was essential to focus on organizational environments that have higher levels of bias and stereotypes compared to others. This research investigated positive behaviors that women can embrace to influence their success in a male-dominated environment. By approaching this research positively and providing women with a personal way to impact their success

and emergence, I am abandoning the notion that females are victims of discrimination or negative circumstance. Rather, this research is intended to empower female leaders to use grit and self-control to impact their leadership potential.

References

Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in university students. *International Journal of Adolescence and Youth*, *25*(1), 519-535. doi:10.1080/02673843.2019.1679202

Badura, K. L., Grijalva, E., Newman, D. A., Yan, T. T., & Jeon, G. (2018). Gender and leadership emergence: A meta-analysis and explanatory model. *Personnel Psychology*, *71*(3), 335-367. doi:10.1111/peps.12266

Baker, C. (2014). Stereotyping and women's roles in leadership positions. *Industrial and Commercial Training*, *46*(6), 332-337. doi:10.1108/ict-04-2014-0020

Bear, J. B., Cushenbery, L., London, M., & Sherman, G. D. (2017). Performance feedback, power retention, and the gender gap in leadership. *The Leadership Quarterly*, *28*(6), 721-740. doi:10.1016/j.leaqua.2017.02.003

Berdahl, J. L., Cooper, M., Glick, P., Livingston, R. W., & Williams, J. C. (2018). Work as a masculinity contest. *Journal of Social Issues*, *74*(3), 422-448. doi:10.1111/josi.12289

Brescoll, V. L. (2016). Leading with their hearts? How gender stereotypes of emotion lead to biased evaluations of female leaders. *The Leadership Quarterly*, *27*(3), 415-428. doi:10.1016/j.leaqua.2016.02.005

Bullough, A., Moore, F., & Kalafatoglu, T. (2017). Research on women in international business and management: Then, now, and next. *Cross Cultural & Strategic Management*, *24*(2), 211-230. doi:10.1108/CCSM-02-2017-0011

Carli, L. L., & Eagly, A. H. (2016). Women face a labyrinth: An examination of metaphors for women leaders. *Gender in Management: An International Journal*, 31(8), 514-527. doi:10.1108/gm-02-2015-0007

Caza, A., & Posner, B. Z. (2018) How and when does grit influence leaders' behavior? *Leadership & Organization Development Journal*, *40*(1), 124-134. doi:10.1108/LODJ-06-2018-0209

Chang, E. H., & Milkman, K. L. (2019). Improving decisions that affect gender equality in the workplace. *Organizational Dynamics*. doi:10.1016/j.orgdyn.2019.03.002

Chisholm-Burns, M. A., Spivey, C. A., Hagemann, T., & Josephson, M. A. (2017). Women in leadership and the bewildering glass ceiling. *American Journal of Health-System Pharmacy*, *74*(5), 312-324. doi:10.2146/ajhp.160930

Clipa, O., & Greciuc, M. A. (2018). Relations of style of leadership and achievement motivation for teacher. *Revista Romaneasca pentru Educatie Multidimensionala, 10*(4), 55-64. doi:10.18662/rrem/72

Cochran, J. K. (2016a). Self-Control Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t52547-000

Cochran, J. K. (2016b). Moral propensity, setting, and choice: A partial test of situational action theory. *Deviant Behavior*, *37*(7), 811-823. doi:10.1080/01639625.2016.1145024

Danner, D., Lechner, C. M., & Rammstedt, B. (2020). A cross-national perspective on the associations of grit with career success. *Compare: A Journal of Comparative*

and International Education, 50(2), 185-201. doi:10.1080/03057925.2019.1617110

Diehl, A. B., & Dzubinski, L. M. (2016). Making the invisible visible: A cross-sector analysis of gender-based leadership barriers. *Human Resource Development Quarterly, 27*(2), 181-206. doi:10.1002/hrdq.21248

Duckworth, A. L., Gendler, T. S., & Gross, J. J. (2014). Self-control in school-age children. *Educational Psychologist, 49*(3), 199-217. doi:10.1080/00461520.2014.926225

Duckworth, A. L., & Gross, J. J. (2014). Self-control and grit: Related but separable determinants of success. *Current Directory of Psychological Science, 23*(5), 319-325. doi:10.1177/096372141451462

Duckworth, A. L., Kirby, T. A., Tsukayama, E., Berstein, H., & Ericsson, K. A. (2011). Deliberate practice spells success: Why grittier competitors triumph at the National Spelling Bee. *Social Psychological and Personality Science, 2*(2), 174-181. doi:10.1177/1948550610385872

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007a). Grit Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t07051-000

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007b). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 92*(6), 1087-1101. doi:10.1037/0022-3514.92.6.1087

Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the short grit scale (GRIT–S). *Journal of Personality Assessment, 91*(2), 166-174. doi:10.1080/00223890802634290

Duckworth. A. L., & Seligman, M. P. (2017). The science and practice of self-control. *Association of Psychological Science, 12*(5), 715-718. doi:10.1177/1745691617690880

Duckworth, A. L., Taxer, J. L., Eskreis-Winkler, L., Galla, B. M., & Gross, J. J. (2019). Self-control and academic achievement. *Annual Review of Psychology*, *70*, 373-399. doi:10.1146/annurev-psych-010418-103230

Duckworth, A. L., White, R. E., Matteucci, A. J., Shearer, A., & Gross, J. J. (2016). A stitch in time: Strategic self-control in high school and college students. *Journal of Educational Psychology*, *108*(3), 329-341. doi:10.1037/edu0000062

Dunn-Jensen, L. M., Jensen, S., Calhoun, M. A., & Ryan, K. C. (2016). Revealing gender bias: An experiential exercise. *Organization Management Journal*, *13*(2), 101-114. doi:10.1080/15416518.2016.1152456

Eagly, A. H. (2018). Some leaders come from nowhere: Their success is uneven. *Journal of Social Issues, 74*(1), 184-196. doi:10.1111/josi.12263

Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly*, *14*(6), 807-834. doi:10.1016/j.leaqua.2003.09.004

Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review, 109*(3), 573–598. doi:10.1037/0033-295X.109.3.573

Ely, R. J., Ibarra, H., & Kolb, D. M. (2011). Taking gender into account: Theory and design for women's leadership development programs. *Academy of Management Learning & Education, 10*(3), 474-493. doi:10.5465/amle.2010.0046

Esser, A., Kahrens, M., Mouzughi, Y., & Eomois, E. (2018). A female leadership competency framework from the perspective of male leaders. *Gender in Management: An International Journal, 33*(2), 138-166. doi:10.1108/GM-06-2017-0077

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175-191. doi:10.3758/bf03193146

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2019). G*Power. Version 3.1.9.4.

Ferguson, T. W. (2018). Female leadership and role congruity within the clergy: Communal leaders experience no gender differences yet agentic women continue to suffer backlash. *Sex Roles, 78*(5-6), 409-422. doi:10.1007/s11199-017-0803-6

Finkelstein, L. M., Costanza, D. P., & Goodwin, G. F. (2018). Do your high potentials have potential? The impact of individual differences and designation on leader success. *Personnel Psychology, 71*(1), 3-22. doi:10.1111/peps.12225

Fleming, S. S. (2015). Déjà vu? An updated analysis of the gender wage gap in the US hospitality sector. *Cornell Hospitality Quarterly, 56*(2), 180-190. doi:10.1177/1938965514567680

Galla, B. M., & Duckworth, A. L. (2015). More than resisting temptation: Beneficial habits mediate the relationship between self-control and positive life outcomes. *Journal of Personality and Social Psychology*, *109*(3), 508-525. doi:10.1037/pspp0000026

Georgoulas-Sherry, V., & Kelly, D. (2019). Resilience, grit, and hardiness: Determining the relationships amongst these constructs through structural equation modeling techniques. *Journal of Positive Psychology and Wellbeing*, *3*(2), 165-178. Retrieved from https://www.journalppw.com/index.php/JPPW

Gipson, A. N., Pfaff, D. L., Mendelsohn, D. B., Catenacci, L. T., & Burke, W. W. (2017). Women and leadership: Selection, development, leadership style, and performance. *The Journal of Applied Behavioral Science*, *53*(1), 32-65. doi:10.1177/0021886316687247

Golbeck, A. L., Ash, A., Gray, M., Gumpertz, M., Jewell, N. P., Kettenring, J. R., ... Gel, Y. R. (2016). A conversation about implicit bias. *Statistical Journal of the IAOS*, *32*(4), 739-755. doi:10.3233/sji-161024

Goltz, S. M., & Sotirin, P. (2014). From academics to change agents in a gender equity initiative. *Organization Management Journal*, *11*(3), 194-207. doi:10.1080/15416518.2014.947531

Griffith, E., & Dasgupta, N. (2018). How the demographic composition of academic science and engineering departments influences workplace culture, faculty experience, and retention risk. *Social Sciences, 7*(5), 1-25. doi:10.3390/socsci7050071

Gupta, V. K., Han, S., Mortal, S. C., Silveri, S. D., & Turban, D. B. (2018). Do women CEOs face greater threat of shareholder activism compared to male CEOs? A role congruity perspective. *Journal of Applied Psychology*, *103*(2), 228-236. doi:10.2139/ssrn.3027096

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. Retrieved from http://www.afhayes.com/public/process2012.pdf

Hyde, J. S., Bigler, R. S., Joel, D., Tate, C. C., & van Anders, S. M. (2019). The future of sex and gender in psychology: Five challenges to the gender binary. *American Psychologist*, *74*(2), 1-23. doi:10.1037/amp0000307

Jeong, S. H., Kim, H., Yum, J. Y., & Hwang, Y. (2016a). Self-Control Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t45563-000

Jeong, S. H., Kim, H., Yum, J. Y., & Hwang, Y. (2016b). What type of content are smartphone users addicted to? SNS vs. games. *Computers in Human Behavior*, *54*, 10-17. doi:10.1016/j.chb.2015.07.035

Johnson, S. K., Murphy, S. E., Zewdie, S., & Reichard, R. J. (2008). The strong, sensitive type: Effects of gender stereotypes and leadership prototypes on the evaluation of

male and female leaders. *Organizational Behavior and Human Decision Processes, 106*(1), 39-60. doi:10.1016/j.obhdp.2007.12.002

Kaiser, R. B., & Wallace, W. T. (2016). Gender bias and substantive differences in ratings of leadership behavior: Toward a new narrative. *Consulting Psychology Journal: Practice and Research, 68*(1), 72-98. doi:10.1037/cpb0000059

Kwon, H. W. (2017). The sociology of grit: Exploring grit as a sociological variable and its potential role in social stratification. *Sociology Compass, 11*(12), 1-13. doi:10.111/soc4.12544

Luria, G., Kahana, A., Goldenberg, J., & Noam, Y. (2019). Leadership development: Leadership emergence to leadership effectiveness. *Small Group Research, 50*(5), 571-592. doi:10.1177/1046496419865326

Luthans, K. W., Luthans, B. C., & Chaffin, T. D. (2019). Refining grit in academic performance: The mediational role of psychological capital. *Journal of Management Education, 43*(1), 35-61. doi:10.1177/1052562918804282

Lyness, K. S., & Grotto, A. R. (2018). Women and leadership in the United States: Are we closing the gender gap? *Annual Review of Organizational Psychology and Organizational Behavior, 5,* 227-265. doi:10.1146/annurev-orgpsych-032117-104739

Lyness, K. S., & Thompson, D. E. (2000a). Perceived Barriers to Career Advancement Scales [Database record]. Retrieved from PsycTESTS. doi:10.1037/t08649-000

Lyness, K. S., & Thompson, D. E. (2000b). Climbing the corporate ladder: Do female and male executives follow the same route? *Journal of Applied Psychology, 85*(1), 86-101. doi:10.1037/0021-9010.85.1.86

Madsen, S. R., & Scribner, R. T. (2017). A perspective on gender in management: The need for strategic cross-cultural scholarship on women in management and leadership. *Cross Cultural & Strategic Management, 24*(2), 231-250. doi:10.1108/ccsm-05-2016-0101

Martin, A. E., & Phillips, K. W. (2017). What "blindness" to gender differences helps women see and do: Implications for confidence, agency, and action in male-dominated environments. *Organizational Behavior and Human Decision Processes, 142*, 28-44. doi:10.1016/j.obhdp.2017.07.004

McCaughey, D., McGhan, G., Savage, G., Landry, A., & Brooks, L. N. (2017). Gender stereotyping is alive and well: What are our students learning? *Journal of Health Administration Education, 34*(2), 257-275. Retrieved from https://ezp.waldenulibrary.org/login?url=https://search-proquest-com.ezp.waldenulibrary.org/docview/2097624052?accountid=14872

Meister, A., Sinclair, A., & Jehn, K. A. (2017). Identities under scrutiny: How women leaders navigate feeling misidentified at work. *The Leadership Quarterly, 28*(5), 672-690. doi:10.1016/j.leaqua.2017.01.009

Mölders, S., Brosi, P., Bekk, M., Spörrle, M., & Welpe, I. M. (2018). Support for quotas for women in leadership: The influence of gender stereotypes. *Human Resource Management, 57*(4), 869-882. doi:10.1002/hrm.21882

Paunova, M. (2015). The emergence of individual and collective leadership in task groups: A matter of achievement and ascription. *The Leadership Quarterly, 26*(6), 935-957. doi:10.1016/j.leaqua.2015.10.002

Prime, J. L., Carter, N. M., & Welbourne, T. M. (2009). Women" take care," men" take charge": Managers' stereotypic perceptions of women and men leaders. *The Psychologist-Manager Journal, 12*(1), 25-49. doi:10.1080/10887150802371799

Rice, L., & Barth, J. M. (2017). A tale of two gender roles: The effects of implicit and explicit gender role traditionalism and occupational stereotype on hiring decisions. *Gender Issues, 34*(1), 86-102. doi:10.1007/s12147-016-9175-4

Salisu, I., Hashim, N., Mashi, M. S., & Aliyu, H. G. (2020). Perseverance of effort and consistency of interest for entrepreneurial career success. *Journal of Entrepreneurship in Emerging Economies*. doi:10.1108/jeee-02-2019-0025

Schimschal, S. E., & Lomas, T. (2019). Gritty leaders: The impact of grit on positive leadership capacity. *Psychological Reports*, *122*(4), 1449-1470. doi:10.1177/0033294118785547

Seibert, S. E., Kraimer, M. L., Holtom, B. C., & Pierotti, A. J. (2013a). Career Satisfaction Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t28008-000

Seibert, S. E., Kraimer, M. L., Holtom, B. C., & Pierotti, A. J. (2013b). Even the best laid plans sometimes go askew: Career self-management processes, career shocks, and the decision to pursue graduate education. *Journal of Applied Psychology, 98*(1), 169-182. doi:10.1037/a0030882

Shockley, K. M., Ureksoy, H., Rodopman, O. B., Poteat, L. F., & Dullaghan, T. R. (2016a). Subjective Career Success Inventory. PsycTESTS. doi:10.1037/t57160-000

Shockley, K. M., Ureksoy, H., Rodopman, O. B., Poteat, L. F., & Dullaghan, T. R. (2016b). Development of a new scale to measure subjective career success: A mixed-methods study. *Journal of Organizational Behavior*, *37*(1), 128-153. doi:10.1002/job.2046

Sosik, J. J., Chun, J. U., Ete, Z., Arenas, F. J., & Scherer, J. A. (2019). Self-control puts character into action: Examining how leader character strengths and ethical leadership relate to leader outcomes. *Journal of Business Ethics*, *160*(3), 765-781. doi:10.1007/s10551-018-3908-0

Sriram, R., Glanzer, P. L., & Allen, C. C. (2018). What contributes to self-control and grit? The key factors in college students. *Journal of College Student Development, 59*(3), 259-273. doi:10.1353/csd.2018.0026

Stamarski, C. S., & Son Hing, L. S. (2015). Gender inequalities in the workplace: The effects of organizational structures, processes, practices, and decision makers' sexism. *Frontiers in Psychology, 6*, 1-20. doi:10.3389/fpsyg.2015.01400

Stewart, G. L., Courtright, S. H., & Manz, C. C. (2019). Self-leadership: A paradoxical core of organizational behavior. *Annual Review of Organizational Psychology and Organi*zational Behavior, *6*, 47-67. doi:10.1146/annurev-orgpsych-012218-015130

Sturman, E. D., & Zappala-Piemme, K. (2017a). Grit scale for children and adults [Database record]. Retrieved from PsycTESTS. doi:10.1037/t66604-000

Sturman, E. D., & Zappala-Piemme, K. (2017b). Development of the grit scale for children and adults and its relation to student efficacy, test anxiety, and academic performance. *Learning and Individual Differences, 59*, 1-10. doi:10.1016/j.lindif.2017.08.004

Templeton, K. (2016). Impact of gender on teaching evaluations of faculty: Another example of unconscious bias? *Journal of Women's Health, 25*, 420-421. doi:10.1089/jwh.2016.29008.kte

U.S. Bureau of Labor Statistics (2018a). Women in the laborforce: A databook 2018. Retrieved from https://www.bls.gov/opub/reports/womens-databook/2018/pdf/home.pdf

U.S. Bureau of Labor Statistics (2018b). Employed persons by detailed occupation, sex, race, and hispanic or latine ethnicity. Retrieved from https://www.bls.gov/cps/cpsaat11.htm

U.S. Bureau of Labor Statistics (2018c). Employed persons by detailed industry, sex, race, and occupation. Retrieved from https://www.bls.gov/cps/cpsaat17.htm

U.S. Bureau of Labor Statistics (2018d). Employed persons by detailed industry and age. Retrieved from https://www.bls.gov/cps/cpsaat18b.htm

Vardhan, J., & Mahato, M. (2019). A tale of determination and grit: The success of pink autos. *South Asian Journal of Business and Management Cases, 8*(2), 137-145. doi:10.1177/2277977919833763

Vazsonyi, A. T., Ksinan, A. J., Jiskrova, G. K., Mikuška, J., Javakhishvili, M., & Cui, G. (2019). To grit or not to grit, that is the question! *Journal of Research in Personality*, *78*, 215-226. doi:10.1016/j.jrp.2018.12.006

Walsh, K., Fleming, S. S., & Enz, C. A. (2016). Give and you shall receive: Investing in the careers of women professionals. *Career Development International*, *21*(2), 193-211. doi:10.1108/cdi-04-2015-0059

Watts, L. L., Frame, M. C., Moffett, R. G., Van Hein, J. L., & Hein, M. (2015). The relationship between gender, perceived career barriers, and occupational aspirations. *Journal of Applied Social Psychology*, *45*(1), 10-22. doi:10.1111/jasp.12271

Werner, K. M., Milyavskaya, M., Klimo, R., & Levine, S. L. (2019). Examining the unique and combined effects of grit, trait self-control, and conscientiousness in predicting motivation for academic goals: A commonality analysis. *Journal of Research in Personality*, *81*, 168-175. doi:10.31234/osf.io/wbgs8

Wille, B., Wiernik, B. M., Vergauwe, J., Vrijdags, A., & Trbovic, N. (2018). Personality characteristics of male and female executives: Distinct pathways to success? *Journal of Vocational Behavior*, *106*, 220-235. doi:10.1016/j.jvb.2018.02.005

Williams, M. J., & Tiedens, L. Z. (2016). The subtle suspension of backlash: A meta-analysis of penalties for women's implicit and explicit dominance behavior. *Psychological Bulletin*, *142*(2), 165-197. doi:10.1037/bul0000039

Wright, T. (2016). Women's experience of workplace interactions in male-dominated work: The intersections of gender, sexuality and occupational group. *Gender, Work & Organization*, *23*(3), 348-362. doi:10.1111/gwao.12074

Zell, E., Strickhouser, J. E., Lane, T. N., & Teeter, S. R. (2016). Mars, Venus, or Earth? Sexism and the exaggeration of psychological gender differences. *Sex Roles*, *75*(7-8), 287-300. doi:10.1007/s11199-016-0622-1

Zheng, W., Kark, R., & Meister, A. L. (2018). Paradox versus dilemma mindset: A theory of how women leaders navigate the tensions between agency and communion. *The Leadership Quarterly*, *29*(5), 584-596. doi:10.1016/j.leaqua.2018.04.001

Appendix A: Permission for Surveys

Cochran, J. K. (2016a). Self-Control Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t52547-000

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007a). Grit Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t07051-000

Jeong, S.-H., Kim, H., Yum, J.-Y., & Hwang, Y. (2016a). Self-Control Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t45563-000

Lyness, K. S., & Thompson, D. E. (2000). Perceived Barriers to Career Advancement Scales [Database record]. Retrieved from PsycTESTS. doi:10.1037/t08649-000

Seibert, S. E., Kraimer, M. L., Holtom, B. C., & Pierotti, A. J. (2013a). Career Satisfaction Scale [Database record]. Retrieved from PsycTESTS. doi:10.1037/t28008-000

Sturman, E. D., & Zappala-Piemme, K. (2017a). Grit Scale for Children and Adults [Database record]. Retrieved from PsycTESTS. doi:10.1037/t66604-000

Appendix B: Permission for Subjective Career Success Inventory (SCSI)

From: Heather Mitterer <[redacted]@waldenu.edu>
Sent: Saturday, September 28, 2019 8:44 PM
To: Kristen Michelle Shockley <[redacted]@uga.edu>
Subject: Subjective Career Success Inventory (SCSI) request

[External Sender]

Hello Dr. Shockley,

I am an Industrial and Organizational Psychology PhD student at Walden University. I am in the process of my dissertation research and would like to use the survey (Subjective Career Success Inventory (SCSI)) that you developed with in 2016. May I have your permission to use it for my research?

Thank you,
Heather Mitterer

From: Kristen Michelle Shockley <[redacted]@uga.edu>
Sent: Monday, September 30, 2019 9:36 AM
To: Heather Mitterer <[redacted]@waldenu.edu>
Subject: Re: Subjective Career Success Inventory (SCSI) request

Yes you have my permission

Kristen M. Shockley, Ph.D.
Associate Professor of Psychology
University of Georgia
Associate Editor, Journal of Business and Psychology

Appendix C: Demographic Information

Do you currently work in the United States Yes _____ No _____

Gender
_____Male
_____Female

Age
_____ 18-29
_____ 30-39
_____ 40-49
_____ 50-59
_____ 60 +

Race
_____African American/Black
_____Caucasian/White
_____American Indian
_____Asian
_____Native Hawaiian/ or other Pacific Islander
_____Hispanic
_____Other

Marital Status
_____Single (never married)
_____Married
_____Separated/Divorced
_____Widowed

Education Level
_____Less than high school
_____High School graduate
_____Some College, but no degree
_____Associate's degree
_____Bachelor's degree
_____Some postgraduate work
_____Master's degree
_____PhD, law, medical, or advanced degree

Current Title
_____Supervisor/Senior Team Lead
_____Manager or Senior Manager
_____Director
_____VP or Senior VP
_____CEO or President
_____C level executive (CIO, COO, CFO, Etc)
_____Partner/Shareholder/BOD
_____Other Leader in Organization

_____ Self-Employed/Owner

Years in Current Title _____Less than 1 year
_____1-3 years
_____4-7 years
_____8-11 years
_____12-15 years
_____more than 16 years

Industry _____Manufacturing
_____Architecture or Engineering
_____Computer or Mathematical
_____Other

Years in Industry _____Less than 1 year
_____1-3 years
_____4-7 years
_____8-11 years
_____12-15 years
_____more than 16 years

Sector _____Public
_____Private
_____NonProfit

Appendix D: Female Leadership Survey

This survey is an anonymous questionnaire to collect data for research and academic purposes. You will not be identified during the collection and analysis of the data gathered. Please do not include any identifiable information within the survey.

Please consider your overall career within the male-dominated environment when completing this survey.

Choose one of the following options that best describe your career situation and select your response in the area provided for each statement. Please be honest and answer with the result that best answers each question.

This section of the survey is used to assess behaviors and actions. For each of the following statements, please **select your level of agreement** according to the following scale: *1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree*						
1	I often act in the spur of the moment without stopping to think?	1	2	3	4	5
2	I don't devote much thought and effort to preparing for my future?	1	2	3	4	5
3	I often do whatever brings me pleasure here and now, even at the cost of some distant goal?	1	2	3	4	5
4	When I have a little extra money, I'm more likely to spend it on something I really don't need than to save it for the future?	1	2	3	4	5
5	When things get complicated, I tend to quit or withdraw?	1	2	3	4	5
6	Excitement and adventure are more important to me than peace and security?	1	2	3	4	5
7	I am not very sympathetic to other people; their problems are their responsibility?	1	2	3	4	5
8	I lose my temper pretty easily?	1	2	3	4	5
9	Often when I'm angry at other people, I feel like hurting them rather than talking to them about it?	1	2	3	4	5
10	When I have a serious disagreement with someone, it's usually hard for me to talk to them calmly about it without getting upset?	1	2	3	4	5
11	I can deliberately calm down when excited?	1	2	3	4	5
12	I can stick to what I am doing until I am finished with it?	1	2	3	4	5
13	I do not neglect regular tasks?	1	2	3	4	5
14	I always finish what I start?	1	2	3	4	5
15	I am not always motivated to do my best?	1	2	3	4	5
16	I always stick to the task I am working on until it is complete?	1	2	3	4	5

17	I always keep working for what I want even when I don't do as well as I would like to?	1	2	3	4	5
18	Sometimes I am not as focused on my work as I would like to be?	1	2	3	4	5
19	Challenges in my life sometimes make me want to stop trying?	1	2	3	4	5
20	I always pay attention to what I am working on to make sure I do it well?	1	2	3	4	5
21	I never give up even when things get tough?	1	2	3	4	5
22	I am able to get through tough times without difficulty?	1	2	3	4	5
This section of the survey is used to assess behaviors and actions. For each of the following statements, please **select your level of agreement** according to the following scale: *1= Very Much Like Me, 2= Mostly Like Me, 3= Somewhat Like Me, 4= Not Much Like Me, 5= Not Like Me At All*						
23	New ideas and projects sometimes distract me from previous ones?	1	2	3	4	5
24	My interests change from year to year?	1	2	3	4	5
25	I have been obsessed with a certain idea or project for a short time but later lost interest?	1	2	3	4	5
26	I often set a goal but later choose to pursue a different one?	1	2	3	4	5
27	I have difficulty maintaining my focus on projects that take more than a few months to complete?	1	2	3	4	5
28	I have overcome setbacks to conquer an important challenge?	1	2	3	4	5
29	I finish whatever I begin?	1	2	3	4	5
30	I have achieved a goal that took years of work?	1	2	3	4	5
31	I am diligent?	1	2	3	4	5
This section of the survey is used to assess leader emergence. For each of the following statements, **please indicate how satisfied you feel with each statement when you consider your career as a whole**, according to the following scale: *1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree*						
32	The rank or level to which I have been promoted?	1	2	3	4	5
33	The amount of influence I have in the organization?	1	2	3	4	5
34	The amount of authority I have over decision making in my company?	1	2	3	4	5
35	My current level of income?	1	2	3	4	5
36	The level of financial security I have achieved?	1	2	3	4	5
37	The skills I've developed in my functional/technical area?	1	2	3	4	5
38	The extent of knowledge, skills, and abilities I have developed?	1	2	3	4	5
39	The ability I have to choose the types of jobs I am interested in?	1	2	3	4	5
40	My level of employment security?	1	2	3	4	5

This section of the survey is used to assess leader emergence. For each of the following statements, **please indicate how satisfied you feel with each aspect of your career, given your age and amount of work experience**, according to the following scale: *1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree*						
41	Considering my career as a whole my supervisors have told me I do a good job?	1	2	3	4	5
42	... I have been recognized for my contributions?	1	2	3	4	5
43	... I am proud of the quality of the work I have produced?	1	2	3	4	5
44	... I have been known for the high quality of my work?	1	2	3	4	5
45	... I think my work has been meaningful?	1	2	3	4	5
46	... I believe my work has made a difference?	1	2	3	4	5
47	... decisions that I have made have impacted my organization?	1	2	3	4	5
48	... others have taken my advice into account when making important decisions?	1	2	3	4	5
49	... I have chosen my own career path?	1	2	3	4	5
50	... I have stayed current with changes in my field?	1	2	3	4	5
51	... I have continuously improved by developing my skill set?	1	2	3	4	5
52	... my career is personally satisfying?	1	2	3	4	5
53	... I am enthusiastic about my career?	1	2	3	4	5
This section of the survey is used to assess career emergence. For each of the following statements, please **indicate to what extent have the following been a problem in your career advancement within the organization**, according to the following scale: *1= No Problem At All, 2= Sometimes a Problem, 3= Neutral, 4= A Problem, 5= A Very Serious Problem*						
54	Feeling pressure to fit in or adapt to the culture?	1	2	3	4	5
55	Feeling like you are an outsider?	1	2	3	4	5
56	Not feeling comfortable asserting your views because of possible consequences?	1	2	3	4	5
57	Feeling that you can't make mistakes and learn from them without threatening your job or your future?	1	2	3	4	5
58	Feeling like you are held to a higher standard than others?	1	2	3	4	5
59	Being excluded from social events and informal interactions with colleagues, either on or off the job?	1	2	3	4	5
60	Limited access to informal networks?	1	2	3	4	5
61	Not enough mentoring (counseling about career opportunities)?	1	2	3	4	5
62	Not getting access to the right people (or not knowing the right people)?	1	2	3	4	5
63	Not receiving enough meaningful feedback about your strengths and weaknesses?	1	2	3	4	5
64	Poor career development and planning processes?	1	2	3	4	5

65	Being unsure about how to initiate a job change?	1	2	3	4	5
66	Lack of opportunities to move across functions or businesses?	1	2	3	4	5
67	Difficulty getting access to critical development assignments (serving on highly visible task forces or committees)?	1	2	3	4	5
68	Not being considered when promotions for bigger jobs arise?	1	2	3	4	5
69	Difficulty getting access to opportunities?	1	2	3	4	5
70	Difficulty getting access to job assignments with bottom line responsibility?	1	2	3	4	5

Appendix E: Survey Flyer

ARE YOU A FEMALE LEADER?

Female Leadership Study

Volunteers are needed for a study designed to learn more about female leadership in male-dominated work environments.

Qualifications to participate:

- 18 years of age or older
- A female currently in a leadership position
- Currently employed in manufacturing, computers, mathematics, engineering, or architecture
- Work in the public or private sector
- Work in the United States

Participation in the survey is:

- Anonymous
- Strictly voluntary
- There is no cost
- You can exit the survey at any time

To participate in the study, please visit:

https://www.surveymonkey.com/r/Y7QB2B5

For more details please email [redacted]@waldenu.edu

Appendix F: Survey Invitation

Female Leadership Study Participation Request

You are being asked to participate in an anonymous online survey about your experiences as a female leader in a male-dominated work environment. The purpose of this study is to assess behaviors of self-control and grit and the effect they have on a women's leadership emergence in a male-dominated environment.

This survey is being administered to females currently in a leadership position, working in the United States, 18 years of age or older, and working in the public or private sector. Female participants must currently work in one of the following male-dominated environments: manufacturing, computers, mathematics, engineering, or architecture. The anticipated number of completed responses needed for data analysis is 174 female leaders. This study is being conducted to complete the requirements for a Ph.D. dissertation research project through Walden University. Heather Mitterer, MS Industrial and Organizational Psychology is the primary researcher and is requesting your consideration and participation in this survey.

Participation in this survey is voluntary, there is no cost, and you may exit at any time. The survey will take approximately 20 minutes to complete.

To participate in the survey, please visit:
https://www.surveymonkey.com/r/Y7QB2B5

For more details please email [redacted]@waldenu.edu

Please forward this invitation to anyone you feel fits the criteria of this study population. Thank you!