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Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders' effectiveness?

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GENDER BIAS IN LEADERSHIP: DO GENDER OF LEADER, TYPE OF ERROR,
DIVERSITY CLIMATE, AND GENDER OF SUBORDINATE AFFECT FACULTY
PERCEPTIONS OF ACADEMIC LEADERS' EFFECTIVENESS?

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
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Doctor of Philosophy

in

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by

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ABSTRACT

The cyphers don't lie: women remain significantly underrepresented in positions of authority across the United States, despite their nearly equal representation in the labor force. Gender bias has been proposed as one of the major reasons for the disparity in leadership roles between men and women. Therefore, the primary purpose of this study was to investigate whether gender bias influenced faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders made mistakes, and how type of error, diversity climate, and gender of subordinate affected this relationship. Two scenarios were created based on real-life examples provided by academic leaders via interviews, and each scenario was led by either a male department director or a female department director, for a total of four test conditions: 1) relationship error committed by a female leader, 2) relationship error committed by a male leader, 3) task error committed by a female leader, and 4) task error committed by a male leader.

The study findings did not conform to the predictions formulated based on the literature review. Gender of leader was not found to significantly influence subordinate perceptions of leader effectiveness when mistakes were made (H1). Likewise, whether the error was task-oriented or relationship-oriented (H2), and whether the participant was male or female (H3) did not produce differential ratings of leader performance based on gender. Although diversity climate did significantly relate to perceptions of leader effectiveness, it did not interact with gender of leader, failing to support hypothesis 4. Explanations for these findings, as well as their implications and directions for future research are presented.

CHAPTER 1: INTRODUCTION

One can buy books, read articles, attend workshops on “women’s leadership”, yet one does not see products espousing “men’s leadership”. The word “leadership” has historically meant men’s leadership. The prefix was unnecessary because leaders were men. (McCullough, 2011, p. 7)

The glass ceiling effect is a reality; women are disproportionately underrepresented in senior level positions within organizations (Northhouse, 2013; O’Neil, Hopkins & Bilimoria, 2008).

According to the Bureau of Labor Statistics, by 2016 46.8% of the U.S. labor force was comprised of women (“Labor Force Statistics,” n.d.). As a comparison, in 2015 approximately 4.4% of CEO positions were held by women in Fortune 500 companies, a dip from the previous year (from 24 female CEOs in 2014 to 22 in 2015; Bellstrom, 2016). Similarly, among Standard & Poor’s (S&P) 500 companies, 45% of the labor force consisted of women, while only 19.2% women held board seats and a mere 4.0% held CEO positions in 2014 (Catalyst, 2016). This dearth of women in executive posts is a problem not only for women, given “that the most successful organizations will be the ones that continue to develop the talents and encourage the contributions of their female employees” (O’Neil et al., 2008, p. 727).

Academia does not fare much better than the general workforce, despite former president Barack Obama’s remarks that “there’s no place else that has the assets we do when it comes to higher education.” According to the American College President Study (2012) conducted by the American Council on Education, by 2012 a mere 26% universities in the U.S. had female presidents. Likewise, in 2013 female faculty in tenure-track positions reached approximately 48.4%, yet only 37.5% of women enjoyed tenure (Catalyst, 2015). Within the overall female academic population in 2013, nearly 32.5% were in less prestigious, non-tenured track positions, while only 19.6% of male faculty occupied such positions (Catalyst, 2015). Women who were full professors were also likely to earn 87.2% of what their male counterparts earned (Catalyst,

2015). These numbers, although less alarming than those of the general workforce, are still far from ideal.

Meanwhile, women accounted for 56% of the undergraduate population during the Fall 2014 semester (National Center for Education Statistics, 2016), indicating a mismatch between the number of women in the highest positions in academia and those at the undergraduate level. In other words, the numbers at the upper tiers of leadership in higher education do not reflect the numbers in its student body (Winchester & Browning, 2015). Given the multiple benefits of gender diversity in senior management, understanding the reasons for the gender gap in top leadership – both in academia and in the general workforce – should be a priority.

This chapter will 1) describe the potential benefits of gender diversity in organizations, 2) explain how gender bias manifests itself in the professional sphere, 3) introduce Eagly and Karau's (2002) role congruity theory, which served as the theoretical framework for the study, 4) describe the paucity in research on gender bias when leaders make mistakes, 5) define the purpose and hypotheses of the study, and 6) present the definitions of the study.

Background of the study

Organizations that include women in executive positions are more successful than those which do not (Catalyst, n.d.; O'Neil, Hopkins, & Bilimoria, 2008). Tight markets, stiff competition, the need for talented employees, globalization, and the push toward diversification all point to the benefits of having the best of the best – whether male or female – in key leadership positions (Adler, Brody, & Osland, 2000). As Thomas Falk, Chairman and CEO of Kimberly-Clark argues, “you have to wonder how long [companies] can be successful if they are only hiring from half of the talent available. It is not about equality or fairness, it's about winning” (Catalyst, n.d.a).

Gender diversity in senior leadership has been linked to multiple highly desirable outcomes. For example, greater diversity has been attributed to positive employee attitudes such as “openness to change, openness to others, openness to error and perceived person-environment fit” (Groggins & Ryan, 2013, p. 278), and a more favorable disposition toward diversity (Kossek & Zonia, 1993). It has also been linked to increased creativity and innovation (Barak, Cherin & Berkman, 1998; Eagly & Carli, 2007; Dworkin et al., 2012; Logan & Crump, 2007), diminished groupthink (Cox, 1994), and a greater variety of perspectives and ideas (Cox, 1994; Eagly & Carli, 2007; Erhardt, Werbel, & Shrader, 2003), which lead to more effective problem-solving (Catalyst, 2004; Cox, 1994), increased quality of decision-making (Harris & Leberman, 2011), and enhanced product value (Catalyst, 2004). Increased flexibility, which is often linked to improved organizational responses to change, has also been deemed an important organizational outcome (Cox, 1994). Organizations that embrace gender diversity also tend to have a wider pool of candidates to recruit from, as well as access to the best employees (Clarke, 2011; Cox, 1994; Eagly & Carli, 2007; Groggins & Ryan, 2013). In academia, increased female representation in the upper tiers (i.e. full professorship) may translate to a diminished pay gap between men and women at the assistant professor level (Lee & Won, 2014).

According to the United States Census Bureau, women accounted for 50.8% of the U.S. population in 2015 (“State and County Quickfacts,” n.d.). Companies that want to increase their access to and success with female markets are better equipped to do so if they enjoy greater representation of women in leadership positions (Cox, 1994; Eagly & Carli, 2007). As Eagly and Carli (2007) note, “organizations that serve women as clients, customers, and employees can have better relationships with these groups when women are among those who hold leadership

positions” (p. 192). Hence, increased gender diversity at the executive level enhances organizational competitiveness (Cox, 1994; Eagly & Carli, 2007).

Financial outcomes are also an important consequence of female executive leadership (Logan & Crump, 2007; O’Neil et al., 2008). Female representation in corporate boardrooms has been associated with greater return on investment (ROI), return on assets (ROA), and firm value (Erhardt et al., 2003). Similarly, increased female membership in top management teams (TMTs) of Fortune 500 companies has been linked to higher return on equity (ROE) and Total Return to Shareholder (TRS; Catalyst, 2004). In brief, gender diversity in senior positions may lead to improved organizational performance (Krishnan & Park, 2005). Nonetheless, despite these benefits, the glass ceiling persists. The U.S. Department of Labor (1991) defined the glass ceiling as “[...] those artificial barriers based on attitudinal or organizational biases that prevent qualified individuals from advancing upward in their organizations into managerial-level positions” (p. 1). Understanding why this phenomenon prevails given women’s near-equal representation in the labor force remains an important topic of investigation.

Gender bias and the gender gap

It is safe to say that women’s underrepresentation in senior leadership positions, including those in higher education, is no longer due to overt discrimination (Bonebright, Cottledge, & Lonnquist, 2012; Ely et al., 2012; Ibarra, 2013). Over the past decades, organizations have recognized the importance of female leadership and have undergone a conscious effort to provide leadership development opportunities for women (Clarke, 2011).

Rather, there are subtler forces at work preventing women from reaching the upper echelons of organizations. According to Ely, Ibarra and Kolb (2011), this phenomenon is known as “second-generation forms of gender bias” (p. 475) and is defined as “the powerful yet often

invisible barriers to women's advancement that arise from cultural beliefs about gender, as well as workplace structures, practices, and patterns of interaction that inadvertently favor men" (Ely et al., 2011). Ibarra, Ely and Kolb (2013) portray second-generation gender bias as "akin to 'something in the water'" (p. 64) that systematically prevents women from ascending the ranks. A meta-analysis conducted by Eagly, Karau, & Makhijani (1995) noted that, in general, performance effectiveness and leadership success did not differ by gender. In other words, women and men were equally effective in leadership positions. These findings raise the question, which is at the crux of the problem: if women are as effective at leading as their male counterparts, and if greater proportions of women in executive positions generally lead to favorable organizational outcomes, why are women still significantly underrepresented in senior leadership?

There is not one single answer that can effectively address this question (Eagly & Carli, 2007). Eagly and Carli (2007), for example, identify multiple factors that affect the gender distribution of the upper ranks, including family (i.e. domestic) responsibilities, gender discrimination, and organizational policies, practices and values that disfavor women (most often unknowingly). Of particular interest to this study is gender bias associated with leadership decision making, specifically the influence of decision making blunders on how subordinates perceive leader effectiveness.

Role congruity theory

The most prevalent theory explaining the dearth of women in decision-making roles is Eagly and Karau's (2002) role congruity theory. Role congruity theory is, in brief, "a theory of prejudice toward female leaders" (Eagly & Karau, 2002, p. 573). Essential to it are the notions of *communality* and *agency*; the former being more typically associated with women, and the

latter more commonly ascribed to men. Communal qualities have been described by Eagly (1987) as “the concern with the welfare of other people” (p. 16) where “caring and nurturant qualities predominate” (p. 16); while Eagly (1987) explains agency as “an assertive and controlling tendency” (p. 16), which is highlighted by “self-assertion, self-expansion, and the urge to master” (p. 16). Role congruity theory proposes that prejudice arises from the discrepancy between traditional beliefs about what constitutes effective leadership behavior – which is most often agentically-defined – and the stereotypic expectation of communal behavior credited to women (Eagly & Karau, 2002). In other words, the leader role is consistent with male agentic traits, and inconsistent with female communal traits, resulting in incompatibility of roles when women occupy leadership positions.

Central to role congruity theory is the notion that a) women are perceived as less capable of leading because they lack masculine characteristics commonly linked to successful leadership (Eagly & Karau, 2002), and b) female leaders who behave agentically are perceived as less effective because they violate traditional gender norms. As Eagly and Karau (2002) explain, women face a double threat: “conforming to their gender role would produce a failure to meet the requirements of their leader role, and conforming to their leader role would produce a failure to meet the requirements of their gender role” (p. 567). This challenging situation has been termed the double-bind, and often limits women’s ability to reach the top of the hierarchy (Eagly & Carli, 2007; Eagly & Karau, 2002).

There is evidence in the literature supporting role congruity theory. For example, Eagly, Makhijani, and Klonsky (1992) found that when leadership styles were predominantly masculine, men were significantly favored over women for leadership roles. In fact, women who behaved in a more dominant, autocratic style were particularly affected, while no such penalties

applied to men regardless of their leadership behavior (whether masculine or feminine; Eagly et al., 1992). They also found that, overall, “evaluations were less favorable for female leaders than for male leaders” (Eagly et al., 1992, p. 10). Similarly, Fuchs, Tamkins, Heilman, and Wallen (2004) noted that, despite equal assessments in terms of competence and achievement-orientation, female leaders were more disliked than male leaders. Even in non-traditional settings such as summer camps, a bias favoring male leaders and agentic characteristics was observed, given the association of camping with masculinity (Cousineau & Roth, 2012). Role congruity theory thus served as the conceptual foundation for the present investigation.

When leaders make mistakes

Gender bias in leadership has commonly been studied under conditions of success (e.g. Eagly et al., 1995; Eagly & Johnson, 1990; Eagly et al., 1992; Hunter, Tate, Dzieweczynski, & Cushenbery, 2010; Walker, Madera, & Hebl, 2013; Thoroughgood, Sawyer, & Hunter, 2012). That is, research has focused on differing judgments of effectiveness based on gender when male and female leaders perform their jobs optimally, with women often being perceived as less capable than men. However, few studies have actually addressed how gender prejudice affects perceptions of leader effectiveness when leaders make mistakes (Eubanks & Mumford, 2010; Thoroughgood, Sawyer, & Hunter, 2012). Given that mistakes are an inevitable part of leadership, it is important to understand the impact that leaders’ mistakes can have on those they lead (Thoroughgood et al., 2012).

For example, Brescoll, Dawson, and Uhlmann (2010) found that leaders in gender-incongruent occupations were especially affected by negative evaluations when committing one salient mistake. Female police chiefs and male women’s college presidents received lower

marks than male police chiefs and female women's college presidents. Brescoll et al. (2010) concluded that:

[...] The high status achieved by some men and women in gender-incongruent occupations can be unstable, vulnerable, and ultimately fragile. Though women and minorities have made progress in reaching high-status positions, the present research draws attention to an unsettling bias that may readily undermine these achievements. (p. 1642)

In other words, given that there are far fewer leadership roles of status and prestige defined as feminine, incongruity of jobs is far more likely to affect women than men (Eagly & Carli, 2007). Thus, perceptions of leader mistakes are potentially gendered, and understanding whether such biased perceptions occur and under which circumstances can provide important clues as to when – if at all – gender bias is most likely to manifest itself, and the degree to which it does.

Thoroughgood et al. (2012) conducted one of the few studies attempting to investigate subordinate perceptions of leadership errors. More specifically, they examined the interaction between type of errors, gender of leader, and occupational context. They found a significant interaction between organizational context and gender of leader, such that male leaders were judged more severely than female leaders when committing errors in a masculine context. No significant differences were found in perceptions of male and female leadership in a feminine context.

Diversity climate: The context matters

As the results of the Thoroughgood et al. (2012) study note, organizational context plays a role in the gender bias and leadership equation. The climate of diversity of an organization has been shown to influence attitudes and perceptions of employees towards the institution (Cox, 1994). Diversity climate has been defined as “the degree to which a firm advocates fair human resource policies and socially integrates underrepresented employees” (McKay, Avery, & Morris, 2008, p.

352). A strong pro-diversity climate is one in which the organization values and embraces employee differences (McKay et al., 2008).

Research has linked diversity climate to individual and organizational outcomes. For example, diversity climate has been associated with higher levels of organizational commitment and identification (Gonzalez & Denisi, 2009); “satisfaction with manager, career satisfaction and career future satisfaction,” (Hicks-Clarke & Iles, 2000, p. 341); job satisfaction (Hicks-Clarke & Iles, 2000); and customer satisfaction (McKay et al., 2011). Bottom-line results, such increased return on investment (ROI) and productivity (Gonzalez & Denisi, 2009), sales per hour (McKay et al., 2008), and mean sales growth (McKay et al., 2009) have also been reported.

Consequently, it has become increasingly important for organizations to manage diversity effectively in order to maximize the benefits that an increasingly diverse workforce entails (Cox, 1994; Mor Barak, Cherin, & Berkman, 1998). Subordinate perceptions of diversity climate were thus also accounted for in the present study to determine if and/or how they impact perceptions of leadership effectiveness.

Purpose of the study and study hypotheses

The primary purpose of this study was to investigate whether gender bias influenced faculty’s perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders made mistakes, and how type of error, diversity climate, and gender of subordinate affected this relationship.

The study tested the following hypotheses:

- Hypothesis 1: Women will be rated as less effective leaders than men.
- Hypothesis 2a: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit task errors will be rated as less effective than male leaders who commit task errors.

- Hypothesis 2b: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit relationship errors will be rated as less effective than male leaders who commit relationship errors.
- Hypothesis 3a: Male subordinates will rate female leaders significantly lower on effectiveness than male leaders.
- Hypothesis 3b: Male subordinates will rate female leaders significantly lower on effectiveness than female subordinates.
- Hypothesis 4a: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leaders' effectiveness when compared to male leaders.
- Hypothesis 4b: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leadership effectiveness, and positive perceptions of diversity climate will yield significantly higher perceptions of female leadership effectiveness.

Definitions

- **Leader**: “a person who exercises authority over other people” (Eagly & Carli, 2008, p. 8).
- **Leadership**: “a process whereby an individual influences a group of individuals to achieve a common goal” (Northouse, 2013, p. 5).
- **Stereotypes**: “cognitive shortcuts that influence the way people process information regarding groups and group members” (Northouse, 2013, p. 358).
- **Gender roles**: the “shared expectations (about appropriate qualities and behaviors) that apply to individuals on the basis of their socially identified gender” (Eagly, 1987, p. 12).
- **Gender bias**: Unequal treatment of individuals based on their sex (Eagly & Karau, 2002).

- **Agentic traits:** traits and characteristics typically ascribed to men (or viewed as male), such as independent, assertive, dominant, and assured (Eagly, 1987).
- **Communal traits:** traits and characteristics typically ascribed to women (or viewed as female), such as nurturing, compliant, kind, and thoughtful (Eagly, 1987).
- **Diversity climate:** “the degree to which a firm advocates fair human resource policies and socially integrates underrepresented employees” (McKay, Avery, & Morris, 2008, p. 352).
- **Errors:** an “individuals’ decisions and behaviors that (1) result in an undesirable gap between an expected and real state and (2) may lead to actual or potential negative consequences for organizational functioning that could have been avoided” (Zhao & Olivera 2006, p. 1013).
- **Task errors:** mistakes occurring while engaging in task-oriented duties (Eagly & Karau, 2002).
- **Relationship errors:** mistakes occurring while engaging in relationship-oriented duties (Eagly & Karau, 2002).

Conclusion

This first chapter has outlined the need for understanding gender bias in executive leadership given the current dearth of women in senior-level positions; described the ways in which gender diversity benefits individuals and organizations; introduced role congruity theory as the theoretical framework for the study; and presented the purpose and hypotheses of the study. Chapter II will outline a review of the literature on the topic of gender bias in leadership, the manifestation of gender bias in academia, and an explanation of the relevant variables in the study. Chapter III will provide an in-depth explanation of the research methodology, including

participant sample, instruments utilized, and statistical analysis selected. Chapter IV will describe the results obtained, while Chapter V will focus on discussing and explaining the results of the previous section, reviewing the implications of the study, and providing future direction for the investigation of gender bias in leadership.

CHAPTER 2: LITERATURE REVIEW

The present study examined the relationship between gender of leader and subordinate perceptions of leader effectiveness when mistakes were made, and how type of error, diversity climate, and gender of subordinate affected this relationship. The following review of the literature will cover issues of gender bias and diversity in the workplace; the conceptual framework for the study; the variables of interest; and the role of occupational context in gender bias. Based on this literature review, hypotheses of the expected relationships between variables will be presented.

Gender bias and gender diversity in the workplace

What is gender bias?

To understand gender bias, it is important to begin by examining prejudice, stereotypes, and gender roles. Eagly and Carli (2007) define prejudice as the “unfair evaluation of a group of people based on stereotypical judgments of the group rather than the behavior or qualifications of its individual members” (p. 818). Prejudice arises from a discrepancy between desirable social attributes and individuals belonging to groups that are stereotypically not expected to uphold such attributes (Eagly & Carli, 2003). Meanwhile, Northouse (2013) defines stereotypes as “cognitive shortcuts that influence the way people process information regarding groups and group members” (p. 358).

A basic illustration of how perceptions of leadership are affected by stereotypes comes from a popular riddle:

A man and his son were driving down the highway and had an accident. The man was killed instantly, and the son was rushed to the hospital in critical condition and prepared for surgery. The surgeon arrived and looked at the boy and said: "I can't operate; that is my son!" Who was the surgeon? (as cited in Top, 1991)

According to Top (1991) most people were unable to solve this riddle effectively. This provides a simple yet telling example of the lengths and depths of cognitive schemas, expected gender roles, and how these affect perceptions and beliefs about leadership. Gender bias in leadership has been reported in a wide array of fields, from the STEM careers (McCullough, 2011) to academia (Ballenger, 2010), and from traditional settings such as athletics (Biernat & Vescio, 2002) to non-traditional work contexts such as summer camps (Cousineau & Roth, 2012).

Furthermore, gender bias appears to be a relatively widespread phenomenon. Even though the degree of bias may vary by culture, there seems to be an overall global preference for or association of men as leaders. In a study conducted by Schein (2011), the link between “manager” and either women or men varied widely according to culture, with the U.S. having the most inclusive, egalitarian view out of the countries studied (i.e. Japan, China, Germany, the United Kingdom, and the United States). Despite the variability across cultures, Schein (2011) concluded that the findings “lend strong support to the view that “think manager–think male” is a global phenomenon, especially among males” (p. 683).

A moral and legal case for gender diversity

One of the main arguments in favor of ensuring equal representation of women in the upper executive tiers is moral duty (Cox, 1994; Eagly, 2007; Northhouse, 2013). Under the ethical viewpoint, women should be granted equal access to senior leadership positions because it is “the right thing to do” (Eagly & Carli, 2007, p. 188). In an era of equal opportunity, where values of fairness, equality, and justice are espoused, the direct or indirect, purposeful or accidental exclusion of women from the higher echelons of leadership is in direct violation of

ethical principles (Eagly & Carli, 2007). Increasing female representation is a way to reconcile such values with organizational practices.

Of greater importance to some organizations, however, are the significant legal repercussions that the unequal representation of gender in leadership can entail (Cox, 1994; Eagly, 2007; Northhouse, 2013). As Cox (1994) describes:

The Civil Rights Act of 1964 (as amended in 1972), the Pregnancy Discrimination Act of 1978, the Age Discrimination Act of 1967, and the Americans with Disabilities Act of 1990 (ADA) collectively outlaw discrimination on the basis of sex, color, race, religion, pregnancy, national origin, age, or physical ability. (p. 12)

Thus, organizations may face years of litigation and costly sanctions due to covert or outright sexism. Today's policies, procedures, structures, and so on often belong to an era when men predominated in the workplace, and are therefore based on male models (Ely, 2011; Longman & Lafreniere, 2012). These outdated policies are potentially vulnerable to legal action.

One of the most notorious legal cases highlighting the impact of sex discrimination in the workplace is Price Waterhouse vs. Hopkins (1989). Ann Hopkins, an employee at the prestigious accounting firm Price Waterhouse, successfully sued her employer after alleging that she was denied partnership at the firm due to sex discrimination and gender stereotyping (Price Waterhouse vs. Hopkins, 1989). Hopkins was able to effectively convince the court that she had been overlooked for a promotion on the basis of her gender. According to the prosecution, in spite of an exceptional performance record, which outshone those of her male counterparts (Eagly & Carli, 2007), Hopkins' masculine, aggressive style was seen as counter to expected gender roles and behaviors for women (Price Waterhouse vs. Hopkins, 1989).

Academia has not been exempt from legal battles involving differential treatment based on gender. In Miller vs. Texas Tech (2000), for example, Lucinda Miller sued her employer, the Texas Tech Health Sciences Center, for unequal pay and gender discrimination (AAUW

Educational Foundation and AAUW Legal Advocacy Fund, 2004). She and a female co-worker alleged they were both denied tenure in favor of a male colleague, despite their stronger performance records. Similarly, Carol Steipen was denied tenure at Case Western Reserve University, and took matters to court (AAUW Educational Foundation and AAUW Legal Advocacy Fund, 2004). Her supporters argued that she was discriminated against because she failed to display stereotypically female behaviors, such as warmth, instead acting in a more agentic, male style.

These cases stand as a reminder to organizations of the legal consequences of gender prejudice and discrimination in the workplace. Furthermore, beyond the expenses in both time and money associated with lengthy litigations, an organization involved in a legal battle can lose prestige and standing in the community (Eagly & Carli, 2007). Organizations are thus strongly advised to ensure that their organizational policies and practices are egalitarian, fair, and sensitive to diversity issues.

Conceptual framework

Individuals tend to automatically – and mostly unconsciously – group others into categories (Eagly & Carli, 2007). Characteristics such as gender, race, and country of origin are common examples of traits used to classify individuals (Eagly & Carli, 2007). Based on these classifications, behavioral expectations are formed for people belonging to specific groups (Eagly & Carli, 2007). These concepts serve as the foundation for Eagly's (1987) social role theory.

Social role theory

Eagly (1987) defines gender roles as the “shared expectations (about appropriate qualities and behaviors) that apply to individuals on the basis of their socially identified gender” (p. 12).

These shared beliefs about suitable characteristics and conduct based on gender define assumptions about how women and men should act (Eagly, 1987). Gender bias occurs when individuals are treated unequally based on these expectations (Eagly, 1987). In a nutshell:

The social-role theory of sex differences promotes a view of social life as fundamentally gendered, given current social arrangements. Women and men are subjected to somewhat different expectations, to which they conform to some degree, and they develop somewhat different skills as well as attitudes and beliefs. As a result, women tend to carry out social interaction somewhat differently than men do. (Eagly, 1987, p. 31)

Agentic and *communal* characteristics are the most commonly used dimensions to classify men's and women's expected behaviors (Eagly, 1987; Eagly et al, 1995, Eagly & Carli, 2007). Men are typically described as agentic, while women are most often seen as communal (Eagly 1987; Eagly & Carli, 2007). "Aggressive, ambitious, dominant, forceful, independent, self-sufficient, and prone to act as a leader" (Eagly & Karau, 2002, p. 574) are traits and behaviors typically ascribed to men, while "affectionate, helpful, kind, sympathetic, interpersonally sensitive, nurturant, and gentle" (Eagly & Karau, 2002, p. 574) are adjectives commonly used to describe women.

Although intra-categorical differences exist, men are generally expected to gravitate toward agency and women toward community (Eagly, 1987). Central to social role theory is the idea that these diverging expectations emerge from the roles typically carried out by men and women in society (Eagly, 1987). These traditional roles lead individuals to behave, consciously or unconsciously, in a stereotypical fashion (Eagly, 1987). Wood and Eagly (2002) point out that women's lack of power and status first arose from the interaction between inherent biological traits and constraints, and societal roles required to carry on daily activities. For example, women's childrearing duties interfered with occupations that could provide economic gain, thus

relegating women to positions of lower status. They dubbed this occurrence the biosocial origin theory (Wood & Eagly, 2002).

These deeply ingrained gender roles permeate, or “spill over” to organizational roles in a phenomenon known as the “spillover effect” (Eagly, Johannesen-Schmidt, and van Engen, 2003; Eagly & Johnson, 1990; Eagly, Karau, and Makhijani, 1995). This spillover results in gendered expectations of male and female professional behavior, as well as perceptions of who can (and who cannot) be an effective leader:

What results from [a] mismatch between a group stereotype (e.g., women) and a job role (e.g., manager) is negative performance expectations, which in turn produce biased evaluations. And because individuals are commonly assimilated to group stereotypes, this evaluative penalty is exacted even from women who do not possess the qualities that are stereotypical of their group but do possess those regarded as necessary for success in the job role. (Heilman & Eagly, 2008, p. 394)

Role congruity theory

The discrepancy between the expectations of successful leader behavior and gender roles is a significant driver of gender bias in the workplace (Eagly, 1987; Heilman & Eagly, 2008).

Organizations commonly equate “ideal” leadership traits with stereotypical male behaviors such as assertiveness, autonomy, competition, dominance and decisiveness, among others (Clarke et al., 2011; Cook & Glass, 2014; Ely et al., 2011; Hornsby et al., 2012; Vinnicombe & Singh, 2003). Women, who are associated with more pro-social and caregiving behaviors, including compromising and nurturing, may be seen as failing to possess qualities crucial to effective leadership (Clarke et al., 2011; Heilman & Eagly, 2008; Vinnicombe & Singh, 2003). Ibarra et al. (2013) describe how “practices that equate leadership with behaviors considered more common in men suggest that women are simply not cut out to be leaders” (p. 63). Therefore, women are often seen as ill-equipped to become senior executives. This discrepancy between

traditional leadership traits and expected female behavior is at the heart of Eagly & Karau's (2002) role congruity theory.

Classification of agentic leadership traits as male appears to occur early on in the cognitive process (Scott and Brown, 2006). In a study conducted by Scott and Brown (2006), participating students were shown behavioral phrases related to leadership that were attributed to either a man or a woman, and were then paired with "either a word or nonword" (p. 234). Their reaction time for recognizing words and nonwords was fastest when the gender of the leader following the phrase was male (Scott & Brown, 2006). These findings suggest that individuals more readily recognize and associate agentic leadership with men than women, although no gender differences were found for communal traits (Scott & Brown, 2006). Scott and Brown (2006) "suggest that gender bias in leadership may emerge quite early on during information processing" (p. 238).

It is important to note, however, that according to role congruity theory, "the double standard reverses directions in feminine domains [...]" (Eagly & Carli, 2007, p. 113). Thus, in theory, men can also be negatively affected by stereotypes and be considered inadequate for traditionally feminine jobs. This does not usually happen in practice, since many female-dominated careers are often of lower prestige, lower pay, and are thus seldom sought by men (Eagly & Carli, 2007; Heilman & Eagly, 2008). Furthermore, men are less likely to face negative stereotypes related to role incongruity because commonly accepted leadership traits are already viewed as inherently masculine (Eagly & Carli, 2003).

Another caveat of role congruity theory is that not all leadership roles are the same. In general, the higher the position, the more masculine it is regraded (Eagly & Carli, 2007). Thus, women may be particularly hard hit by the by the incongruity of roles at the top tiers of

leadership (Martell, Parker, Emrich and Crawford, 1998). Maranto and Griffin (2011) uncovered a similar pattern in academia revealing that the higher the position within the academic institution, the higher the level of discrimination women came across. Given the greater hostility they face at the upper echelons, women in leadership roles must excel beyond equally competent men to be well-regarded (Eagly & Carli, 2007).

The degree of conflict women encounter in executive leadership, nevertheless, is contingent upon the degree of agency associated with a position, such that male-oriented (i.e. agentic) decision-making roles will pose greater challenges for women than roles which are viewed as more female-oriented (i.e. communal; Eagly & Karau, 2002). In the words of Schein (2001): “If the managerial position is viewed as a “masculine” one, then, all else being equal, a male candidate appears more qualified by virtue of such sex typing of the position than a female candidate” (Schein, 2001, p. 676). Supporting such claims, Hebl (1995) found that men were more commonly appointed to leadership positions for task-oriented jobs, while no significant differences between male and female leaders was found for communally-oriented jobs.

Similarly, a job’s “stereotypicality” also influences perceptions of leadership effectiveness (Bowen, Swim and Jacob, 2000). Stereotypicality refers to the apparent degree of femininity or masculinity of a job (Bowen et al., 2000). A meta-analysis conducted by Bowen et al. (2000) did not find significantly different performance appraisal ratings based on gender. After closer inspection, the authors noted that women were rated higher in feminine tasks, men were rated higher in masculine tasks, and both genders were rated equally in neutral tasks, thus canceling each other out (and leading to non-significant results). They attributed these results to job stereotyping.

Furthermore, male and female leaders' successes and failures are ascribed to different causes (Sandler & Hall, 1986; Swim & Sanna, 1996). When men are successful, their accomplishment is credited to personal characteristics "such as ability and competence" (Sandler & Hall, 1986, p. 6), while women's achievement is ascribed to external influences, including support from peers and luck (Sandler & Hall, 1986; Swim & Sanna, 1996). Swim and Sanna (1996) also found that, for masculine tasks, external factors (i.e. bad luck and poor effort) were offered as explanations for male leaders' failures, while factors pertaining to ability and skill (i.e. task difficulty) were credited for female leaders' failure. These studies shed light on the differential treatment of leaders' achievements and mistakes on the basis of gender.

Cultural limitations of role congruity theory

Curseu and Boros (2008) warn that a potential limitation of role congruity theory is its generalizability to non-western cultures. For example, a study conducted utilizing a Romanian sample found that participants chose to hire a male manager over a female manager despite their resumes being identical. Surprisingly, men were rated as higher in both task *and* relationship skills (Curseu and Boros, 2008). Curseu and Boros (2008) attribute this to a traditional Romanian culture where men are regarded as better managers (and leaders) than women regardless of the skill in question. Even more unexpected, female participants displayed greater preference for male managers than male participants, thus suggesting that the manifestation of gender bias may differ according to culture and is often complex. It is important to keep in mind that there may be differences in how Western and non-Western cultures perceive and react to gender bias.

The double-bind

Women who strive to confront and overcome stereotypes at the upper level often face a major problem: the double bind. As Ely et al. (2011) report:

The mismatch between qualities attributed to women and qualities thought necessary for leadership places women leaders in a double bind and subjects them to a double standard. Women in positions of authority are thought too aggressive or not aggressive enough, and what appears assertive, self-confident, or entrepreneurial in a man often looks abrasive, arrogant, or self-promoting in a woman. (p. 477)

Women therefore find themselves in an uncompromising position of being either too feminine or too masculine (Ely et al., 2011; Vanderbroeck, 2009). They have to choose between behaving agentically and being perceived as effective but disliked, or acting communally and being seen as ineffective but well-liked (Eagly & Karau, 2002; Eagly & Carli, 2003). Supporting the double-bind, Eagly et al., (1992) found that the greatest difference favoring men over women in leadership roles occurred when leadership styles were predominantly masculine. Women were particularly affected when they behaved in a more dominant, autocratic style yet no such penalties applied to men regardless of their leadership behavior (whether masculine or feminine; Eagly et al., 1992). Eagly et al. (1992) note that “as a consequence of the consensual belief that men have a right to lead, they may enjoy greater latitude to carry out leadership in a variety of masculine or feminine styles” (Eagly et al., 1992, p. 5-6). Thus, while women may be penalized for agentic behavior, men are free to choose the degree of agency or communality they display without consequence.

In a study conducted by Fuchs et al. (2004), when explicit information about the success of both female and male leaders was provided, there was no difference in the ratings of male and female leaders’ perceived competence and achievement-orientation. However, participants reported a greater dislike for female leaders than their male counterparts. This finding adds

support to the notion of the double bind where, despite success, women may still be penalized for infringing on traditionally “masculine” – i.e. leadership – domains, thus hampering upward mobility (Fuchs et al., 2004).

Based the evidence presented thus far, the first hypothesis of this study is as follows:

Hypothesis 1: Women will be rated as less effective leaders than men.

Gender bias in academia

The gender gap at the highest positions within organizations extends to academia. As Maranto and Griffin (2011) remark, academia is still considered by some to be a male domain. Carnes et al. (2014), for example, found that there was a tendency for faculty members to view men as leaders and women as followers/subordinates. The higher one climbs the academic ladder, the larger this disparity, or bias, becomes (Monroe, Ozyurt, Wrigley, & Alexander, 2008; Winchester & Browning, 2015). To make matters worse, in higher education “positions with higher status, power, and remuneration are generally dominated by males.” (Monroe et al., 2008, p. 216), mimicking the trend in other professional spheres, with the problem being particularly acute in the STEM professions (McCullough, 2011). Even in Nordic countries (i.e. Finland and Sweden) where egalitarianism is a premium, women hold positions with lower pay and lower prestige (Mayer & Tikka, 2008).

In the United States the nature of faculty assignments, with tenure as the ultimate accomplishment, lends itself to unequal opportunities for men and women. Tenure has been defined by the AAUW Educational Foundation and the AAUW Legal Advocacy Fund (2004) as “a promise of lifetime employment awarded to scholars who demonstrate excellence in scholarship, teaching, and service” (p. 2). Tenure signifies recognition by fellow peers of an individual’s academic worth and is synonymous to status and prestige (AAUW Educational

Foundation and the AAUW Legal Advocacy Fund, 2004). Perhaps more importantly, tenure – with few exceptions – translates to permanent job security (AAUW Educational Foundation and the AAUW Legal Advocacy Fund, 2004).

Faculty members (i.e. assistant professors) who have not yet achieved tenure find themselves in a precarious situation (Mayer & Tikka, 2008). If not attained, they are forced to seek employment elsewhere (Mayer & Tikka, 2008). Thus, achieving tenure becomes a highly coveted endeavor. Studies have found that women are less likely to receive tenure than men (Lee & Won, 2014), and are more likely to hold assistant professor (non-tenured) positions instead of associate or full professorships (tenured positions; Mayer & Tikka, 2008). Female faculty are also less likely to occupy the highest departmental positions (Sandler & Hall, 1986). Thus, women who wish to pursue academia as a profession are at a disadvantage, given their diminished likelihood of achieving tenure and greater probability of obtaining roles of lower status than male faculty members in higher education.

Even when women do occupy top levels in academia, they still face obstacles that hinder their professional development and reputation as leaders. In a qualitative study conducted by Monroe, Ozyurt, Wrigley, and Alexander (2008), women complained of the devaluation of professional roles, such that when women held important leadership positions, the worth of these was reduced to “service” jobs. These same positions, on the other hand, would be regarded as powerful and influential when occupied by men. Women also complained of having greater service and teaching responsibilities when compared to their male counterparts – tasks that are often less remunerated and rewarded than research, the latter which men are more likely to engage in (Monroe et al., 2008). Monroe et al. (2008) further mention that compensation in the form of grants was often heavily skewed toward the physical sciences, which are still male-dominated,

over the humanities and social sciences, where women tend to excel (Monroe et al., 2008). These differentiations only serve to increase gender disparity, particularly as one climbs the hierarchical ladder. Thus, even in the upper tiers, women still face additional hurdles not met by their male peers.

Investigating gender bias: The Goldberg paradigm

One of the most well-known and most effective methods for studying gender bias is the Goldberg paradigm. In 1968, Phillip Goldberg conducted a groundbreaking experiment to examine whether women displayed bias against their own gender. Goldberg showed female participants a set of articles from different professional fields and changed only one condition: the name of the author. Each article was professedly penned by either John T. McKay or Joan T. McKay. Although effect sizes were small (Swim et al., 1989), Goldberg (1968) found that women gave better ratings to articles written by John McKay, a finding that was especially notable in male-dominated fields. Nonetheless, even in female-oriented contexts, articles written by John McKay received superior ratings to those written by Joan McKay. Goldberg's (1968) study design became – and still is – one of the most prevalent, effective ways of studying gender bias.

Goldberg paradigm studies have many advantages. Perhaps one of the most notable is its ability to hold extraneous variables constant (Eagly & Karau, 2002). By holding potential variables other than gender constant – and thus establishing equivalence between men and women – it becomes possible to ascertain differences in perceptions that are based on gender, rather than on some other unknown factor(s), with greater precision (Eagly & Carli, 2007; Eagly & Karau, 2002). Goldberg paradigm studies have also been deemed true experimental designs (Eagly, Makhijani & Klonsky, 1992) that help establish causation (Eagly & Carli, 2007), and

increase the internal validity of the study (Eagly & Carli, 2003). Given its recognizable strengths, the present study drew on the Goldberg paradigm to assess gender bias in higher education's top leadership.

Despite these considerable benefits, the Goldberg paradigm also has potential limitations, with the most obvious appearing to be the generalizability of studies that utilize it. Members of an organization are more likely to be better acquainted with the leader being rated and should thus be able to offer a more honest valuation of their leadership than participants in controlled settings (Eagly & Johnson, 1990). Furthermore, the use of scenarios and vignettes has been criticized as unrealistic, failing to capture real-world experiences (Eagly & Johnson, 1990). Eagly and Johnson (1990) found that sex differences between male and female leaders were more pronounced in laboratory studies than in actual organizational studies. On the other hand, a meta-analysis by Eagly et al., (1992) concluded that in experimental studies utilizing Goldberg Paradigm scenarios, differences between men and women were not as marked because people under experimental conditions knew they were being scrutinized and tried to present themselves as fair and equitable. Thus, the relationship between Goldberg paradigm design studies and over or under reporting of significance is not clear.

Lastly, Swim et al. (1989) argue that Goldberg's (1968) classic study and subsequent replications do not yield sufficient evidence attesting to gender bias when identical behavior is presented to study participants. Swim et al. (1989) is clear to point out, nonetheless, that this lack of empirical support for Goldberg-paradigm-style studies does not negate the existence of gender bias, concluding "that people's evaluations of men and women are a complex function of a set of factors that influence the process of gender stereotyping" (p. 423). Notwithstanding

these potential limitations, a great number of studies have employed the Goldberg paradigm to investigate bias, including Thoroughgood et al. (2012).

Thoroughgood et al.'s (2012) study

Thoroughgood et al. (2012) recruited a sample of undergraduate students from a northeastern university to test whether leadership errors affected subordinate perceptions of leaders' competence (measured as task/relationship competence, desire to work for the leader, and effectiveness of the leader), and whether the type of mistake (task versus relationship errors), gender of the leader, and occupational context (male versus female context) had any influence on these perceptions. To test their hypotheses, a string of fictional email communications (i.e. scenarios) between a purported member of the HR department and a subordinate of the leader were created. The emails varied only in terms of the independent variables of interest (type of error, occupational context, and gender of leader). Hunter et al.'s (2011) error classification was utilized to create the error conditions in the scenarios.

The researchers found that task errors led to reduced perceptions of task ability and desirability to work for the leader, while relationship errors resulted in diminished perceptions of relationship capabilities and decreases in desire to work for the leader. Furthermore, men were judged as "less task and relationship competent, [and] less desirable to work for" (Thoroughgood et al., 2012, p. 31) than women in the presence of mistakes when the context was masculine (i.e. construction). However, no significant differences were found between ratings of male and female leaders' task and/or relationship competence nor in the desirability to work for the leader when errors occurred in the feminine domain (i.e. nursing). The two-way interaction between type of error and gender of leader, and the three-way interaction between type of error, gender of

leader, and occupational context were also nonsignificant. Thoroughgood et al. (2012) attributes this lack of significance to ill-defined errors chosen for the scenarios.

Notwithstanding its strengths, Thoroughgood et al.'s (2012) study presented several limitations. For example, other potentially influential variables, such as the department's diversity climate, were not considered. Furthermore, the study utilized a sample of undergraduate students, nearly three-fourths female (although the authors did attempt to correct for this limitation by adding gender of participant as a covariate), which may have affected the generalizability of results. Thoroughgood et al. (2012) also argued for the need to test actual – rather than fictitious – organizational errors. These potential limitations warranted additional inquiry as to whether, and how, gender bias affects perceptions of leadership effectiveness when leaders commit errors. The present study attempted to address these limitations and expand upon Thoroughgood et al.'s (2012) original conceptualization by seeking to find how diversity climate and gender of subordinate, in addition to type of error, affected subordinate perceptions of leaders' effectiveness amongst professionals (i.e. faculty members in academia).

Factors influencing the relationship between gender and perceptions of leadership effectiveness

Type of error

Zhao and Olivera (2006) defined errors “as individuals’ decisions and behaviors that (1) result in an undesirable gap between an expected and real state and (2) [which] may lead to actual or potential negative consequences for organizational functioning that could have been avoided.” (p. 1013). Errors appear to originate from “variables operating at multiple levels of analysis” (Hunter et al., 2011, p. 14) and may be considered domain-specific (Hunter et al., 2011). Error taxonomies may thus differ according to professions, situations, and so on (Hunter et al., 2011). Hunter et al. (2011) further note that, in some cases, errors can lead to positive consequences in

the long run. For the purposes of this study, Hunter et al.'s (2011) taxonomy – the same which was utilized by Thoroughgood et al. (2012) – was employed.

Based on Hunter et al.'s (2011) taxonomy, which was derived from Fleishman et al. (1991), errors can be divided into four major categories: 1) “information search and structuring” (Thoroughgood et al., 2012; p. 4), 2) “information use in problem solving” (Thoroughgood et al., 2012; p. 4), 3) “managing material resources” (Thoroughgood et al., 2012; p.4), and 4) “managing personnel resources” (Thoroughgood et al., 2012; p. 4). The first three encompass task-related mistakes, while the fourth contains relationship-based mistakes (Thoroughgood et al., 2012). As a result, scenarios for the current study will be divided into two major categories: task errors and relationship errors. Since errors tend to be classified as either concerning tasks or relationships, and since men and women tend to be classified as agentic (task-focused) or communal (relationship-focused), it is likely that type of error interacts with gender of leader to affect perceptions of leader effectiveness.

Women appear to get shortchanged when it comes to leadership errors. A study conducted by Brescoll et al. (2010) found that women who made mistakes in gender-incongruent occupations were rated more harshly than their male counterparts. That is, when female leaders were successful in more traditional male occupations, they were viewed as equally efficacious, yet when mistakes were made, they were considered less competent than men (Brescoll et al., 2010). Although men were also negatively affected, seeing as they received lower effectiveness ratings than women in gender-incongruent occupations (i.e. women's college president), Eagly and Carli, (2007) note that there are much fewer female jobs considered to be of high prestige and status. Thus even though, in theory, incongruity of roles may affect both men and women, in practice, women are more likely to be affected by gendered perceptions in the presence of

mistakes. Eagly and Carli (2007) agree, stating that for female leaders, “any imperfections become magnified” (p. 113). Thus, errors by female leaders are likely to be more salient than errors by men given their propensity to be under greater scrutiny.

Despite Thoroughgood et al.’s findings (2012) that men – but not women – were judged more severely when leaders made mistakes in traditional male domains, Hetrick, Cushenbery, Fairchild and Hunter’s (2013) study concluded that women were at a disadvantage in error situations. Hetrick et al. (2012) found that female leaders are much more likely to apologize for their mistakes than men (with men being more likely to justify these). They also found that apologizing, rather than justifying, mistakes can be detrimental to the leader. Thus, a female leader may unknowingly engage in behaviors that place them at a disadvantage (i.e. apologizing) which in turn reduce perceptions of their leadership competence as compared to men.

Similarly, Scott and Brown (2006) explain that “bias against female leaders should arise because the content of the female gender stereotype, which is communal, is inconsistent with the leadership prototype, which is largely agentic” (p. 233). They further propose that the closer the resemblance of a particular leader to the prototype, the less likely mistakes will be attributed to them. Thus, in line with role congruity theory, given that men that are closest to the leadership prototype and women are farthest from it, it is fair to assume that women are more negatively affected by mistakes than men. The belief that “good leaders never err” may thus translate to men being less likely than women to suffer the consequences of errors. Therefore:

Hypothesis 2a: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit task errors will be rated as less effective than male leaders who commit task errors.

Hypothesis 2b: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit relationship errors will be rated as less effective than male leaders who commit relationship errors.

Gender of subordinate

Findings regarding whether perceptions of male and female leadership vary according to subordinates' gender have been varied. Studies have found no difference between male and female participants' ratings of leadership effectiveness based on gender (Bass & Riggio, 2006; Fuchs et al., 2004; Swim et al., 1989), greater male bias against female leadership (Eagly et al., 1995), greater female bias toward female leaders (Eagly et al., 1992), and even mixed findings (Bowen et al., 2002). Bowen et al. (2002), for example, found that in male-only rater groups, men received higher marks on performance appraisals than their female counterparts. However, in the presence of both male and female raters, the opposite occurred and women received higher scores. In a meta-analysis conducted by Eagly et al. (1995), the gap in ratings of leadership effectiveness increased in favor of men as the proportion of male raters increased. Moreover, while women rated male and female leaders equally, men showed a consistent preference for male leaders (Eagly et al., 1995). Only one study reviewed found that, in some cases, female leaders received lower ratings from female rather than male subordinates (Eagly et al., 1992). Despite these mixed findings, Eagly and Carli (2007) argue that “men, who currently hold most positions of power and authority, generally find female agency and leadership more objectionable than women do” (p. 821). Consequently:

Hypothesis 3a: Male subordinates will rate female leaders significantly lower on effectiveness than male leaders.

Hypothesis 3b: Male subordinates will rate female leaders significantly lower on effectiveness than female subordinates.

Diversity climate

The current labor force is more diverse than it was in the past – a trend that will persist into the future (Mor Barak et al., 1998; Population Reference Bureau, 2008) – and diversity climate

has been described as a tool organizations can use to benefit from a diverse workforce (Ehrhart, Schneider, & Macey, 2014; Schneider, Ehrhart, & Macey, 2013). A climate of diversity has been associated with enhanced competitiveness (Cox, 1994), given that diversity improves an organization's flexibility, adaptability, and its ability to change (Cox, 1994; Groggins & Ryan, 2013). Organizations that are more open to diversity are also more likely to attract (Cox, 1994) and retain (Cox, 1994; Groggins & Ryan, 2013) the best employees. In a qualitative study conducted by Groggins and Ryan (2013), "openness to change, openness to others, [and] openness to error" (p. 264), as well as the "development of interpersonal competence" (p. 272) were cited as key aspects of organizations characterized by a strong diversity climate. Furthermore, Groggins and Ryan (2013) found that, surprisingly, a strong diversity culture could actually enhance group cohesiveness, contrary to other reports in the literature (Cox, 1994).

Research has also uncovered positive organizational outcomes (Dwyer et al., 2003) and bottom-line implications for organizations that support a pro-diversity climate (McKay et al., 2008). Significant increases in sales per hour have been noted among African American store employees (McKay et al., 2008), as well as sales growth for store units with positive diversity climates (McKay, Avery and Morris, 2009). McKay, Avery, Liao and Morris (2011) similarly found that customer satisfaction was positively linked to a pro-diversity climate, and that the relationship between diversity climate and customer satisfaction was strengthened by increasing minority employee numbers. Dwyer et al. (2003) reported a surge in productivity for organizations that were gender-heterogeneous and growth-oriented (Dwyer et al., 2003), while Kossek and Zonia (1993) found that gender diversity was positively associated with attitudes toward diversity climate and perceptions of women's professional skills and abilities across members of different gender and racioethnic groups. Gonzalez and Denisi (2009) further noted

decreased turnover intentions among female members of a heterogeneous workforce when a climate of diversity moderated the relationship (Gonzalez & DeNisi, 2009).

Academia also benefits from diverse climates. Maranto and Griffin (2011) found that, in academic departments with greater female representation, women felt less excluded. Likewise, in departments rated higher on procedural fairness and gender equity, both male and female faculty reported lower feelings of exclusion. These results were unexpected yet positive, given that the department's climate affected not only women's feelings of exclusion, but also men's. Thus, men can also benefit from climates that are perceived as fair. Overall, however, women still reported greater feelings of exclusion than men. Reducing such feelings becomes important, given that "in a profession in which informal collaboration and mentoring is directly instrumental to the primary measure of success – publications – women's exclusion, however unconscious or inadvertent, constitutes a powerful barrier to achievement" (Maranto & Griffin, 2011, p. 13).

Callister (2006) found that in STEM fields, affective climate (defined by "quality of relationships, psychological safety, pessimism or cynicism about organizational change and perceptions of isolation" (p. 368)) and instrumental climate (denoted as "access to information, access to resources, and assessment of the promotion and tenure process" (p. 368)) completely "mediate[d] the relationship between gender and both job satisfaction and intention to quit" (p. 371). Surprisingly, this held true for both men and women, but the effects were most marked for women. Callister's (2006) results support those of Maranto and Griffin (2011), which show that a diverse climate can impact both male and female faculty's job satisfaction and intention to quit. Given the evidence presented, the following hypotheses are proposed:

Hypothesis 4a: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity

climate will yield significantly lower perceptions of female leaders' effectiveness when compared to male leaders.

Hypothesis 4b: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leadership effectiveness, and positive perceptions of diversity climate will yield significantly higher perceptions of female leadership effectiveness.

Organizational context

The professional context plays a role in how gender bias manifests itself (Eagly et al., 1992; Eagly et al., 1995; Eagly & Johnson, 1990; Thoroughgood et al., 2012). For this reason, the occupational context in this study was controlled by creating scenarios that unfolded in a generic, unnamed academic department (e.g. no mention of the actual name and/or subject area of the department was made). In the Thoroughgood et al. (2012) study, the only significant interaction occurred when the context was taken into account. Male leaders in a masculine domain (i.e. construction) were judged more severely when errors were made than their female peers; no significant differences between male and female leaders were found in the feminine domain (i.e. nursing; Thoroughgood et al., 2012).

Additional studies have also found an interaction between gender bias and the professional sphere. Eagly and Karau (2002), for example, reported that the more masculine the context, the greater the bias against female leaders. Meanwhile, Eagly et al. (1995) noted that men were rated as significantly better leaders than their female colleagues in military settings while the opposite was true in "education, and government or social services" (Eagly et al., 1995, p. 135). Eagly et al. (1992) similarly found that men were preferred as leaders in athletic departments and "business or manufacturing contexts" (p. 12). Leaders have also described greater task accomplishment when occupying gender-congruent leadership roles (i.e. women described greater task accomplishment in more feminine roles and men in more masculine roles; Eagly &

Johnson, 1990). Consequently, the organizational context is an important factor to consider when investigating the gender bias and leadership equation, and will thus be accounted for in the present study by keeping the specific department name and/or subject area undisclosed.

Overview of study hypotheses

- Hypothesis 1: Women will be rated as less effective leaders than men.
- Hypothesis 2a: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit task errors will be rated as less effective than male leaders who commit task errors.
- Hypothesis 2b: Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit relationship errors will be rated as less effective than male leaders who commit relationship errors.
- Hypothesis 3a: Male subordinates will rate female leaders significantly lower on effectiveness than male leaders.
- Hypothesis 3b: Male subordinates will rate female leaders significantly lower on effectiveness than female subordinates.
- Hypothesis 4a: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leaders' effectiveness when compared to male leaders.
- Hypothesis 4b: Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leadership effectiveness, and positive perceptions of diversity climate will yield significantly higher perceptions of female leadership effectiveness.

CHAPTER 3: METHODOLOGY

This study aimed to investigate whether gender of leader influenced subordinate perceptions of leader effectiveness, and whether type of error, gender of subordinate, and climate of diversity affected this relationship. To accomplish its purpose, vignettes depicting either a task or a relationship error committed by either a male or a female academic department director were created, and a survey assessing participants' perceptions of leader effectiveness, diversity climate, and gender of participant (along with additional demographic items) accompanied each scenario. T-tests, Analysis of Variance (ANOVA) and hierarchical multiple regression were used to analyze the results.

Study sample

The study's original plan involved selecting a random sample from a population of full-time faculty at a Research 1 (R1) Doctoral institution in the southeastern United States. The sample would be restricted to faculty members having spent at least one academic year at the institution in a faculty role. However, after contacting the Office of Academic Affairs and Human Resource Management Office of said university, the researcher was informed that, due to university policy, they would not share faculty email lists with students for research purposes.

After exploring multiple options and consulting with various faculty members at different departments, the dissertation's major professor suggested reaching out to three Deans of academic colleges within the institution who might be willing to help; two of three acceded to participate. Although utilizing a convenience sample to select the participating colleges within the institution was not ideal, the two colleges that agreed to partake in the study did represent a wide range of academic fields, encompassing both traditionally masculine and feminine

domains. The study was thus sent to a total of 320 faculty members – the entire faculty body for each college – with 190 belonging to one college and 130 to the other.

Ninety-eight individuals replied to the survey in some capacity. However, upon further inspection, 15 cases had to be deleted for the following reasons: the individual did not provide demographic data (n = 1); reported what appeared to be false demographic data (n = 1); did not consent to participate in the study (n = 2); agreed to participate by selecting “yes” on the consent form but did not complete any of the questionnaire items (n = 7); or only completed the diversity climate scale (n = 4). The 83 remaining cases were utilized for analysis purposes, yielding a 25.9% response rate.

The final sample was comprised of 44 males (41%) and 39 females (39%), and was mostly White (88%), non-Hispanic (92.8%), and between the ages of 31 and 50 (55.4%). The majority of respondents were full professors (33.7%), followed by assistant professors (28.9%) and associate professors (20.5%), worked full-time (97.6%), and had been at the university for over 15 years (41.0%). Additional demographic information is presented in Table 1.

Table 1: Demographic information

		Frequency	%
Gender	Male	49	59
	Female	34	41
Age	21-30	4	4.8
	31-40	23	27.7
	41-50	23	27.7
	51-60	14	16.9
	61-70	18	21.7
	71-80	1	1.2
		Total	Total
Race	White	73	88
	Black or African American	1	1.2
	Asian	6	7.2
	Other	2	2.4

(table cont'd.)

		Frequency	%
Missing		1	1.2
		Total	Total
Ethnicity	Non-Hispanic	77	92.8
	Hispanic	1	1.2
	Missing	5	6
Faculty position	Full Professor	28	33.7
	Associate Professor	17	20.5
	Assistant Professor	24	28.9
	Adjunct Professor	4	4.8
	Instructor	9	10.8
	Missing	1	1.2
		Total	Total
Part or Full Time	Full-Time	81	97.6
	Part-Time	2	2.4
		Total	Total
Years of Service	Less than 1	0	0
	1-5	29	34.9
	6-10	8	9.6
	11-15	12	14.5
	More than 15	34	41
		Total	Total

Measures

Data for the present study was collected through a survey (see Appendix A). Scales assessing perceptions of leadership effectiveness and diversity climate, along with demographic data, comprised this instrument.

Variables measured by the survey instrument

Subordinate perceptions of leadership effectiveness. Perceptions of leadership effectiveness were measured through two of Rosser, Johnsrud and Heck's (2003) scales of effectiveness of leaders in higher education. Specifically, Rosser et al. (2003) designed an instrument to measure perceptions of department dean's and director's effectiveness. To validate the instrument, faculty and staff (i.e. subordinates) were asked to rate their department's director

or dean on seven scales (Rosser et al., 2003). Given that this study focused on subordinate perceptions of leadership effectiveness in academia, Rosser et al.'s (2003) instrument was deemed appropriate.

The seven domains of the assessment include: “vision and goal setting [...], management of the unit [...], interpersonal relationships [...], communication skills [...], research, professional, and community endeavors [...], quality of the unit's education [...], and support for institutional diversity [...]” (p. 10). In total, 50 items comprise the scales of the instrument. Cronbach's alpha for all the scales surpassed the .90 mark, indicating strong reliability (Rosser et al., 2003).

Out of these seven, two of Rosser et al.'s (2003) subscales were selected for this study: “management of the unit and interpersonal relationships” (p. 10). These two subscales were chosen for most closely resembling agentic and communal traits reflected in Eagly's (1987) social role theory. For example, Eagly (1987) describes communal qualities (i.e. feminine traits) as reflecting “a concern with the welfare of other people” (p. 16). Although statistical data was not available, several items under ‘interpersonal relationships’ (e.g. 9, 10, 11, 12, 14, 15, 16 and 17) appeared to focus on the well-being of subordinates and on maintaining healthy relationships. Meanwhile, agentic (i.e. masculine) attributes associated with self-confidence, self-efficacy, assertiveness, control and dominance (Eagly, 1987) could be reflected in items 1, 2, 3, 4, 6, and 8.

The original 5-point Likert-type response choices were modified to a 7-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7) to increase the breath of response options available to participants. Some of the original items were also modified – albeit minimally – to enhance clarity. The changes made were carefully considered so as not to alter the underlying meaning of the original items. For example, item #6 initially read as “effective problem solver”,

and was changed to “*is an* effective problem solver.” The only other items where such changes were made were #15 and #17, where the word “is” was added at the beginning of the phrase.

The items under each scale are presented below:

Management of the Unit

1. Insures that fair administrative procedures are followed
2. Exercises fair and reasonable judgment in the allocation of resources
3. Manages change constructively
4. Delegates work effectively
5. Handles administrative tasks in a timely manner
6. Is an effective problem-solver
7. Demonstrates knowledge of departments and programs within the unit
8. Maintains an effective and efficient staff

Interpersonal Relationships:

9. Demonstrates understanding of the needs and concerns of unit members
10. Treats individuals fairly and with respect
11. Maintains positive and productive relationships within the unit
12. Maintains positive and productive relationships external to the unit
13. Demonstrates awareness of the quality of professional work of unit members
14. Demonstrates sensitivity to career and mentoring needs of unit members
15. Is accessible to faculty and staff within the unit
16. Demonstrates understanding of the needs and concerns of students
17. Is accessible to students

Diversity climate. Mor Barak et al.'s (1998) instrument assisted in measuring diversity climate. The original survey was comprised of two overarching dimensions – organizational and personal – for a total of 16 items. The organizational dimension focused on “management’s policies and procedures specifically affecting minorities and women” (Mor Barak et al., 1998, p. 85), while the personal dimension measured “individuals’ views and prejudices toward people who are different from themselves” (Mor Barak et al., 1998, p. 85). Two factors – organizational fairness and organizational inclusion – comprised the organizational dimension scale, and two subscales – personal diversity value and personal comfort – encompassed the personal dimension scale.

For the purpose of this study, only the scales under the organizational domain were used. The decision to remove the personal dimension measures stems from the fact that the items address personal beliefs and values on diversity rather than perceptions of actual organizational procedures, policies and practices. For example, under the personal diversity value factor, items such as “I think that diverse viewpoints add value” and “I believe diversity is a strategic business issue” reflect personal ideas and beliefs about diversity, rather than an assessment of group/unit and/or organizational diversity climate. Consequently, the measure of diversity climate for this study was composed of the organizational fairness and organizational inclusion subscales (under the organizational dimension domain) and their corresponding 10 items.

Modifications to the response options and items were made in the following manner. The response options on the original Mor Barak et al. (1998) 6-point Likert-type scale (ranging from strongly agree to strongly disagree) with an additional “can’t answer” option were adapted to match those of the perceptions of leader effectiveness measures. Response options thus ranged from strongly disagree (1) to strongly agree (7). The items were modified to reflect an academic

environment, following the template proposed by Buttner, Lowe, and Billings Harris (2012). Buttner et al. (2012) were interested in researching how perceptions of “diversity climate and fulfillment of diversity promises” (p. 248) amongst professionals of color affected turnover and organizational commitment. They surveyed faculty members at business schools who had joined the PhD Project, a national networking association for employees of color. Given the sample of the study, Buttner et al. (2012) modified the original Mor Barak et al. (1998) items under the organizational dimension scale – the same that was utilized for the present study – to more accurately reflect the academic setting of the study.

For example, Mor Barak et al.’s (1998) item “managers here make layoff decisions fairly, regardless of factors such as employees' race, sex, age, or social background” was modified by Buttner et al. (2012) to read: “dept. chairs here make promotion and tenure decisions fairly, regardless of such factors as the faculty member’s race, sex, age, or social background”. However, the focus of Buttner et al.’s (2012) items, like those of Mor Barak et al. (1998), remained on the leader/individual in charge of the department, rather than on the unit/department itself. Thus, the present study made additional modifications to the questions to reflect the department as the unit of interest.

Diversity climate is a multilevel construct that can be assessed at the individual, group/unit, and/or organizational levels (Chan, 1998; Dickson, Resick, & Hanges, 2006; Ehrhart et al., 2014), with unit and/or organizational levels being the most commonly selected (Dickson et al., 2006; Ehrhart et al., 2014). Therefore, the wording of the items was adapted to reflect the diversity climate construct at the department level. For example, item #4 was modified to read “in my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background”. The department

(i.e. unit) level was chosen to evaluate diversity climate based on recommendations provided in the literature (Borrevik, 1972; Moran & Volkwein, 1987). Borrevik (1972), for example, argues that in higher education, academic departments are the key component of organizational structures and should be the focus of investigations of organizational climate in higher education.

Lastly, the phrase “sexual orientation” was added to questions one through four, to reflect a more modern perspective on plurality and to be more inclusive of and sensitive to diverse groups in the workforce. Table 2 presents the subscales created by Mor Barak et al. (2012), the modifications made by Buttner et al. (2012), and the items used for this investigation for comparison purposes.

Table 2: Items from Mor Barak et al. (1998), Buttner et al., (2012), and the present study

Organizational Fairness		Organizational Inclusion	
Mor Barak, Cherin, and Berkman (1998)		Buttner, Lowe, and Billings-Harris (2012)	
Organizational Fairness	I feel I have been treated differently here because of my race, sex, religion, or age. (R)	I feel that I have been treated differently here because of my race, sex, religion, or age. (R)	I feel that I have been treated differently in my academic unit because of my race, sex, religion, age, or sexual orientation. (R)
	Managers here have a track record of hiring and promoting employees objectively, regardless of their race, sex, religion, or age.	Dept. chairs have a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion or age.	My academic unit has a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion, age, or sexual orientation.
	Managers here give feedback and evaluate employees fairly, regardless of the employee's ethnicity, gender, age, or social background.	Dept. chairs here give feedback and evaluate faculty members fairly, regardless of such factors as the faculty member's race, sex, age, or social background.	In my academic unit faculty members are given feedback and evaluated fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background.
	Managers here make layoff decisions fairly, regardless of factors such as employees' race, sex, age, or social background.	Dept. chairs here make promotion and tenure decisions fairly, regardless of such factors as the faculty member's race, sex, age, or social background.	In my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background.
	Managers interpret human resource policies (such as sick leave) fairly for all employees).	Dept. chairs interpret human resource policies (such as sabbaticals) fairly for all faculty.	In my academic unit human resource policies (such as sabbaticals) are interpreted fairly for all faculty.
	Managers here give assignments based on the skills and abilities of employees	Dept. chairs give assignments based on the skills and abilities of faculty.	In my academic unit assignments are given based on the skills and abilities of faculty.
Organizational Inclusion	Management here encourages the formation of employee network support groups.	Department chairs here encourage the formation of faculty network support groups.	In my academic unit the formation of faculty network support groups is encouraged.
	There is a mentoring program in use here that identifies and prepares all minority and female employees for promotion.	There is a mentoring program in use here that identifies and prepares all faculty of color and white female faculty for promotion.	In my academic unit there is a mentoring program in use that identifies and prepares all minority and female faculty for promotion.
	The "old boys' network" is alive and well here. (R)	The "old boys network" is alive and well here. (R)	The "old boys network" is alive and well in my academic unit. (R)
	The company spends enough money and time on diversity awareness and related training.	The university spends enough money and time on diversity awareness and related training.	The university spends enough money and time on diversity awareness and related training.

Items marked with an "(R)" are reverse-coded.

The reliability coefficients obtained by Buttner et al. (2012) for the organizational fairness and organizational inclusion subscales were .92 and .64, respectively, and an overall Cronbach's alpha of .89 for all 10 items, combined.

Given that diversity climate can be measured at either the individual, group/unit, or organizational levels, it is also important to specify the unit of measurement utilized for this investigation. In diversity climate research, responses can be either aggregated to the unit/group or organizational level, or can be left at the individual level (i.e. not aggregated; Ehrhart et al. 2014). A hotly contended topic, arguments may be found both in favor and against the aggregation of diversity climate data. For the present study, data was kept at the individual level.

Often known as psychological diversity climate, diversity climate measured at the individual level reflects participants' perceptions of diversity climate – that is, how individuals themselves perceive fairness, equal opportunity and inclusion policies, procedures and practices – within their departments, units, and/or organizations (McKay et al., 2009; McKay & Avery, 2015). Instruments and scales meant to measure diversity climate, such as the one used for this investigation, seek participants' perceptions of diversity climate at the “collective” (i.e. unit/department and organizational levels rather than the individual) level. Consequently, arguments have been made in favor of aggregating the data to the unit/department or organizational levels rather than letting it rest at the individual level. Ehrhart et al. (2014), for example, argued that diversity climate is inherently an aggregate construct given that it resides in the shared perspectives and the meaning derived from those shared perspectives of diversity climate within their workplace. Consequently, the aggregation of data, in their view, should be the path to follow when conducting diversity climate research.

Nonetheless, persuasive arguments have also been made supporting the analysis of diversity climate data at the individual level. The most important element in favor of non-aggregation is that diversity climate, despite its focus on the unit/department and/or organizational levels, is first and foremost an individual sense-making (i.e. cognitive) construct (James, Joyce, & Slocum, 1988). In other words, employees make *individual* or *personal* appraisals of their environment which they may or may not share with others, but which are nevertheless individual at its core. As James et al. (1988) eloquently states: “attributing meaning to environmental stimuli is a product of cognitive information processing, and *it is individuals, and not organizations, that cognize*. The basic unit of theory for meaning is the individual” (p. 130). The present research adheres to James et al.’s (1988) perspective, and thus maintains diversity climate data at the individual level for analysis purposes.

Demographic variables. Gender, age, race, ethnicity, tenure status and the college the faculty member belongs to comprise the six demographic variables that were included in the survey. Of special importance is gender (of participant), given the hypothesized relationship between gender of subordinate, gender of leader, and subordinate perceptions of leader effectiveness.

Procedure

To carry out the present study a series of steps were followed, including 1) conducting interviews with academic administrators, 2) creating study scenarios, 3) assigning participants to one of four study conditions, 4) distributing the survey, 5) conducting follow-ups, 6) analyzing the data, and 7) writing the report and presenting the results. Figure 1 outlines this basic procedure. A detailed explanation of each step will be provided.

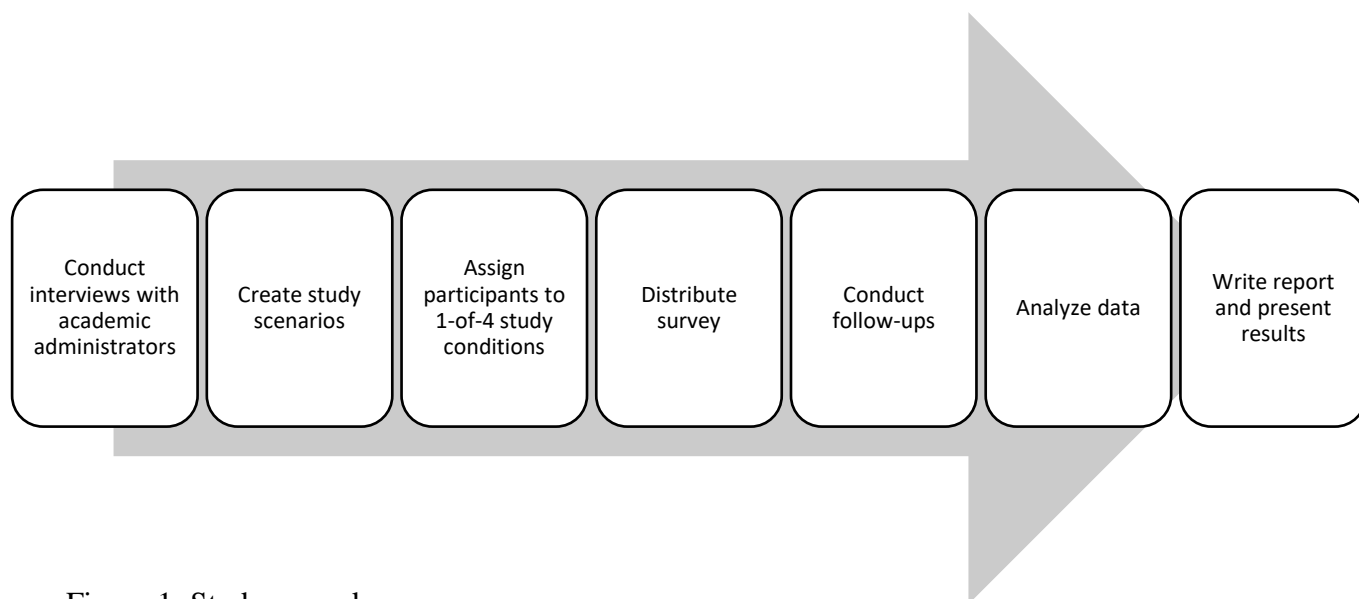


Figure 1: Study procedure

Developing the study scenarios

As referenced in Chapter 2, Goldberg paradigm studies have been regarded as a useful tool to assess gender bias in leadership (Eagly et al., 1992; Eagly & Carli, 2007). In such studies, identical scenarios that vary only in terms of the gender of the leader are introduced to study participants, and differences in perceptions of leadership based on leader gender are analyzed (Thoroughgood et al., 2012). Given that the present study makes use of the Goldberg paradigm, case studies were crafted to account for two of the study's variables of interest: gender of leader, and type of error. A total of four vignettes were designed, each representing one of the following conditions:

- Relationship error committed by a female leader
- Relationship error committed by a male leader
- Task error committed by a female leader
- Task error committed by a male leader

The leader in each scenario consisted of the director of an academic department, given that the measures that were used to evaluate perceptions of leader effectiveness were created specifically for the evaluation of deans and directors in higher education (Rosser et al., 2003). Furthermore, since the organizational context has been found to influence perceptions of leader effectiveness (Eagly et al., 1995; Eagly & Johnson, 1990; Eagly & Karau, 2002; Thoroughgood et al., 2012), the setting of the scenarios (i.e. the department the director in each case study leads) was not mentioned in either of the four conditions. In other words, the department the director supervises was left unnamed in the vignettes as to avoid associations with either masculine or feminine contexts.

Interviews

One of the limitations of the Thoroughgood et al. (2012) study outlined by the authors was the lack of real-life examples utilized to create the scenarios for their study. Consequently, to produce more realistic case studies, four academic leaders from a Research 1 (R1) Doctoral institution in the southeastern United States were interviewed. A purposive sample was used to select interviewees, and selection criteria was based on availability and longevity of the interviewee in the position. Only academic leaders, ranging from department heads to deans, who had held their current titles or similar leadership roles at the institution for at least two academic years were sought. The longevity requirements' purpose was to ensure that the interviewee 1) was thoroughly familiar with the institution, 2) had occupied a leadership position long enough to have accumulated knowledge and experience on leadership mistakes that could be shared and translated into case studies.

Interviewees received an email introducing the lead investigator of the study, outlining the purpose and general methodology of the study, and explaining the reasons for requesting their

assistance (see Appendix B). Confidentiality was insured and they were thanked in advance for their contribution. Academic leaders who agreed to participate received an additional email in preparation for the interview introducing them to Hunter et al.'s (2011) taxonomy of errors (refer to Appendix C). This taxonomy served as a guideline for the ensuing interview, and was presented prior to the actual meeting for better preparation of the interviewee.

Hunter et al.'s (2011) taxonomy is comprised of four general error classifications and three-to-four sub-categories under each major grouping. Following Thoroughgood et al.'s (2012) lead, errors associated with "information search and structuring" (Hunter et al., 2012, p. 3), "information use in problem solving" (Hunter et al., 2012, p. 3), and "managing material resources" (Hunter et al., 2011, p. 3) were described as task-oriented and were used to design the task-based error scenario, while those associated with "managing personnel resources" (Hunter et al., 2012, p. 3) were considered relationship-oriented and were used to create the relationship-based scenario. Examples of errors for each sub-category were crafted by the lead investigator, and were tailored to leadership in higher education.

A semi-structured interview protocol (see Appendix D) was utilized to ensure that the most relevant points were addressed while still allowing for flexibility, greater freedom of expression, and conversational flow during the interview. More specifically, interviewees were asked a series of questions to elicit examples of task and relationship errors commonly committed by administrators who supervise faculty in higher education. With the interviewees' permission, the interviews were recorded to ensure relevant information was annotated. Interviewed academic administrators were thanked for their participation and were provided with the investigator's email in case any further questions or concerns arose. They were also given the option of soliciting a copy of the proposal and/or completed dissertation if they so desired.

Once the interviews were conducted, the recordings were transcribed verbatim, statements were coded, and common themes were identified. The themes were then further narrowed down to the most prevalent (i.e. those that appeared most often in either all, or nearly all, of the interviews) for each type of mistake. The researcher then referred once again to the original interview transcriptions to determine whether concrete, usable examples were provided for either of the themes. The themes with the most detailed, practical examples for both the task mistake and the relationship mistake were then selected for each scenario. The final vignettes thus reflected real-life mistakes, as described by an academic leader. Despite modifications being made to the examples to better fit the needs of the study (for instance, the amount and the type of grant in the task-based scenario were changed upon further recommendation), the essence of the mistakes remained true to its original source.

To ensure that the scenarios accurately reflected the information shared during the interview, the finalized vignettes were sent to each interviewee for feedback. Two-out-of-four interviewees replied and provided their approval. Minor changes were suggested and implemented. Committee members related to the present investigation were also consulted to provide final comments, suggestions, and approval of the case studies.

The finalized survey was then pilot-tested amongst colleagues working in the same department as the lead investigator. Minor changes to the survey and relationship-based scenario were suggested, but the task-based scenario proved somewhat more problematic. Participants testing the survey had difficulty rating the leader's effectiveness under the vignette depicting a task error. Adjustments had to be made to that scenario, and the finalized survey was sent once again to a handful of the original peers who had previously pilot tested the survey, as well as to the lead investigator's major professor, for final comments and approval. The modifications

proved satisfactory, and the researcher was able to continue on to the data collection portion of the investigation.

Data collection

In the original design, participants were to be randomly assigned to one of four conditions: 1) relationship error committed by a female leader, 2) relationship error committed by a male leader, 3) task error committed by a female leader, 4) task error committed by a male leader. However, as described previously, due to university policy faculty emails were not made available to the lead investigator. Consequently, multiple alternatives were discussed and considered until it was decided that utilizing the listserv of colleges willing to participate was the best course of action. Three college deans were contacted and two acceded to partake in the investigation. For one of the two colleges, the listserv was divided by departments, so rather than randomly assigning participants to each scenario, departments were randomly assigned to one of the four conditions. The institution's website was utilized to calculate the approximate number of faculty members in each department and to group departments per college into four groups of as similar number of participants as possible.

For one of the colleges, departments were clustered into relatively equally-sized groups, with 47 participants assigned to the relationship-female scenario, 48 participants to the relationship-male group, 45 to the task-female case study, and 50 to the task-male group. Unfortunately, the same could not be said for the other college involved in the study. Fifty-four individuals belonging to one department were assigned to the relationship-female group, 31 to the relationship-male case study, 18 to the task-female scenario, and 17 to the task-male scenario. To make matters worse, the lead investigator was informed after data collection had begun that approximately ten of the faculty members in the task-female group were involved in a special

project and would most likely not answer the survey. The unequal group sizes led to different final sample sizes per condition, particularly for the task-relationship scenario: $n = 27$ for relationship-female, $n = 24$ for relationship-male, $n = 12$ for task-relationship, and $n = 20$ for task-male.

Furthermore, one of the colleges informed the main investigator that the listserv was currently unavailable and that the department would be unable to send the emails on her behalf, so that the emails had to be sent out personally by the lead researcher. Thus, for one college, participants received an email with the survey link directly from the lead investigator, while for the second college, faculty members obtained the same email from a representative of the college (i.e. the department's administrative assistant). The discrepancy in how the survey was sent – that is, in who sent the survey – may have somewhat influenced the results, for in one college the sender was the lead investigator (whom the faculty members were unfamiliar with) and for the other college it was an administrative assistant of the department (whom participants knew well).

An online survey was deemed the most appropriate, expedient method of data collection, and Qualtrics was chosen as the platform. The survey was launched on February 22, 2017 and remained open until March 22, 2017. Participants first received an email (from either the administrative assistant or the lead investigator) containing information pertaining to the study, as well as the link to the survey (refer to Appendix F). Given the potentially sensitive nature of the study, participants were not initially informed of the full extent and nature of the investigation. Outright mentioning of gender bias may prime individuals to answer in socially desirable ways. As Walker et al. (2013) explain, gender discrimination is no longer acceptable in many contemporary societies, and individuals often feel pressured to mitigate expressions of bias and prejudice and underreport biased perceptions. Openly describing the study's investigation of

prejudicial attitudes towards female leaders may thus have led to skewed results. Hence, the study was instead presented to participants as an investigation of perceptions of leader effectiveness and the influence of diversity climate on this relationship when leaders commit mistakes. In the email participants were informed that survey responses would be anonymous, and additional information such as time required to complete the survey, final date for survey completion, and informed consent were provided. Furthermore, to incentivize responding, five \$100.00 Amazon gift cards were raffled among participants who completed the survey.

Participants were asked to read the scenario they were assigned, and answer the survey items which followed. To increase the likelihood that subordinate (and not peer) perceptions of leader effectiveness were measured, participants were asked to evaluate the effectiveness of the leader from the standpoint of a subordinate. In other words, they were asked to picture the leader of the case study as their boss, and interpret the scenario and answer the questions accordingly. Upon completion of the survey, participants were debriefed on the full scope and nature of the study, and an explanation as to why the decision not to fully disclose upfront was given. Participants were provided with the primary investigator's email and personal cellphone number in case any additional questions and/or concerns arose.

Two follow-up emails were sent to encourage participation. Given that the survey was anonymous, these emails were sent out to all faculty members in the sample. The first follow-up email (refer to Appendix G) was sent on March 7, 2017 by either the lead investigator (for the first college) or the administrative assistant (for the second college). The third follow-up email (see Appendix H) was distributed on March 16, 2017. Although the lead investigator once again sent out the reminder to the first college, the administrative assistant for the second college remarked that she would not be able to send out the email herself. Instead, she forwarded the

follow-up email to each department chair's assistant for distribution. Once again, this discrepancy in email sender may have affected some of the results, given that information pertaining to the survey was now being sent by a different individual.

Statistical analysis

Independent-samples t-tests, two-way ANOVA and hierarchical multiple regression were the statistical tools used to analyze the data. SPSS was the platform of choice for conducting these analyses. Before proceeding, the quality of the data had to be established and the assumptions for each analytic technique had to be tested.

Assessment of data quality

Missing data. Only three participants from three different conditions failed to answer a single question in their responses to the survey. All three missed questions were different, one belonging to the diversity climate scale and two belonging to the perceptions of leader effectiveness scale. The participants were also of different genders. Consequently, it could be said that the data was missing completely at random (MCAR). According to Tabachnick and Fidell (2007), when data is MCAR and very few data are missing (about 5% or less), the missing data is not particularly worrisome and most methods for dealing with missing data can be utilized. Given that this was the case for this particular dataset, and to avoid reducing the sample size, mean substitution was the method selected to handle the three missing items.

Outliers. To assess the quality of the data, univariate and multivariate outliers had to be identified. For univariate outliers, z-scores were calculated. Scores below -3.00 and above 3.00, as suggested by Kline (2011), were considered outliers and were eliminated from the analysis. Given that none of the scores reached this mark, no univariate outliers were detected. Meanwhile, Mahalanobis distance (D) statistic was sought to identify multivariate outliers. The

threshold for Mahalanobis D is defined by the number of independent variables being run in the statistical test (Pallant, 2010). Since the multivariate test to be used had two independent variables, the critical value was 13.82. None of the scores surpassed this mark, indicating an absence of multivariate outliers. All data points were thus retained for further analysis.

Exploratory factor analysis

An exploratory factor analysis (EFA) was run to determine the underlying structure of the items for both the diversity climate scale and the perceptions of leader effectiveness scale, and the findings were compared to the structure originally found in Mor Barak et al. (1998) and Rosser et al. (2003), respectively. Although the sample size ($n = 83$) was somewhat concerning, according to Hair et al. (2010) the absolute minimum sample size required for an EFA is 50 ($n = 50$), which this sample clearly met. Furthermore, a minimum ratio of 1:5 observations per variable (although a 1:10 ratio is preferable) is also desirable (Hair et al., 2010). With 10 items (i.e. variables) in the diversity climate scale, the 1:5 ratio was fulfilled. For the perceptions of leader effectiveness scale, nonetheless, to achieve a 1:5 ratio 85 observations would be required, since 17 items (i.e. variables) were to be analyzed. However, because a sample of 83 was just barely shy of the 85 mark, proceeding with the EFA was deemed reasonable.

The assumptions for factor analysis for each of the scales (i.e. diversity climate and perceptions of leader effectiveness) were tested, including factorability, which is the assumption that there is sufficient intercorrelation among variables to detect an underlying structure (Hair et al., 2010). To do so, examination of the following was undergone: correlations between items (with most correlations surpassing the .3 mark being preferred; Hair et al., 2010); measures of sampling adequacy (MSA) (with .5 being the minimum cutoff necessary to proceed with the EFA; Hair et al, 2010); the Kaiser-Meyer-Olkin (KMO) test (with measures above .8 considered

“meritorious” and above .9 “marvelous”; Kaiser, 1974); and Bartlett’s test of sphericity (with significance at the $p < .05$ noting the existence of correlations between variables).

Direct oblimin rotation, an oblique rotation, was selected for the EFA given that it is best suited for “real life” problems where a certain amount of correlation is expected to exist (Hair et al., 2010). Orthogonal rotations are usually preferred for data reduction, which was not the purpose of the present study (Hair et al., 2010). Principal axis factoring was chosen as the extraction method. According to Hair et al. (2010), .3 is considered the minimum acceptable cutoff for retaining items, yet items loading at or above .5 reflect practical significance. Furthermore, the smaller the sample size, the larger the cutoff should generally be (Hair et al., 2010). A cutoff of .5 was thus deemed appropriate to interpret the results of the EFA. Lastly, percent variance explained by the items in the EFA and reliability estimates were also calculated, with values at or above 60% for the former (Hair et al., 2010) and .7 for the latter (Tabachnick & Fidell, 2007) being preferred.

Detecting influential observations

Influential observations have been shown to significantly affect the results of regression analyses (Bates, Holton, & Burnett, 1999). Thus, before proceeding with the statistical tests meant to test the hypotheses, analyses were run to detect influential observations. Central leverage values, studentized deleted residuals, DFBETAs and Cook’s Distance values were calculated to detect the presence of influential observations. The findings were as follows:

- Central leverage values that exceeded “(two times the number of predictors + 1) ÷ n” (Bates et al., 1999, p. 353) were considered leverage values. For the present study, this figure was .0602. Three observations (6, 31, and 82) fell above .0602.

- For studentized deleted residuals, scores below -1.96 or above +1.96 were considered influential (Bates et al., 1999). Upon further inspection, data points 9 and 30 exceeded the threshold.
- DFBETA values were detected by inspecting scatterplots (Bates et al., 1999). Observations 1, 2, 8, 12 appeared to deviate from the rest.
- Regarding Cook's Distance, values larger than 1 are usually considered influential (Hair et al., 2010). However, values that are larger than $4 \div n$ have also been deemed worthy of examination (UCLA Institute for Digital Research and Education, n.d.). For the present study, values above .04819 would be considered influential, and data points 2, 6, 9, and 30 met this criterion.

Table 3 presents a summary of the influential observations found under each method.

Although several data points were detected by each technique, following Bates et al.'s (1999) suggestion, only those that appeared more than once (that is, which appeared in at least two of the methods used) were considered influential observations. Cases 2, 6, 9, and 30 appeared at least twice, and were thus removed from the sample and from further analysis.

Table 3: Results of the examination of influential observations

Observation	Centered Leverage Value	Studentized Deleted Residual	DFBETA	Cook's Distance
1			X	
2			X	X
6	X			X
8			X	
9		X		X
12			X	
30		X		X
31	X			
82	X			

'X' symbolizes observations that were deemed influential under each method.

Highlighted observations indicate those that appeared under more than one method.

Assumptions for main analysis and hypothesis testing

Assumptions were tested for each statistical method, and the specific results for each test will be presented in the following chapter along with the results of each statistical test. Nonetheless, a summary of the assumptions tested is presented below:

Normality. For the t-tests and ANOVA, normality of the data across each level of the independent variable(s) was assessed via histograms and the Shapiro-Wilk test, with non-significant findings indicating normality when $p < .05$. Normality of the residuals for hierarchical multiple regression was examined through normal P-P plots for the regression standardized residuals to determine whether the scores followed a general linear pattern (Pallant, 2010).

Homogeneity of variance. Levene's test of equality of variance was used to determine whether "the variances in the distributions in the populations are equal" (Hinkle, Wiersma, & Jurs, 2003, p. 345). Non-significance when $p < .05$ indicates that the assumption has been met.

Multicollinearity. Multicollinearity between predictor variables can be problematic when conducting hierarchical multiple regressions, especially those exceeding $r = .7$ (Pallant, 2010). Correlation coefficients between predictor variables were checked to determine whether this assumption was met. Tolerance values and the variance inflation factor (VIF) were also calculated to detect multicollinearity. Tolerance values below .01 and VIF values greater than 10 signal multicollinearity (Pallant, 2010)

Linearity and homoscedasticity. To detect linearity, significant correlations ($p < .05$) of at least $r = .3$ should be sought between each predictor variable and the criterion variable (Pallant, 2010). Scatterplots of the residuals were also observed to graphically establish linearity between the predictor and criterion variables. The scatterplot ought to reflect a relatively linear pattern

with a conglomeration of scores on the horizontal line. Homoscedasticity – that is, that “the variance of one variable is the same at all values of the other variable” (Tabachnick & Fidell, 2007, p. 78) – was likewise tested by inspecting the residuals scatterplot. Scores scattered in an approximately rectangular fashion signal homoscedasticity (Pallant, 2010).

Testing the study hypotheses

Hypothesis 1. To test the hypothesis that women would be rated as less effective leaders than men, an independent-samples t-test was conducted. Significant findings at the $p < .05$ level, with the mean for male department directors being greater than the mean for female department directors, would confirm the hypothesis.

Hypotheses 2a and 2b. Hypotheses 2a and 2b were tested by running two independent samples t-test for each type of error. Hypothesis 2a predicted that error type would affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit task errors will be rated as less effective than male leaders who commit task errors, while hypothesis 2b stated that error type would affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit relationship errors will be rated as less effective than male leaders who commit relationship errors. By splitting the file on SPSS, a t-test for both task mistakes and relationship mistakes can be run. Statistically significant results on both t-tests at the $p < .05$ level indicate that H2a was supported. Likewise, if female department directors received significantly ($p < .05$) lower ratings on performance effectiveness than male department directors, H2b will be confirmed.

Hypotheses 3a and 3b. A two-way analysis of variance (ANOVA) was conducted to determine whether hypotheses 3a and 3b held true. The prediction for H3a is that male

subordinates would rate female leaders significantly lower on effectiveness than male leaders. On the other hand, H3b specifies that male subordinates would rate female leaders significantly lower on effectiveness than female subordinates. Gender of leader and gender of participant were the independent variables for the ANOVA, with perceptions of leader effectiveness acting as the dependent variable. To confirm this hypothesis, a significant interaction at the .05 level between gender of leader and gender of participant must be found. Furthermore, under this interaction, the mean rating for female leaders by male subordinates must be significantly lower ($p < .05$) than the mean rating for male leaders by male subordinates (H2a), while the mean ratings for female leaders by female subordinates must be significantly higher ($p < .05$) than those of male leaders (H2b).

Hypotheses 4a and 4b. Hierarchical multiple regression (HMR) was the statistical method selected to test hypotheses 4a and 4b. HMR involves entering the predictive variables in a series of pre-determined blocks, “with each independent variable being assessed in terms of what it adds to the prediction of the dependent variable after the previous variables have been controlled for” (Pallant, 2010, p. 149). Given that H4a and H4b are hypothesizing whether diversity climate influences the relationship between gender of leader and subordinate perceptions of leader effectiveness, HRM was deemed an appropriate analytical strategy to use.

Hypothesis 4a predicted that diversity climate would affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate would yield significantly lower perceptions of female leaders’ effectiveness when compared to male leaders. Meanwhile hypothesis 4b stated that diversity climate would affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate would yield significantly lower

perceptions of female leadership effectiveness, and positive perceptions of diversity climate would yield significantly higher perceptions of female leadership effectiveness.

To determine whether an interaction indeed existed between diversity climate and gender of leader, as outlined in H4a and H4b, gender of leader and diversity climate were added as predictors to the regression equation, in addition to an interaction term between gender of leader and diversity climate. Each variable was added to the model in the following order: gender of leader (block 1), diversity climate (block 2), and gender of leader x diversity climate (block 3). This order was selected based upon recommendations in the literature. According to Field (2009), the variable(s) to be inserted first are those which are “known predictors” (p. 212) from previous research; in other words, predictor variables that have already been found to be correlated with the criterion variable. Being that gender of leader has been previously shown to be related to perceptions of leader effectiveness (e.g. Goldberg, 1968), gender of leader was entered first into the equation as part of block 1. The exploratory variable, or the variable that is being newly tested, should then be added second (Field, 2009). Consequently, diversity climate, which was predicted would influence the relationship between gender of leader and perceptions of leader effectiveness, was placed in block 2. Finally, the interaction term has been traditionally included last (Burrill, 1997), and thus gender of leader x diversity climate was selected to go in block 3.

A statistically significant ($p < .05$) interaction term would indicate that diversity climate does indeed moderate the relationship between gender of leader and subordinate perceptions of leader effectiveness. In other words, the interaction must add significant variance to the model, thus strengthening the model by adding greater predictive value to it. Significance of the model with only gender of leader, as well as significance of the model when diversity climate is added were

also examined to determine whether, independently, they contributed a significant degree of variance to the model. In case of a statistically significant interaction, the variables would also be plotted to determine the nature of the interaction and to either confirm or reject H4a and H4b.

Conclusion

A quantitative analysis was conducted to determine whether gender of leader affects subordinate perceptions of leader effectiveness, and whether this relationship is moderated by type of error, gender of subordinate, and diversity climate. Scenarios depicting four research conditions were crafted, an online survey was administered to collect the data, and independent-samples t-tests, two-way ANOVA, and hierarchical multiple regression were utilized to analyze the data.

CHAPTER 4: RESULTS

This section reports the results of the exploratory factor analysis conducted on SPSS to determine the underlying structure of the items in each subscale, as well as reliability estimates of the instruments utilized. Analysis of the study hypotheses, including t-tests (for H1, H2a, and H2b), ANOVA (for H3a and H3b), and hierarchical multiple regression (for H4a and H4b) are also described, along with the assumptions for each statistical method.

Exploratory factor analysis

EFA for diversity climate scale

An EFA for the diversity climate scale, comprised of items 1 through 10 in the survey, was conducted, and the assumptions were tested prior to running the analysis. In terms of factorability, which is the assumption that there is sufficient intercorrelation among variables to detect an underlying structure (Hair et al., 2010), only one correlation – that between items 5 and 10 – was not significant ($r = .135$, $p = .112$). Given that these two items were expected to load on different factors, the lack of a significant correlation for the two items was not particularly concerning. Most correlations between items surpassed $r = .3$, the cutoff recommended by Hair et al. (2010), supporting the adequacy of the data for EFA.

Additional measures of factorability served to confirm the suitability of factor analysis. Measures of Sampling Adequacy were all above .8, except for a .797 value, which was nonetheless deemed satisfactory; the Kaiser-Meyer-Olkin (KMO) test yielded a .861 result, which is considered “meritorious” (Kaiser, 1974); and Bartlett’s test of sphericity was significant at the $p < .000$ level of significance.

The EFA for the diversity climate scale was run using direct oblimin as the rotation method and principal axis factoring as the extraction method. The results are presented in Table 4.

Table 4: Exploratory factor analysis for diversity climate scale

Item	Factor	
	1	2
Q1	0.029	0.576
Q2	0.695	0.061
Q3	0.783	0.119
Q4	0.819	0.098
Q5	0.798	-0.138
Q6	0.64	0.187
Q7	0.075	0.569
Q8	0.056	0.458
Q9	0.183	0.574
Q10	-0.110	0.705

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Following Hair et al.'s (2010) recommendations, items factoring above .5 were retained, while those loading below .5 were removed. In Mor Barak et al.'s (1998) original scale, items 1-6 comprised one subscale (organizational fairness), and items 7-10 constituted another subscale (organizational inclusion). As can be noted from Table 4, most items loaded on either of the two factors as expected, except for items 1 and 8. Item 1 loaded most strongly on factor 2 (i.e. the organizational inclusion subscale), but was kept for further analysis given its appropriate loading of .576. Item 8 did not meet the .5 threshold, and was thus eliminated from the dataset.

Once item 8 was removed, the amount of variance explained by the scales reached 64.320%, surpassing the 60% mark suggested by Hair et al. (2010). Reliability estimates were also adequate, with a Cronbach's alpha level of .872 for the entire scale (without item 8), .891 for the organizational fairness subscale (items 2, 3, 4, 5 and 6), and .725 for the organizational inclusion subscale (items 1, 7, 9, and 10).

EFA for perceptions of leader effectiveness scale

Items 11 through 27 comprised the perceptions of leader effectiveness scale, with items 11 to 18 measuring management of unit, and 19 to 27 interpersonal relationships. To determine whether these items factored as expected (i.e. following Rosser et al.'s (2003) findings) an EFA was conducted. Factorability of the data was established by inspecting the correlation matrix, MSA values, the KMO test, and Bartlett's test of sphericity. Most correlations surpassed the $r = .3$ mark, and all were statistically significant, while MSA measures were all at or above .812. The value for KMO was .916 and Bartlett's test of sphericity was significant at the $p < .000$ value. The data was therefore deemed suitable for exploratory factor analysis.

Direct oblimin rotation and principal axis factoring were selected to run the factor analysis.

Table 5 summarizes the findings.

Table 5: Exploratory factor analysis for perceptions of leader effectiveness scales

Item	Factor		
	1	2	3
Q25	0.966	-0.034	0.015
Q19	0.96	-0.091	0.1
Q23	0.882	-0.055	0.109
Q26	0.867	0.031	-0.051
Q24	0.825	0.151	-0.029
Q27	0.81	0.074	-0.182
Q20	0.766	0.159	0.045
Q21	0.728	0.099	0.205
Q12	0.111	0.76	0.008
Q11	0.025	0.755	-0.156
Q15	-0.137	0.722	0.311
Q14	0.241	0.666	0.02
Q13	0.307	0.649	-0.047
Q16	-0.039	0.597	0.416
Q17	0.208	0.096	0.643

(table cont'd.)

Item	Factor		
	1	2	3
Q18	0.49	0.046	0.508
Q22	0.095	0.329	0.343

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 17 iterations.

The results of the EFA for the perceptions of leader effectiveness items show three factor loadings, rather than the two which were originally expected based on the findings by Rosser et al. (2003). Furthermore, item 22 did not meet the .5 cutoff proposed by Hair et al. (2010) and was removed. Several items showed cross-loadings, meaning that they loaded considerably on more than one factor. For the purposes of this study, items loading on a second factor at Hair et al.'s (2010) minimum acceptable .3 threshold were considered cross-loadings. Under this criterion, items 13, 16, and 18 showed significant loadings on more than one factor and were eliminated. Despite loading adequately on the third factor, item 17 also had to be removed given that after the deletion of several items it was the only one remaining on the third factor. The prevailing items were divided into the following two subscales: management of unit (items 11, 12, 14 and 15) and interpersonal relationships (items 19, 20, 21, 23, 24, 25, 26 and 27).

Cronbach's alpha for the two combined subscales after the deletion of items 13, 16, 17, 18, and 22 was .952, and reliability estimates for the management of unit subscale and the interpersonal relationships subscale was .852 and .967, respectively. The remaining twelve items explained 78.113% of the variance, yielding satisfactory results.

Testing the study hypotheses

Once the factor analysis was conducted, the finalized items to be analyzed were obtained, and the study hypotheses could be tested. A correlation coefficient matrix (refer to Table 6) was drawn to determine, at first glance, which items were significantly related to each other.

Table 6: Correlation matrix

	1	2	3	4	5
1. Gender of leader					
2. Type of error	0.200				
3. Gender of participant	0.073	0.072			
4. Diversity climate	0.159	0.233*	0.308**		
5. Perceptions of leader effectiveness	0.181	0.637**	-0.027	0.334**	

* Significant correlation at the 0.05 level (2-tailed).

** Significant correlation at the 0.01 level (2-tailed)

As can be seen from Table 6, diversity climate was significantly correlated to type of error ($r = .233$, $p < .05$) and gender of participant ($r = .308$, $p < .01$), while perceptions of leader effectiveness were correlated at the $p < .01$ level to type of error ($r = .637$) and diversity climate ($r = .334$).

Testing hypothesis 1

The study's first prediction was that women would be rated as less effective leaders than men, and an independent-samples t-test was deemed the most appropriate method of analysis.

Normality of the dependent variable on all levels of the independent variable was tested using the Shapiro-Wilks test. Results were not significant for the distribution of scores for perceptions of leader effectiveness and female leaders ($W = .982$, $p = .807$), but was statistically significant for perceptions of leader effectiveness and male leaders ($W = .938$, $p = .022$). However, the Kolmogorov-Smirnov goodness-of-fit test was not significant for the latter ($D = .122$, $p = .114$), thus suggesting that departure from normality was not extreme. Pallant (2010) argues that parametric statistics meant to compare groups (e.g. t-tests, ANOVAs) are quite robust to the assumption of normality once 30+ is exceeded (Pallant, 2010). Given that the sample size was 79, the outcome of the Shapiro-Wilks test was not particularly worrisome.

Table 7: Independent samples t-test for hypothesis 1

		Levene's Test for Equality of Variances		T-Test for Equality of Means				
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Perceptions of Leader Effectiveness	Equal variances assumed	4.896	0.03	-1.616	77	0.11	-0.45327	0.28055
	Equal variances not assumed			-1.657	76.129	0.102	-0.45327	0.27356

Levene's test of equality of variance was significant ($F = 4.896$, $p = .03$), indicating that the homogeneity of variance assumption was not met, and that the t-statistic for equal variances not assumed had to be interpreted. The results for the t-test confirming whether differences in subordinate perceptions of leader effectiveness differed based on the leader's gender ($n = 43$ for males; $n = 36$ for females) are presented in Table 7.

The t-test was not significant at $t(76) = -1.657$, $p = .102$, indicating that there were no statistically significant differences in perceptions of leader effectiveness when the leader was male ($M = 3.47$, $SD = 1.39$) or female ($M = 3.02$, $SD = 1.04$). Consequently, Hypothesis 1 was not confirmed.

Testing hypotheses 2a and 2b

Independent samples t-tests were utilized to confirm the veracity of hypotheses 2a and 2b. Hypothesis 2 predicted that: a) female leaders who committed task errors would be rated as less effective than male leaders who committed task errors, and b) female leaders who committed

relationship errors would be rated as less effective than male leaders who committed relationship errors. The assumption of normality was only partially met given that the distribution of perceptions of leader effectiveness scores was found to be normal across the female leader but not the male leader groups.

The data was split in two (via the split file function in SPSS) on the type of error variable, and the t-test was run with gender of leader as the independent variable and perceptions of leader effectiveness as the dependent variable. The t-test for the task mistake data subset was homogeneous, with a non-significant Levene's test ($F = 1.034$, $p = .319$; refer to Table 8). No significant differences ($t(26) = -1.419$, $p = .168$) in subordinate perceptions of leader effectiveness were found when the department director committing a mistake was either male ($n = 19$, $M = 4.55$, $SD = 1.19$) or female ($n = 9$, $M = 3.89$, $SD = 1.04$). The findings therefore failed to support H2a.

Table 8: Independent samples t-test for hypothesis 2a*

		Levene's Test for Equality of Variances		T-Test for Equality of Means				
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Perceptions of Leader Effectiveness	Equal variances assumed	1.034	0.319	-1.419	26	0.168	-0.65936	0.46456
Perceptions of Leader Effectiveness	Equal variances not assumed			-1.495	18.031	0.152	-0.65936	0.44116

For the relationship mistake data subset, once the homogeneity of variance assumption was established ($F = .147, p = .703$), interpretations of the statistical test revealed that subordinate perceptions of leader effectiveness did not differ significantly ($t(49) = .455, p = .651$) between male leaders ($n = 24, M = 2.62, SD = .827$) and female leaders ($n = 27, M = 2.73, SD = .880$). Hence, H2b did not hold true. Table 9 summarizes these findings.

Table 9: Independent samples t-test for hypothesis 2b*

		Levene's Test for Equality of Variances		T-test for Equality of Means				
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Perceptions of Leader Effectiveness	Equal variances assumed	0.147	0.703	0.455	49	0.651	0.1092	0.24002
	Equal variances not assumed			0.457	48.829	0.65	0.1092	0.23914

*Type of Error = Relationship

To verify these results, a two-way ANOVA was run. Although there was a non-significant interaction between gender of leader and type of error ($F(1, 79) = 2.61, p = .111$), and the main effect for gender of leader also failed to reach statistical significance ($F(1, 79) = 1.335, p = .252$), significance for the main effect of type of error was obtained ($F(1, 79) = 42.164, P = .000$, partial eta squared = .360). In other words, both male and female leaders were rated significantly lower on performance effectiveness when committing relationship mistakes ($M = 2.68, SD = .849$) than task mistakes ($M = 4.24, SD = 1.17$). The effect size of the relationship was small-to-medium (partial eta squared = .360), and the level of power exceeded the .8 threshold (Pallant,

2010). Despite not being a hypothesized relationship, the findings were considered unexpected and worthy of mention, and will be addressed in Chapter 5. The results of the ANOVA are presented in Table 10.

Table 10: ANOVA for hypotheses H2a and H2b

Dependent Variable: Perceptions of Leader Effectiveness								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	52.643 ^a	3	17.548	18.765	0.00	0.429	56.295	1.00
Intercept	783.496	1	783.496	837.843	0.00	0.918	837.843	1.00
Gender of Leader	1.248	1	1.248	1.335	0.252	0.017	1.335	0.207
Type of Error	39.429	1	39.429	42.164	0.00	0.36	42.164	1.00
Gender of Leader * Type of Error	2.436	1	2.436	2.605	0.111	0.034	2.605	0.357
Error	70.135	75	0.935					
Total	964.615	79						
Corrected Total	122.778	78						

a. R Squared = .429 (Adjusted R Squared = .406)

b. Computed using alpha = .05

Testing hypotheses 3a and 3b

An ANOVA tested whether male subordinates rated female leaders significantly lower on effectiveness than male leaders (H3a), and whether male subordinates rated female leaders significantly lower on effectiveness than female subordinates (H3b). The assumptions were tested, with the distribution of perceptions of leader effectiveness scores across the levels of the independent variable displaying signs of non-normality. As noted when testing H1, performance of leader effectiveness scores were normal when *gender of leader* was female but not male.

Similarly, the Shapiro-Wilks test was not significant when *gender of participant* was male ($W = .960, p = .259$) but was significant for females ($W = .930, p = .038$). For the latter, the Kolmogorov-Smirnov goodness-of-fit test did not reach significance ($D = .148, p = .073$), and ANOVAs conducted with a sample size of at least 30 observations are usually robust to departures from normality (Pallant, 2010); hence, non-normality was not of major concern. Levene's test of homogeneity of variance ($F = 1.99, p = .123$) confirmed that the assumption of equality of variances was met.

An ANOVA was then conducted with gender of leader and gender of participant as the independent variables, and perceptions of leader effectiveness as the dependent variable. As can be noted from Table 11, neither of the main effects for gender of leader ($F(1, 75) = 2.70, p = .105$) nor gender of participant, ($F(1, 75) = .113, p = .738$) nor the interaction between the two ($F(1, 75) = .08, p = .778$) were statistically significant.

Table 11: ANOVA for hypotheses 3a and 3b

Dependent Variable: Perceptions of Leader Effectiveness								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	4.350 ^a	3	1.45	0.918	0.436	0.035	2.755	0.243
Intercept	800.057	1	800.057	506.67	0.00	0.871	506.67	1.00
Gender of leader	4.262	1	4.262	2.699	0.105	0.035	2.699	0.368
Gender of Participant	0.178	1	0.178	0.113	0.738	0.001	0.113	0.063
Gender of Leader * Gender of Participant	0.127	1	0.127	0.08	0.778	0.001	0.08	0.059
Error	118.429	75	1.579					
Total	964.615	79						
Corrected Total	122.778	78						

a. R Squared = .035 (Adjusted R Squared = -.003)

b. Computed using $\alpha = .05$

In other words, there was no significant difference in how male subordinates ($n = 47$, $M = 3.24$, $SD = 1.18$) rated the performance effectiveness of male leaders ($n = 43$, $M = 3.47$, $SD = 1.39$) versus female leaders ($n = 36$, $M = 3.02$, $SD = 1.04$), failing to confirm H3a. Furthermore, male subordinates ($n = 47$, $M = 3.24$, $SD = 1.18$) and female subordinates ($n = 32$, $M = 3.30$, $SD = 1.37$) did not rate female leaders ($n = 36$, $M = 3.02$, $SD = 1.04$) and male leaders significantly different on performance effectiveness. Hypothesis 3b was consequently not supported.

Testing hypotheses 4a and 4b

Hypothesis 4a predicted that negative perceptions of diversity climate would yield significantly lower perceptions of female leaders' effectiveness when compared to male leaders. Hypothesis 4b expressed that negative perceptions of diversity climate would yield significantly lower perceptions of female leadership effectiveness, and positive perceptions of diversity climate would yield significantly higher perceptions of female leadership effectiveness. To confirm H4a and H4b, a hierarchical multiple regression (HMR) was conducted.

The assumptions of multicollinearity, linearity, normality and homoscedasticity were tested to determine the suitability of the data for HMR. Although multicollinearity between gender of leader and diversity climate was not a problem given their non-significant correlation ($r = .159$, $p = .081$), the relationship between the interaction term (gender of leader x diversity climate) and gender of leader ($r = .957$, $p < .000$) posed a multicollinearity problem, particularly as the value closely approached $r = 1.00$. A variance inflation factor (VIF) of 26.378 for the interaction term and of 23.433 for the gender of leader variable when the interaction term was added to the model revealed a similar problem with multicollinearity.

Multicollinearity is a common problem resulting from the creation of interaction terms between predictor variables in multiple regression. Tabachnick and Fidell (2007) recommend remedying the multicollinearity issue by centering one or more of the problematic variables. Given that diversity climate was a continuous variable, diversity climate was centered, and a new product term featuring gender of leader and the centered diversity climate variable was created. This effectively solved the multicollinearity issue, as there were no longer significant correlations between any of the three independent variables (i.e. gender of leader, centered diversity climate, and the interaction term), and tolerance and VIF values fell within acceptable margins (greater than .01 for tolerance, and less than 10 for VIF).

The assumption of linearity was somewhat problematic. The centered diversity climate variable and perceptions of leader effectiveness correlation was significant ($r = -.334, p < .000$), as well as the correlation between the interaction term and perceptions of leader effectiveness ($r = -.233, p = .019$). The relationship between gender of leader and perceptions of leader effectiveness, nevertheless, was not significant ($r = .181, p = .081$). Examination of the residuals scatterplot showed a slight linear trend, with a few points centering around the horizontal line. Per Tabachnick and Fidell (2007), violations of the assumption of linearity for the relationship between one of the independent variables and the dependent variable are not catastrophic, but may weaken the results of the HMR (Tabachnick & Fidell, 2007). Interpretation of the findings when gender of leader is added to the model must therefore be approached with caution. Lastly, the assumptions of normality of residuals and homoscedasticity were tested by investigating the normal P-P plots and scatterplot for residuals, respectively, and both were met.

The hierarchical multiple regression was conducted by introducing gender of leader in the first block, the centered diversity climate variable in the second block, and the interaction term

between gender of leader and centered diversity climate in the third block. The results obtained are presented in Tables 12 and 13.

Table 12: R and R change for hypotheses 4a and 4b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.181 ^a	0.033	0.02	1.24187	0.033	2.61	1	77	0.11
2	.358 ^b	0.128	0.105	1.18678	0.095	8.315	1	76	0.005
3	.359 ^c	0.129	0.094	1.19439	0.000	0.034	1	75	0.855

a. Predictors: (Constant), Gender of Leader

b. Predictors: (Constant), Gender of Leader, Centered Diversity Climate

c. Predictors: (Constant), Gender of Leader, Centered Diversity Climate, Gender of Leader * Centered Diversity Climate

d. Dependent Variable: Perceptions of Leader Effectiveness

Table 13: ANOVA for hypotheses 4a and 4b^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.026	1	4.026	2.61	.110 ^b
	Residual	118.753	77	1.542		
	Total	122.778	78			
2	Regression	15.737	2	7.869	5.587	.005 ^c
	Residual	107.041	76	1.408		
	Total	122.778	78			
3	Regression	15.785	3	5.262	3.688	.016 ^d
	Residual	106.993	75	1.427		
	Total	122.778	78			

a. Dependent Variable: Perceptions of Leader Effectiveness

b. Predictors: (Constant), Gender of Leader

c. Predictors: (Constant), Gender of Leader, Centered Diversity Climate

d. Predictors: (Constant), Gender of Leader, Centered Diversity Climate, Gender of Leader * Centered Diversity Climate

For model 1, comprised of gender of leader as the sole independent variable, an R^2 of .033 and an $F(1, 77) = 2.61, p = .110$ for the overall model revealed no significant variance added to the model by gender of leader. In other words, gender of leader ($M = .54, SD = .501$) did not help predict perceptions of leader effectiveness. When centered diversity climate ($M = .000, SD = 1.11$) was added to the model, the ANOVA reflected a significant statistical result ($F(1, 76) = 5.587, p = .005$). R^2 change was also significant ($F(1, 76) = 8.315, p = .005$), noting that when the centered diversity climate variable was added to the model, the R^2 of the model was meaningfully improved, from .033 to .128. Including the centered diversity climate variable in the model increased the variance explained by 9.5%. Although the R^2 change reflected a rather small variance, centered diversity climate did appear to hold predictive value over subordinate perceptions of leader effectiveness.

Adding the interaction term ($M = -.088, SD = .821$) to the model did not result in a significant improvement in variance explained. Despite the ANOVA for model 3 being statistically significant ($F(1, 75) = 3.688, p = .016$), the change in R^2 from model 2 to model 3 was not ($F(1, 75) = .034, p = .855$). The significance of the model was most likely due to the presence of the centered diversity climate variable, rather than the addition of the interaction term. Diversity climate therefore did not moderate the relationship between gender of leader and subordinate perceptions of leader effectiveness, and changes in the ratings of diversity climate (i.e. lower or higher scores) did not affect perceptions of leader effectiveness based on the gender of the leader. H4a and H4b were hence not confirmed.

Conclusion

An exploratory factor analysis was conducted to determine the underlying structure of the diversity climate and perceptions of leader effectiveness scales. After items were deleted based

on the results, coefficients of reliability and percent variance explained revealed a strong set of scales. Non-significant statistical results for independent samples t-tests failed to confirm either H1, H2a, or H2b. Likewise, non-significant ANOVA results found that H3a and H3b did not hold true. A hierarchical multiple regression used to test H4a and H4b did not obtain significant results for the interaction term, thus the hypotheses could not be proven.

CHAPTER 5: DISCUSSION

The purpose of the present study was to investigate whether gender bias influenced faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States. It examined gender bias when high-ranking university leaders made mistakes, and how type of error, diversity climate, and gender of subordinate affected this relationship. In the following sections, the findings outlined in Chapter 4 will be discussed, and potential explanations for the results will be provided. The implications of the study and recommendations for future research will also be presented.

Summary of results

In this study, six hypotheses were presented, none of which were confirmed by the data.

Table 14 summarizes the study hypotheses, the statistical methods utilized to test each, and the findings.

Table 14: Hypotheses and study findings

	Hypotheses	Method of analysis	Statistical results
H1	Women will be rated as less effective leaders than men	Independent samples t-test	Not significant
H2a	Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit task errors will be rated as less effective than male leaders who commit task errors.	Independent samples t-test	Not significant
H2b	Error type will affect the relationship between leader gender and subordinate perceptions of leader effectiveness such that female leaders who commit relationship errors will be rated as less effective than male leaders who commit relationship errors.	Independent samples t-test	Not significant
H3a	Male subordinates will rate female leaders significantly lower on effectiveness than male leaders.	Two-way ANOVA	Not significant

H3b	Male subordinates will rate female leaders significantly lower on effectiveness than female subordinates.	Two-way ANOVA	Not significant
H4a	Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leaders' effectiveness when compared to male leaders.	Hierarchical multiple regression	Not significant
H4b	Diversity climate will affect the relationship between gender of leader and subordinate perceptions of leader effectiveness such that negative perceptions of diversity climate will yield significantly lower perceptions of female leadership effectiveness, and positive perceptions of diversity climate will yield significantly higher perceptions of female leadership effectiveness.	Hierarchical multiple regression	Not significant

Accounting for non-significant findings

The non-significant results for all major predictions was unexpected. However, gender bias is a complex phenomenon not easily studied. For instance, Eagly and Carli (2007) expressed how factors such as household and childrearing responsibilities as well as outdated organizational policies and practices can impact the expression of discrimination in the workplace. Variables including cultural context (e.g. country of origin; Curseu & Boros, 2008), workplace context (Thoroughgood et al., 2012), and diversity climate (Kossek & Zonia, 1993), can influence attitudes toward female leaders. These and other factors suggest a degree of complexity in the gender bias equation that can affect the relationship between gender of leader and perceptions of leader effectiveness. Thus, non-significant findings may be a consequence of the interplay of a multitude of factors that this study did not take into account.

In addition, Thoroughgood et al. (2012), from which this study was modeled, were also unable to confirm the hypotheses pertaining to gender bias except when accounting for the

context the scenario took place in. As was the cases for hypothesis 2 of this investigation, Thoroughgood et al. (2012) had predicted an interaction between type of error and gender of leader that was not supported. In the present study, the interaction between type of error and gender of leader was also not significant. Thus, several non-significant findings in this study were in line with those of previous research, and should therefore not be entirely surprising.

One of the elements that both Thoroughgood et al. (2012) and this study shared was the investigation of gender bias under *negative conditions*; that is, when leaders make mistakes. The literature has mostly focused on differential treatment of male and female leaders under *conditions of success* (Thoroughgood et al., 2012); that is, variances in perceptions of male and female leader effectiveness when performance is effective and goals are achieved. It is possible that the non-significant findings of this study, as well as the inability to confirm some of Thoroughgood et al.'s (2012) hypotheses, derived from differences in how leaders are viewed and judged under effective versus non-effective leadership examples. For instance, subordinates may consider mistakes equally detrimental or unpardonable – or equally benign and forgivable – regardless of leader gender.

An alternative explanation for the non-significant results was that the investigation did not effectively manipulate the study conditions and thus was unable to obtain accurate findings. Although unfortunate and difficult to admit, it is possible that despite careful attention to the creation of the study scenarios and a focus on details, the vignettes and measures of diversity climate did not successfully delineate the independent variables under study. According to Price (2012), incorporating supplemental measures for each of the independent variables of interest is important, especially when abstract concepts that cannot be measured directly are present, such as in the case of diversity climate. For the present study, it would thus have been useful to ask

additional questions at the end of the survey, as recommended by Price (2012), to determine how effective the diversity climate measures and scenarios differentiated between the independent variables of interest. For instance, participants could have been asked whether they: 1) were clearly able to distinguish amongst study conditions (e.g. male versus female leader; task versus relationship mistake), 2) understood the concept of diversity climate and/or provided alternative measures for the construct, 3) rated the leader as if they were a subordinate working under that leader, and 4) issued their opinions and perspectives based on the information given, even if the information was limited. Due to a lack of manipulation checks, it is possible that the study scenarios and measure of diversity climate were not easily distinguished by study participants and thus, confounded the results. The inability to confirm the study hypotheses may have thus been due to issues with the research design, rather than an actual lack of significant relationships amongst the study variables.

Another issue that could have influenced the results were the unequal sample sizes of the different groups. Although unequal sample sizes where the smallest group is no less than half the size of the larger group are usually not considered problematic (Morgan, Leech, Gloeckner, & Barrett, 2004), they may have posed a problem for this particular dataset. All sample sizes were within the 1.5 boundary suggested by Morgan et al. (2004), with the exception of gender of leader under the task-based scenario ($n = 19$ for males, and $n = 9$ for females). However, when running diagnostics to detect the presence of influential outliers, and when all potential influential observations were taken into account (i.e. all observations appearing under DFBETAs, studentized deleted residual's, Cook's D, and central leverage values), 6 out of 9 belonged to the task-female scenario. Similarly, when determining the observations that appeared on two or more methods, 3 out of 4 belonged to the task-female group. Hence, the

majority of influential observations derived from the task-female group, and the elimination of three influential data points further reduced its sample size from $n = 12$ to $n = 9$. This discrepancy in sample sizes between conditions seems to have influenced the analysis and potentially affected the findings.

Likewise, the small sample size in the present study most likely resulted in a lack of statistical power, potentially leading to a type II error. Type II errors occur when a false null hypothesis is not rejected (Hinkle et al., 2003); that is, when an actual difference exists yet the statistical test fails to detect it. To minimize the possibility of a type II error from occurring, the power of the test should be large enough to enable the statistical analysis to unearth true differences. Traditionally, the .80 level has been used (Cohen, 1992). For the power to reach this threshold, nonetheless, three additional conditions must be outlined: the alpha level, the effect size, and the sample size (Cohen, 1992). The alpha level, as is the case for the present study, is most often established at .5. Meanwhile, the literature dictates the expected effect size, which usually ranges from small ($r = .1$), to medium ($r = .3$), to large ($r = .5$; Cohen, 1992). Lastly, the required sample size is determined based on the alpha level set, the desired power level, and the predicted magnitude of the effect size of the observed variables under study.

Cohen's (1992) power table has been one of the most widely used guidelines to determine the required sample size once the alpha, power, and effect size have been established. For the present study, the alpha level was set at .5, the power level wished for was .80, and the expected effect size (based on the literature) was small (Eagly & Carli, 2007; Swim & Sanna, 1996; Thoroughgood et al. 2012). As per Cohen's (1992) guideline, if the power were to confidently reach .80, the sample size should have been 393 for the t-test and for the ANOVA (this guideline was originally established for one-way ANOVAs while the present study utilized a two-way

ANOVA, yet this threshold was still used as a benchmark), and 547 for a regression analysis with three independent variables. Considering that the survey was sent to 320 people total, and that only 82 responses were usable (which became reduced to 79 after influential observations were accounted for), the obtained sample size was far from desirable. The .80 power level was thus most likely not reached.

In fact, the ANOVA results (displayed in Tables 10 and 11), which provide power estimates, show power levels falling greatly below the desired .80 cutoff. For example, statistical analysis to determine the main effects for gender of leader when testing H2a and H2b reflected a power level of .207. Similarly, for H3a and H3b, power analysis of the main effects for gender of participant were .368. Main effects for gender of participant fared even worse, with a power statistic marking .063 when testing its main effects. Thus, there is a strong possibility that the dearth of significant findings and the inability to confirm either of the six study hypotheses stemmed from a lack of statistical power – which originated from the considerably small sample size – rather than the actual absence of significance. The inability to detect true differences and a failure to reject a false null hypothesis may have therefore been the culprit behind the lack of significant findings.

Social desirability is another factor that could have influenced the present study's results. Individuals may have been hesitant to express attitudes and beliefs that are no longer perceived as acceptable by society (Walker et al., 2013). That is, prejudicial attitudes towards female leader may be suppressed in order to avoid eliciting negative responses from others. Although the present investigation only revealed the gender bias component of the study after-the-fact, it is possible that participants may have caught on to the true nature of the study. Considering that study participants belonged to either one of two colleges, and that the survey was sent to all faculty members within the college, participants may have talked to each other about the study

before having a chance to complete the survey, and may have been informed of its focus on differential treatment of leaders based on gender. Having been alerted to the research's emphasis on gender bias may have primed participants to answer in socially desirable ways. Even if participants were not aware of the gender bias component from the start, given that they were answering potentially delicate questions (about diversity climate in their department) and rating a leader – albeit fictitious – they may have been hesitant to provide candid answers. Unfortunately, the anonymous nature of the study did not allow for follow up interviews or focus groups with study participants to determine whether gender bias is indeed viewed as a problem within their respective departments, whether there was a discrepancy between the case study and reality as perceived by participants, or whether members of the two colleges differed systematically from faculty at other colleges within the same institution (or at equivalent colleges at other institutions). Follow-up qualitative inquiry could have helped establish whether the quantitative results accurately reflected gender bias amongst the sample.

Implications of the study

Despite being unable to confirm the predicted hypotheses, the present study has important theoretical, practical, and research implications. First, the ciphers don't lie; there is still a disproportionate dearth of women in top leadership positions. Although accounting for nearly half of the working population ("Labor Force Statistics," n.d.), women are still much less likely than their male counterparts to hold positions of authority within organizations (Bellstrom, 2016; Catalyst, 2016). In academia, women are less likely to be university presidents (American College President Study, 2012), obtain tenure-track positions (Catalyst, 2015), or achieve tenure (Catalyst, 2015). It is also generally agreed upon that gender bias in the workplace is a reality.

However, the finding of no significant differences in judgements of male and female leaders amongst the respondents in this study could be interpreted to suggest a lack of gender bias in the present university setting. For example, the data was collected from two colleges at a Research (R1) Doctoral institution in the southeastern United States. Institutions of higher education, including tier 1 universities, are known for being liberal, and left-leaning (Maranto & Woessner, 2012). This is not to say that there are not differences both between and within colleges and institutions but rather that, in general, academia represents a liberal atmosphere. Gender bias in higher education may be less prevalent or may manifest itself differently than gender bias in other workplace settings.

Second, a surprising yet interesting finding was that leaders (male or female) who committed relationship mistakes were perceived as significantly less effective than leaders who committed task mistakes. Although there is currently little empirical evidence in the literature to explain the findings, some indication may exist as to why leaders were rated differently on task versus relationship mistakes. Shepherd and Smyth (2012), for example, postulated that Western industry has grown increasingly task-oriented, concentrating on factors such as individual productivity, profit and efficiency, to the detriment of relationships. For organizations to be most effective, recognizing the importance of the collective and gaining a healthy balance between tasks and relationships should become a priority (Shepherd & Smyth, 2012). They note that, in their numerous research initiatives, participants reported satisfactory levels of task orientation (on average, rating it as an 8 out of 10), but dissatisfaction in the relationship-focus of their teams and leaders (producing an average rating of 3 out of 10). Potential differences in how task and relationship effectiveness are viewed within groups, as well as individual perceptions of the importance of each, may thus influence how individuals rate task and relationship

performance – including when mistakes are made. For example, participants may be generally satisfied with the level of task orientation of their leader and/or department, and may thus be less sensitive to glitches in task performance (e.g. task errors committed by their leaders). However, awareness of the weakness of relationship effectiveness in their departments or their leaders may prime them to be more sensitive towards lapses in relationship judgement by leaders. Although explanations for the main effects on type of error are merely speculative, the findings warrant deeper investigation. Future research should explore whether differences between task and relationship errors can be replicated across different populations and situations, and if so, the reasons for such variances.

Third, even though the influence was small (an R^2 increase of 9.5%), the regression model was significantly improved ($p < .05$) when diversity climate was added to the equation, thus supporting findings from previous studies indicating that diversity climate does affect individual, unit, and/or organizational outcomes. The findings further reiterate the importance of diversity climate in organizations, and contribute to the literature through the affirmation that diversity climate affects how subordinates rate leader performance. As diversity climate increased, ratings of leadership effectiveness also increased, despite leaders committing errors. Positive diversity climate therefore appears to improve perceptions of leader effectiveness, even under less-than-desirable conditions.

A possible explanation for the significant relationship found between diversity climate and perceptions of leader effectiveness was provided by McKay et al. (2008). When employees consider diversity climate to be strong within their units and/or organization, they are more likely to feel valued, accepted and appreciated, thus enhancing their identification with the organization (McKay et al., 2008). This increased identification, in turn, can lead to a more positive appraisal

of the leader. Cox (1994) similarly theorized that by addressing factors such as acculturation and integration, strong climates of diversity can influence employees' feelings toward the unit and/or organization. Significant findings in the data may have thus resulted from positive perceptions of diversity climate which, in turn, led employees' (i.e. study participants') to view leaders in a more favorable light.

Fourth, the results also support previous research (e.g. Eagly & Johnson, 1990; Swim et al., 1989) which raise questions about the effectiveness of Goldberg paradigm designs to elicit accurate responses. Goldberg paradigm studies have often been lauded as one of the most effective ways to study gender bias (and other types of biases) based on its ability to control for extraneous variables (Eagly & Karau, 2002). By creating identical scenarios with differences only on the variable of interest, researchers can ascertain that positive findings are, in fact, due to the variable(s) in the study and not to other uncontrollable factors. Eagly & Johnson (1990), nonetheless, have argued that the use of this research tool creates artificial settings that participants have difficulty interpreting. In fact, one participant in the present study wrote an email to the investigator expressing concern over having to judge a leader relying solely on one case study. Participants may have found identifying with the scenarios and/or leaders difficult, despite the vignettes being based on real-life examples. For instance, the task-error scenario used in this study appears to have been particularly challenging. All but one of the items with problematic loadings in the EFA belonged to the management of unit subscale, suggesting a potential discrepancy between the information provided in the vignette and the subscales used to measure it. The participant who emailed about having a difficult time rating the leader belonged to one of the task-based groups. The cases required for use in the Goldberg paradigm may thus be too artificial, limited, or may oversimplify the gender bias phenomenon to the point that

respondents cannot make complex leader judgments. Swim et al. (1989) proposed a similar view when highlighting the pitfalls of Goldberg paradigm studies. They note that even though replications of Goldberg's (1968) original experiment have not provided conclusive proof of the presence of gender prejudice, the dearth of empirical support does not negate the existence of discrimination towards women. Complex processes dominate the gender bias arena (Swim et al., 1989). Accordingly, the mere absence of statistical significance does not necessarily equate to an actual lack of gender bias, but rather to the difficulty of exploring complex processes using certain methodologies, and finding actual differences.

In any case, the present study may indicate it is time to move on from the Goldberg paradigm toward alternative avenues of research to more effectively investigate gender bias in leadership, including academe. Despite currently being one of the most widely-used methods to study prejudice and discrimination (Savonick & Davidson, 2017), researchers may wish to utilize different, more innovative methodologies that are better able to discern whether, and how, gender bias reveals itself. In higher education, studying the actual numbers and percentages of women versus men in aspects such as publishing, hiring, promotion, tenure, and students' teaching evaluations may provide a more accurate picture as to where and how prejudice manifests itself. Following-up on the numbers with qualitative analysis can confirm (or refute) the statistics and provide additional valuable information.

For example, in academia, exploring the amount of publications and citations has yielded important findings. Differences in the quantity of publications between male and female faculty (e.g. Jagsi et al., 2006; Kahn & Onion, 2016); comparing the number of publications women achieve versus the actual number of full-time female faculty in those fields (e.g. Bird, 2011; West, Jacquet, King, Correll, & Bergstrom, 2013); exploring how often papers written by women

versus men are cited, including self-citations (e.g. King, Correll, Jacquet, Bergstrom & West, 2015; Knobloch-Westerwick & Glynn, 2013; Maliniak, Powers, & Walter, 2013); or determining how likely female faculty members are to be listed as the sole author or as the first author in journal publications (e.g. West et al., 2013), can provide indications of differential treatment based on gender. Likewise, the study of students' teaching evaluations has also yielded evidence of gender bias in the classroom, where women faculty commonly receive lower ratings than their male peers, despite equal or exceeding competence (e.g. Boring, Ottoboni, & Stark, 2016; Miles & House, 2015; Wagner, Rieger, & Voorvelt, 2016). Lastly, studies attempting to understand the experiences of women, such as Newsome's (2008) qualitative research on the reasons why women are less likely than men to pursue academic careers in Chemistry, can provide a more comprehensive picture of gender bias in the field and how to best address it.

It is important to note, however, that the data obtained in this investigation may be of practical "significance" in that a lack of gender bias is often seen as a desirable outcome. Although gender bias has been deemed a common occurrence in the workplace (Eagly & Carli, 2007), the ultimate goal for organizations is to reduce prejudice as much as possible. Failing to provide a fair and just workplace can lead to damaging consequences legally, financially, and socially (Cox, 1994; Eagly, 2007; Northhouse, 2013). In a Western society striving for greater equality, prejudicial attitudes towards women are no longer acceptable (Walker et al. 2013). Therefore, the absence of significant differences in ratings of male and female leaders may inherently be a "positive" – albeit statistically insignificant - finding.

For this reason, scholars have long advocated for the creation of journals that focus on non-scientific findings as a way to diffuse important results that did not necessarily reach the .05 alpha level. Reeh (2012), for example, has argued in favor of establishing journals inclusive of –

or focused solely on – results that do not reach statistical significance “so that future researchers do not remain ignorant of unsupported assumptions and methods that did not work” (p. 11).

Likewise, the “Journal of Non-Significant Differences, [...] a student-led, peer reviewed journal designed to highlight the value of non-significant research findings [...]” (Center for Innovation in Research and Teaching, n/a, para 1) was founded under the premise “that research does not have to be significant to provide valuable insight into ongoing scholarship” (Center for Innovation in Research and Teaching, n/a, para 1). In brief, just because research findings such as those of the present study do not reach the significance levels desired does not mean that they are unimportant or undeserving of mention (and/or publication).

Finally, the advent of new theories of leadership, such as transformational, team, and servant leadership may be prompting changes in the way leadership is conceptualized (Eagly & Carli, 2003; Eagly & Carli, 2007; Eagly & Karau, 2002; McCullough, 2011; Northouse, 2013). The leadership construct appears to be evolving to embrace more traditionally feminine qualities (Eagly & Carli, 2003; Eagly & Carli, 2007). Thus, newer ways of thinking may be permeating the workplace, particularly academia (which tends to be at the forefront of scientific research and innovation), to impact individuals’ views of leadership. Transformational leadership has been posited in the literature as the future of organizations (Bass & Riggio, 2006; Lopez & Ensari, 2014), including academia (McCullough, 2011), and women have often been regarded as more transformational than men (Bass & Riggio, 2006; Eagly et al., 2003; McCullough, 2011; Northouse, 2013). Women are therefore increasingly viewed as possessing the tools necessary for effective leadership. Similarly, Eagly and Carli (2007) have recommended that future leaders possess a balance of both feminine and masculine styles to be successful in their roles. Accordingly, a move toward, or an increase in the importance placed on more “feminine”

leadership traits, and the realization that women appear to embrace effective leadership styles such as transformational leadership, may be changing the traditional view of leadership as male. Non-significant findings in the present study may reflect such shifts in mentality and new leadership trends.

Directions for future research

From a research perspective, the present findings signal the need to determine whether the results regarding gender bias hold true across other academic settings. For instance, Lee and Won (2014) list a number of factors that can affect pay differentials between male and female faculty at the assistant professor level, such as the institution's size; whether it is public or privately funded; whether it is classified as research-intensive/extensive or other; the "concentration of high-paying disciplines" within the institution (p. 335); the percentage of women serving in the respective institution's state legislature; the degree or severity of the wage gap between men and women for the state; and the region in which it is located. This suggests universities can differ greatly across a number of key factors with regard to differential treatment based on gender. It further suggests that conducting the study under different academic settings may yield different results. To determine whether non-significance does or does not extend to other colleges and universities, both similar and dissimilar to the one used in the present study, replication is necessary.

Furthermore, just as it cannot be presumed that different institutions of higher education will behave the same, it cannot be surmised that other organizations (i.e. institutions in other industries) will behave equally. The context under which research unfolds – that is, the degree of masculinity or femininity of the organizational setting – appears to affect the results (Eagly et al., 1995; Eagly & Carli, 2003). Thoroughgood et al. (2012), for example, found that men were

rated significantly lower on task and relationship performance effectiveness as well as on desire to work for the leader when the case study took place in a construction setting, while no significant differences were found between male and female leaders in a nursing setting. Based on the results of Thoroughgood et al. (2012), where the study takes place happens to make a difference in whether, and the degree to which, gender bias reveals itself. Moreover, as predominantly liberal institutions (Maranto & Woessner, 2012), the premises of prejudicial attitudes towards women that apply to other industries may not directly translate to higher education. Given the tendency for higher education to be more liberal, as well as on the forefront of academic research, the behavior of colleges and universities are likely to differ from organizations in other contexts, say, religious organizations or construction companies. Thus, replicating research in different industries and contexts could offer important insights on gender bias across numerous organizational sectors.

From a theoretical perspective, the present findings suggest a need to reexamine role congruity theory in explaining gender bias in leadership. A major premise of role congruity theory is that leadership is still generally defined in masculine terms. The rise of leadership theories such as transformational leadership (Northhouse, 2013), with greater inclusion of feminine traits, suggests that a more profound investigation of alternative conceptualizations of leadership may be warranted. One such potential theory that may better help explain prejudicial attitudes toward women in the workplace is Glick and Fiske's (1996) hostile vs. benevolent sexism. Under this framework, there are two types of prejudice: overt, blatant discrimination (i.e. hostile sexism), and discrimination that disguises "sexist apathy" (Glick & Fiske, 1996, p. 491) under more positive overtones (i.e. benevolent sexism). The premise of this theory is that while hostile sexism is generally frowned upon and no longer regarded as acceptable, benevolent

sexism is, although less evident, common and often sanctioned by both men and women. Similar to role congruity theory, benevolent sexism endorses women's "positive traits relate[d] to social-emotional, not agentic dimensions" (Glick and Fiske, 1996, p. 492). Different from role congruity theory, however, benevolent sexism posits that prejudice masks itself under positive feelings and expressions such that negative stereotypes appear favorable instead. For example, in terms of women in academia, while female faculty may be regarded as better able to relate to students and create connections when teaching, they may be inadvertently seen as less competent than men at research and publishing, the latter which is the most important component in tenure acquisition. The positive feelings related to women's ability to interact with other students disguises the discrimination associated with the belief that women are not as effective at more important, masculine tasks.

Hostile and benevolent sexism thus help explain a major "conundrum for prejudice theorists: How can a group be almost universally disadvantaged yet loved?" (Glick & Fiske, 1996, p. 110). While hostile sexism displays negative attitudes towards women, benevolent sexism reflects how positive beliefs about women can still perpetuate stereotypical and prejudiced attitudes towards them. An important difference between role congruity theory and hostile versus benevolent sexism thus appears to be that the former, in line with more traditional views of gender bias, assumes "that attitudes toward women must be overwhelmingly hostile and contemptuous" (Glick & Fiske, 1996, p. 110), while the latter "shows that overall attitudes toward women are quite favorable" (Glick & Fiske, 1996, p. 110) yet discrimination is still possible. Future research should therefore delve deeper into whether, and how, hostile and benevolent sexism expresses in organizations, and whether it is better able to explain gender bias than role congruity theory.

Although not hypothesized, statistically significant differences in how leaders were rated based on type of error support the need for further study. Determining whether these findings can be replicated and, if so, the mechanisms underlying the relationships can provide an important contribution to the field. Little is known about how relationship versus task mistakes operate, and understanding the processes underlying each may not only contribute to the literature, but provide organizations with more effective avenues of dealing with errors in leadership.

A significant regression equation when diversity climate was added as a predictor of perceptions of leader effectiveness also supports the importance of diversity climate in organizational units such as departments. Leaders wishing to improve how subordinates view them, for example, may place a greater effort on enhancing diversity climate within their units. Likewise, organizations wanting to capitalize on the positive effects of diversity climate can focus on devising strategies and policies that foment a climate of diversity amongst their personnel.

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APPENDIX A: SURVEYS

A.1: Survey for the relationship-female scenario

Study Consent Form

Title:

The effects of diversity climate on faculty perceptions of academic leaders' effectiveness when leaders make mistakes

Performance site:

Louisiana State University Agricultural and Mechanical College
Online survey via Qualtrics

Contact information of study investigators:

Main investigator - Adriana Alfaro, Doctoral Candidate, (225) 910-2989, aalfar9@lsu.edu
Committee chair - Dr. Reid Bates, Director, (225) 578-5748, rabates@lsu.edu

Purpose of the study:

The primary purpose of this study is to investigate whether diversity climate affects faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders make mistakes, and how the type of error influences this relationship.

Study participants:

Faculty members from two colleges, selected a priori by the researcher, at a Research 1 (R1) Doctoral institution in the southeastern United States.

Study procedure:

Participants will receive an email either from their college and/or department's listserv, or directly from the lead investigator, with a link to the survey. In the survey, participants will be asked to rate their perceptions of the diversity climate in their current department, read a fictitious scenario pertaining to a department head, and rate the department head's effectiveness. Lastly, a few demographic questions will be requested. The time required to complete the survey should be approximately 15 minutes.

Benefits:

Participants who complete the survey will be eligible to participate in a raffle to win one of five \$100.00 Amazon gift cards.

Risks:

The only potential risk the study poses is the inadvertent release of sensitive information found in the survey. However, every effort will be made to maintain the confidentiality of the information.

Right to refuse:

Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy:

Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

Signature:

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a copy of this consent form, if requested.

Do you agree to participate in this study?

- a. Yes
- b. No

Part I

As you read the following statements please think about your experience in your present academic unit. Then rate the extent to which you think the statements are reflective of your academic unit. Use the scale provided below with ratings that extend from (1) strongly disagree to (7) strongly agree.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

- | | |
|--|---------------|
| 1. I feel that I have been treated differently in my academic unit because of my race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 2. My academic unit has a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 3. In my academic unit faculty members are given feedback and evaluated fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or | 1 2 3 4 5 6 7 |

social background

- | | |
|---|---------------|
| 4. In my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |
| 5. In my academic unit human resource policies (such as sabbaticals) are interpreted fairly for all faculty | 1 2 3 4 5 6 7 |
| 6. In my academic unit assignments are given based on the skills and abilities of faculty | 1 2 3 4 5 6 7 |
| 7. In my academic unit the formation of faculty network support groups is encouraged | 1 2 3 4 5 6 7 |
| 8. In my academic unit there is a mentoring program in use that identifies and prepares all minority and female faculty for promotion | 1 2 3 4 5 6 7 |
| 9. The "old boys network" is alive and well in my academic unit | 1 2 3 4 5 6 7 |
| 10. The university spends enough money and time on diversity awareness and related training | 1 2 3 4 5 6 7 |

Part II

Instructions: Please read the following scenario, and position yourself as a faculty member working under this academic director. Imagine how you would react if Dr. Charlotte Smith were the head of your department.

Dr. Charlotte Smith is the director of an academic department at Evencrest State University, a public Research 1 (R1) Doctoral institution in the southeastern United States. One of the department's graduate students has asked Dr. Smith to serve as chair of the student's dissertation committee. Although the dissertation's subject matter relates to her area of expertise, Dr. Smith is hesitant to assume additional responsibilities given her busy schedule. Furthermore, the student in question has a reputation in the department for requiring extensive guidance on long and complex projects. Dr. Smith concludes that delegating the chair responsibility to another faculty member within the department would be in the student's best interest. She advises the student to consider Dr. Mark Williams, a new assistant professor in the department, because Dr. Williams does not currently supervise any other doctoral students and thus presumably has more available time to dedicate to the student's dissertation research.

The student approaches Dr. Williams, who expresses reservations on accepting advising the student. This is partially because Dr. Williams only recently completed his own doctoral program as well as he is not a subject matter expert on the dissertation topic the student has selected. Dr. Smith, however, assures Dr. Williams that she will serve on the student's committee – albeit not as committee chair – and promises to guide Dr. Williams as needed. Feeling reassured by Dr. Smith's support and overt display of confidence, Dr. Williams accepts the task of chairing the student's dissertation committee.

As time goes by, Dr. Smith becomes less and less available, and Dr. Williams has growing difficulty directing the student. For example, the student opted for a quantitative dissertation, while Dr. Williams' strength is qualitative inquiry. Dr. Williams is struggling with the task at hand despite some assistance from other committee members. Adjusting to a new job, conducting research in the quest for tenure, and teaching a two-course workload has taken a toll on Dr. Williams. The student's frustration with the dissertation process is growing and Dr. Williams feels increasingly challenged to assist the student without the guidance promised by Dr. Smith. Despite numerous emails, messages left on Dr. Smith's phone, and attempts to schedule meetings, Dr. Smith is rarely able to meet or speak with Dr. Williams or provide concrete answers to Dr. Williams' questions. Dr. Williams thus fears that the student is falling behind.

Dr. Williams' fears materialize when the student's proposal date is pushed back several weeks because the committee's review of the proposal resulted in the decision that the student was not sufficiently prepared to present. Particular issue was taken with the student's research procedure, including the measurement tools and method of analysis selected. This setback means that the student will no longer be able to reach his original target graduation date, and will have to postpone the completion of the program for at least one semester. The student, greatly disappointed with the major delay, places the blame on Dr. Williams and feels that his ineffective advising led to a poor proposal. The student has also voiced his discontent to other doctoral students, who are now reluctant to ask Dr. Williams to participate on their dissertation committees.

Dr. Williams, on the other hand, blames Dr. Smith for the lack of guidance, help and cooperation which was initially promised. He feels that Dr. Smith placed him in a position for which he was unprepared, and did not provide the tools necessary for him to succeed. The negative remarks that have been circulating amongst the students have also affected Dr. Williams' self-confidence, and he increasingly fears that this experience may undesirably impact his path toward tenure. Consequently, Dr. Williams now resents Dr. Smith, and is considering whether his move to Evencrest State University was a wise decision and whether he is a good fit for the department.

Based on the information presented above please consider Dr. Charlotte Smith's actions as if she were the head of your academic unit. Then rate the extent to which you agree or disagree that the manner in which Dr. Smith conducted herself demonstrates the following behaviors. Use the

rating scale shown below that extends from (1) strongly disagree to (7) strongly agree. Remember, you are assessing the behavior of Dr. Charlotte Smith as if she were the head of your academic unit.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

I believe that **Dr. Charlotte Smith...**

- | | |
|--|---------------|
| 11. Insures that fair administrative procedures are followed | 1 2 3 4 5 6 7 |
| 12. Exercises fair and reasonable judgment in the allocation of resources | 1 2 3 4 5 6 7 |
| 13. Manages change constructively | 1 2 3 4 5 6 7 |
| 14. Delegates work effectively | 1 2 3 4 5 6 7 |
| 15. Handles administrative tasks in a timely manner | 1 2 3 4 5 6 7 |
| 16. Is an effective problem-solver | 1 2 3 4 5 6 7 |
| 17. Demonstrates knowledge of the department and programs within the unit | 1 2 3 4 5 6 7 |
| 18. Maintains an effective and efficient staff | 1 2 3 4 5 6 7 |
| 19. Demonstrates understanding of the needs and concerns of unit members | 1 2 3 4 5 6 7 |
| 20. Treats individuals fairly and with respect | 1 2 3 4 5 6 7 |
| 21. Maintains positive and productive relationships within the unit | 1 2 3 4 5 6 7 |
| 22. Maintains positive and productive relationships external to the unit | 1 2 3 4 5 6 7 |
| 23. Demonstrates awareness of the quality of professional work of unit members | 1 2 3 4 5 6 7 |
| 24. Demonstrates sensitivity to career and mentoring needs of unit members | 1 2 3 4 5 6 7 |
| 25. Is accessible to faculty and staff within the unit | 1 2 3 4 5 6 7 |
| 26. Demonstrates understanding of the needs and concerns of students | 1 2 3 4 5 6 7 |
| 27. Is accessible to students | 1 2 3 4 5 6 7 |

Part III

Instructions: Please answer the following demographic questions to the best of your ability.

28. What is your gender?

- a. Male
 - b. Female
 - c. Transgender
 - d. Other
 - e. Prefer not to say
29. What is your age?
- a. 21-30
 - b. 31-40
 - c. 41-50
 - d. 51-60
 - e. 61-70
 - f. 71-80
 - g. 81-90
 - h. 91-100
30. What is your race?
- a. White
 - b. Black or African American
 - c. Native American or American Indian
 - d. Asian
 - e. Native Hawaiian or Pacific Islander
 - f. Other
31. What is your ethnicity?
- a. Hispanic
 - b. Non-Hispanic
32. What is your faculty position?
- a. Full professor
 - b. Emeritus Professor
 - c. Associate Professor
 - d. Assistant Professor
 - e. Adjunct Professor
 - f. Instructor
33. Is your faculty appointment part-time or full-time?
- a. Part-time
 - b. Full-time
34. How many years of service have you had at LSU?
- a. Less than 1
 - b. 1-5
 - c. 6-10
 - d. 11-15
 - e. More than 15

Part IV

Message after survey completion:

Thank you for completing the survey; your participation is most greatly appreciated!

We would also like to inform you that the official title for this research is: “Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders’ effectiveness?” In other words, the primary purpose of this study is to investigate whether gender of leader influences faculty’s perceptions of leader effectiveness when academic directors make mistakes, and how type of error, diversity climate, and gender of subordinate affect this relationship. Participants were provided a study scenario with either a task-oriented or a relationship-oriented mistake committed by either a male or a female department director. Perceptions of leader effectiveness are then to be analyzed based on the gender of the leader and the gender of the respondent, as well as the type of error and the climate of diversity reported.

It was decided not to disclose the gender bias component of the investigation upfront to avoid influencing responses. Please forgive us for any potential distress or discomfort this revelation may cause you. Feel free to contact the lead investigator, Adriana Alfaro, at aalfar9@lsu.edu if you have any questions or concerns.

If you wish to participate in a raffle to win one of five \$100.00 Amazon gift cards, please copy-paste the following link to your web browser and add your email address:

www.qualtricslinkhere.com

Once again, thank you for your participation!

Part V

If you wish to participate in a raffle to **win one of five \$100.00 Amazon gift cards**, please add your email address below:

A.2: Survey for the relationship-male scenario

Study Consent Form

Title:

The effects of diversity climate on faculty perceptions of academic leaders' effectiveness when leaders make mistakes

Performance site:

Louisiana State University Agricultural and Mechanical College
Online survey via Qualtrics

Contact information of study investigators:

Main investigator - Adriana Alfaro, Doctoral Candidate, (225) 910-2989, aalfar9@lsu.edu
Committee chair - Dr. Reid Bates, Director, (225) 578-5748, rabates@lsu.edu

Purpose of the study:

The primary purpose of this study is to investigate whether diversity climate affects faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders make mistakes, and how the type of error influences this relationship.

Study participants:

Faculty members from two colleges, selected a priori by the researcher, at a Research 1 (R1) Doctoral institution in the southeastern United States.

Study procedure:

Participants will receive an email either from their college and/or department's listserv, or directly from the lead investigator, with a link to the survey. In the survey, participants will be asked to rate their perceptions of the diversity climate in their current department, read a fictitious scenario pertaining to a department head, and rate the department head's effectiveness. Lastly, a few demographic questions will be requested. The time required to complete the survey should be approximately 15 minutes.

Benefits:

Participants who complete the survey will be eligible to participate in a raffle to win one of five \$100.00 Amazon gift cards.

Risks:

The only potential risk the study poses is the inadvertent release of sensitive information found in the survey. However, every effort will be made to maintain the confidentiality of the information.

Right to refuse:

Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy:

Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

Signature:

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a copy of this consent form, if requested.

Do you agree to participate in this study?

- a. Yes
- b. No

Part I

As you read the following statements please think about your experience in your present academic unit. Then rate the extent to which you think the statements are reflective of your academic unit. Use the scale provided below with ratings that extend from (1) strongly disagree to (7) strongly agree.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

- | | |
|--|---------------|
| 1. I feel that I have been treated differently in my academic unit because of my race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 2. My academic unit has a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 3. In my academic unit faculty members are given feedback and evaluated fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |

- | | |
|---|---------------|
| 4. In my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |
| 5. In my academic unit human resource policies (such as sabbaticals) are interpreted fairly for all faculty | 1 2 3 4 5 6 7 |
| 6. In my academic unit assignments are given based on the skills and abilities of faculty | 1 2 3 4 5 6 7 |
| 7. In my academic unit the formation of faculty network support groups is encouraged | 1 2 3 4 5 6 7 |
| 8. In my academic unit there is a mentoring program in use that identifies and prepares all minority and female faculty for promotion | 1 2 3 4 5 6 7 |
| 9. The "old boys network" is alive and well in my academic unit | 1 2 3 4 5 6 7 |
| 10. The university spends enough money and time on diversity awareness and related training | 1 2 3 4 5 6 7 |

Part II

Instructions: Please read the following scenario, and position yourself as a faculty member working under this academic director. Imagine how you would react if Dr. Charles Smith were the head of your department.

Dr. Charles Smith is the director of an academic department at Evencrest State University, a public Research 1 (R1) Doctoral institution in the southeastern United States. One of the department's graduate students has asked Dr. Smith to serve as chair of the student's dissertation committee. Although the dissertation's subject matter relates to his area of expertise, Dr. Smith is hesitant to assume additional responsibilities given his busy schedule. Furthermore, the student in question has a reputation in the department for requiring extensive guidance on long and complex projects. Dr. Smith concludes that delegating the chair responsibility to another faculty member within the department would be in the student's best interest. He advises the student to consider Dr. Mark Williams, a new assistant professor in the department, because Dr. Williams does not currently supervise any other doctoral students and thus presumably has more available time to dedicate to the student's dissertation research.

The student approaches Dr. Williams, who expresses reservations on accepting advising the student. This is partially because Dr. Williams only recently completed his own doctoral

program as well as he is not a subject matter expert on the dissertation topic the student has selected. Dr. Smith, however, assures Dr. Williams that he will serve on the student's committee – albeit not as committee chair – and promises to guide Dr. Williams as needed. Feeling reassured by Dr. Smith's support and overt display of confidence, Dr. Williams accepts the task of chairing the student's dissertation committee.

As time goes by, Dr. Smith becomes less and less available, and Dr. Williams has growing difficulty directing the student. For example, the student opted for a quantitative dissertation, while Dr. Williams' strength is qualitative inquiry. Dr. Williams is struggling with the task at hand despite some assistance from other committee members. Adjusting to a new job, conducting research in the quest for tenure, and teaching a two-course workload has taken a toll on Dr. Williams. The student's frustration with the dissertation process is growing and Dr. Williams feels increasingly challenged to assist the student without the guidance promised by Dr. Smith. Despite numerous emails, messages left on Dr. Smith's phone, and attempts to schedule meetings, Dr. Smith is rarely able to meet or speak with Dr. Williams or provide concrete answers to Dr. Williams' questions. Dr. Williams thus fears that the student is falling behind.

Dr. Williams' fears materialize when the student's proposal date is pushed back several weeks because the committee's review of the proposal resulted in the decision that the student was not sufficiently prepared to present. Particular issue was taken with the student's research procedure, including the measurement tools and method of analysis selected. This setback means that the student will no longer be able to reach his original target graduation date, and will have to postpone the completion of the program for at least one semester. The student, greatly disappointed with the major delay, places the blame on Dr. Williams and feels that his ineffective advising led to a poor proposal. The student has also voiced his discontent to other doctoral students, who are now reluctant to ask Dr. Williams to participate on their dissertation committees.

Dr. Williams, on the other hand, blames Dr. Smith for the lack of guidance, help and cooperation which was initially promised. He feels that Dr. Smith placed him in a position for which he was unprepared, and did not provide the tools necessary for him to succeed. The negative remarks that have been circulating amongst the students have also affected Dr. Williams' self-confidence, and he increasingly fears that this experience may undesirably impact his path toward tenure. Consequently, Dr. Williams now resents Dr. Smith, and is considering whether his move to Evencrest State University was a wise decision and whether he is a good fit for the department.

Based on the information presented above please consider Dr. Charles Smith's actions as if he were the head of your academic unit. Then rate the extent to which you agree or disagree that the manner in which Dr. Smith conducted himself demonstrates the following behaviors. Use the rating scale shown below that extends from (1) strongly disagree to (7) strongly agree. Remember, you are assessing the behavior of Dr. Charles Smith as if he were the head of your academic unit.

- 1 – Strongly Disagree**
2 – Disagree
3 – Somewhat Disagree
4 – Neither Agree nor Disagree
5 – Somewhat Agree
6 – Agree
7 – Strongly Agree

I believe that **Dr. Charles Smith...**

- | | |
|--|---------------|
| 11. Insures that fair administrative procedures are followed | 1 2 3 4 5 6 7 |
| 12. Exercises fair and reasonable judgment in the allocation of resources | 1 2 3 4 5 6 7 |
| 13. Manages change constructively | 1 2 3 4 5 6 7 |
| 14. Delegates work effectively | 1 2 3 4 5 6 7 |
| 15. Handles administrative tasks in a timely manner | 1 2 3 4 5 6 7 |
| 16. Is an effective problem-solver | 1 2 3 4 5 6 7 |
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| 19. Demonstrates understanding of the needs and concerns of unit members | 1 2 3 4 5 6 7 |
| 20. Treats individuals fairly and with respect | 1 2 3 4 5 6 7 |
| 21. Maintains positive and productive relationships within the unit | 1 2 3 4 5 6 7 |
| 22. Maintains positive and productive relationships external to the unit | 1 2 3 4 5 6 7 |
| 23. Demonstrates awareness of the quality of professional work of unit members | 1 2 3 4 5 6 7 |
| 24. Demonstrates sensitivity to career and mentoring needs of unit members | 1 2 3 4 5 6 7 |
| 25. Is accessible to faculty and staff within the unit | 1 2 3 4 5 6 7 |
| 26. Demonstrates understanding of the needs and concerns of students | 1 2 3 4 5 6 7 |
| 27. Is accessible to students | 1 2 3 4 5 6 7 |

Part III

Instructions: Please answer the following demographic questions to the best of your ability.

28. What is your gender?
- Male
 - Female
 - Transgender

- d. Other
- e. Prefer not to say

29. What is your age?

- a. 21-30
- b. 31-40
- c. 41-50
- d. 51-60
- e. 61-70
- f. 71-80
- g. 81-90
- h. 91-100

30. What is your race?

- a. White
- b. Black or African American
- c. Native American or American Indian
- d. Asian
- e. Native Hawaiian or Pacific Islander
- f. Other

31. What is your ethnicity?

- a. Hispanic
- b. Non-Hispanic

32. What is your faculty position?

- a. Full professor
- b. Emeritus Professor
- c. Associate Professor
- d. Assistant Professor
- e. Adjunct Professor
- f. Instructor

33. Is your faculty appointment part-time or full-time?

- a. Part-time
- b. Full-time

34. How many years of service have you had at LSU?

- a. Less than 1
- b. 1-5
- c. 6-10
- d. 11-15
- e. More than 15

Part IV

Message after survey completion:

Thank you for completing the survey; your participation is most greatly appreciated!

We would also like to inform you that the official title for this research is: “Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders’ effectiveness?” In other words, the primary purpose of this study is to investigate whether gender of leader influences faculty’s perceptions of leader effectiveness when academic directors make mistakes, and how type of error, diversity climate, and gender of subordinate affect this relationship. Participants were provided a study scenario with either a task-oriented or a relationship-oriented mistake committed by either a male or a female department director. Perceptions of leader effectiveness are then to be analyzed based on the gender of the leader and the gender of the respondent, as well as the type of error and the climate of diversity reported.

It was decided not to disclose the gender bias component of the investigation upfront to avoid influencing responses. Please forgive us for any potential distress or discomfort this revelation may cause you. Feel free to contact the lead investigator, Adriana Alfaro, at aalfar9@lsu.edu if you have any questions or concerns.

If you wish to participate in a raffle to win one of five \$100.00 Amazon gift cards, please click on the following link and add your email address:

www.qualtricslinkhere.com

Once again, thank you for your participation!

Part V

If you wish to participate in a raffle to **win one of five \$100.00 Amazon gift cards**, please add your email address below:

A.3: Survey for the relationship-male scenario

Study Consent Form

Title:

The effects of diversity climate on faculty perceptions of academic leaders' effectiveness when leaders make mistakes

Performance site:

Louisiana State University Agricultural and Mechanical College
Online survey via Qualtrics

Contact information of study investigators:

Main investigator - Adriana Alfaro, Doctoral Candidate, (225) 910-2989, aalfar9@lsu.edu
Committee chair - Dr. Reid Bates, Director, (225) 578-5748, rabates@lsu.edu

Purpose of the study:

The primary purpose of this study is to investigate whether diversity climate affects faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders make mistakes, and how the type of error influences this relationship.

Study participants:

Faculty members from two colleges, selected a priori by the researcher, at a Research 1 (R1) Doctoral institution in the southeastern United States.

Study procedure:

Participants will receive an email either from their college and/or department's listserv, or directly from the lead investigator, with a link to the survey. In the survey, participants will be asked to rate their perceptions of the diversity climate in their current department, read a fictitious scenario pertaining to a department head, and rate the department head's effectiveness. Lastly, a few demographic questions will be requested. The time required to complete the survey should be approximately 15 minutes.

Benefits:

Participants who complete the survey will be eligible to participate in a raffle to win one of five \$100.00 Amazon gift cards.

Risks:

The only potential risk the study poses is the inadvertent release of sensitive information found in the survey. However, every effort will be made to maintain the confidentiality of the information.

Right to refuse:

Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy:

Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

Signature:

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a copy of this consent form, if requested.

Do you agree to participate in this study?

- a. Yes
- b. No

Part I

As you read the following statements please think about your experience in your present academic unit. Then rate the extent to which you think the statements are reflective of your academic unit. Use the scale provided below with ratings that extend from (1) strongly disagree to (7) strongly agree.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

- | | |
|--|---------------|
| 1. I feel that I have been treated differently in my academic unit because of my race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 2. My academic unit has a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 3. In my academic unit faculty members are given feedback and evaluated fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |

- | | |
|---|---------------|
| 4. In my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |
| 5. In my academic unit human resource policies (such as sabbaticals) are interpreted fairly for all faculty | 1 2 3 4 5 6 7 |
| 6. In my academic unit assignments are given based on the skills and abilities of faculty | 1 2 3 4 5 6 7 |
| 7. In my academic unit the formation of faculty network support groups is encouraged | 1 2 3 4 5 6 7 |
| 8. In my academic unit there is a mentoring program in use that identifies and prepares all minority and female faculty for promotion | 1 2 3 4 5 6 7 |
| 9. The "old boys network" is alive and well in my academic unit | 1 2 3 4 5 6 7 |
| 10. The university spends enough money and time on diversity awareness and related training | 1 2 3 4 5 6 7 |

Part II

Instructions: Please read the following scenario, and position yourself as a faculty member working under this academic director. Imagine how you would react if Dr. Charlotte Smith were the head of your department.

Dr. Charlotte Smith is the director of an academic department at Evencrest State University, a public Research 1 (R1) Doctoral institution in the southeastern United States. A colleague at a peer university has informed Dr. Smith that a \$75,000 internal grant designed to support collaborative research across institutions has become available, and that Dr. Smith's area of study falls under the parameters of the grant. Recognizing the opportunity, Dr. Smith seeks additional information on the grant online. She discovers the deadline is seven days away, and is unsure as to whether she can meet the required timeline, especially without additional help. As head of the department, Dr. Smith has a great deal of responsibility on her shoulders. In addition to a very busy schedule, the recent implementation of a new curriculum in the department has added increased pressure and further diminished time she might have for additional tasks.

Dr. Smith reaches out to a junior faculty member in her department, Dr. Mark Williams, to assist with the Request for Proposal (RFP). In exchange for Dr. Williams' help, Dr. Smith offers

him the opportunity to co-author any publications resulting from the grant research they conduct. Dr. Williams considers this an opportunity to gain valuable grant-writing experience and to add publications to his resume to strengthen his bid for tenure. Dr. Williams hence agrees to participate in the RFP. Dr. Smith also enlists the help of her graduate assistant, a doctoral student, whom she knows is dependable and produces high-quality work.

The trio works as fast as possible, but the deadline quickly approaches and there is a strong possibility that they will not make it. Dr. Smith calls the department in charge of overseeing the grant to confirm the final date for document submittal, and to inquire as to whether an extension can be granted. The agent who responds to the call assures Dr. Smith that the deadline posted online is not definitive, and that a 10-business-days grace period has been traditionally granted. Dr. Smith fails to record the name of the agent whom she spoke with, or to ask for written confirmation of the deadline extension. Working with the extended deadline, Dr. Smith, Dr. Williams, and the graduate student are able to produce a strong grant proposal, managing to submit it after the published “official” deadline but within the unofficial “grace period.”

Dr. Smith does not need to wait too long for a reply. A week later, she receives an email from the department in charge of overseeing the grant notifying her that the grant application has been rejected due to its late submittal. Dr. Smith calls the department and asks to speak with its head. The head of the department confirms the news and informs her that, although in the past some discretion has been granted for late submittals, there is no official “grace period” policy. In fact, due to a recent change in management, the practice has been banned altogether. Having no evidence of the prior phone conversation held with the department’s agent, Dr. Smith finds it difficult to appeal the decision, and resigns herself to having missed this very promising grant opportunity.

Not only is she greatly upset, frustrated and embarrassed by the mishap, but she is now faced with either having to find an alternative source of funding, find a way of securing departmental funds (which may potentially divert funds from other areas and/or projects within the department), significantly cut the extent of her research, or discard the research proposal altogether. Dr. Smith is also concerned about having involved Dr. Williams in the RFP, taking up his valuable time and not delivering on the promise of additional publications for Dr. Williams’ resume. The loss of the grant is thus not only a significant setback for her, but also for Dr. Williams and for the rest of the department. To make matters worse, upon hearing the news, the dean of the college (and Dr. Smith’s boss), expresses disapproval of the manner in which the grant application was handled. Dr. Smith fears that the error will undermine her credibility as an effective leader amongst the faculty members under her supervision, as well as the students in her department.

Based on the information presented above please consider Dr. Charlotte Smith’s actions as if she were the head of your academic unit. Then rate the extent to which you agree or disagree that the manner in which Dr. Smith conducted herself demonstrates the following behaviors. Use the

rating scale shown below that extends from (1) strongly disagree to (7) strongly agree. Remember, you are assessing the behavior of Dr. Charlotte Smith as if she were the head of your academic unit.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

I believe that **Dr. Charlotte Smith...**

- | | |
|--|---------------|
| 11. Insures that fair administrative procedures are followed | 1 2 3 4 5 6 7 |
| 12. Exercises fair and reasonable judgment in the allocation of resources | 1 2 3 4 5 6 7 |
| 13. Manages change constructively | 1 2 3 4 5 6 7 |
| 14. Delegates work effectively | 1 2 3 4 5 6 7 |
| 15. Handles administrative tasks in a timely manner | 1 2 3 4 5 6 7 |
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| 17. Demonstrates knowledge of the department and programs within the unit | 1 2 3 4 5 6 7 |
| 18. Maintains an effective and efficient staff | 1 2 3 4 5 6 7 |
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| 23. Demonstrates awareness of the quality of professional work of unit members | 1 2 3 4 5 6 7 |
| 24. Demonstrates sensitivity to career and mentoring needs of unit members | 1 2 3 4 5 6 7 |
| 25. Is accessible to faculty and staff within the unit | 1 2 3 4 5 6 7 |
| 26. Demonstrates understanding of the needs and concerns of students | 1 2 3 4 5 6 7 |
| 27. Is accessible to students | 1 2 3 4 5 6 7 |

Part III

Instructions: Please answer the following demographic questions to the best of your ability.

28. What is your gender?

- a. Male
 - b. Female
 - c. Transgender
 - d. Other
 - e. Prefer not to say
29. What is your age?
- a. 21-30
 - b. 31-40
 - c. 41-50
 - d. 51-60
 - e. 61-70
 - f. 71-80
 - g. 81-90
 - h. 91-100
30. What is your race?
- a. White
 - b. Black or African American
 - c. Native American or American Indian
 - d. Asian
 - e. Native Hawaiian or Pacific Islander
 - f. Other
31. What is your ethnicity?
- a. Hispanic
 - b. Non-Hispanic
32. What is your faculty position?
- a. Full professor
 - b. Emeritus Professor
 - c. Associate Professor
 - d. Assistant Professor
 - e. Adjunct Professor
 - f. Instructor
33. Is your faculty appointment part-time or full-time?
- a. Part-time
 - b. Full-time
34. How many years of service have you had at LSU?
- a. Less than 1
 - b. 1-5
 - c. 6-10
 - d. 11-15
 - e. More than 15

Part IV

Message after survey completion:

Thank you for completing the survey; your participation is most greatly appreciated!

We would also like to inform you that the official title for this research is: “Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders’ effectiveness?” In other words, the primary purpose of this study is to investigate whether gender of leader influences faculty’s perceptions of leader effectiveness when academic directors make mistakes, and how type of error, diversity climate, and gender of subordinate affect this relationship. Participants were provided a study scenario with either a task-oriented or a relationship-oriented mistake committed by either a male or a female department director. Perceptions of leader effectiveness are then to be analyzed based on the gender of the leader and the gender of the respondent, as well as the type of error and the climate of diversity reported.

It was decided not to disclose the gender bias component of the investigation upfront to avoid influencing responses. Please forgive us for any potential distress or discomfort this revelation may cause you. Feel free to contact the lead investigator, Adriana Alfaro, at aalfar9@lsu.edu if you have any questions or concerns.

If you wish to participate in a raffle to win one of five \$100.00 Amazon gift cards, please click on the following link and add your email address:

www.qualtricslinkhere.com

Once again, thank you for your participation!

Part V

If you wish to participate in a raffle to **win one of five \$100.00 Amazon gift cards**, please add your email address below:

A.4: Survey for the relationship-male scenario

Study Consent Form

Title:

The effects of diversity climate on faculty perceptions of academic leaders' effectiveness when leaders make mistakes

Performance site:

Louisiana State University Agricultural and Mechanical College
Online survey via Qualtrics

Contact information of study investigators:

Main investigator - Adriana Alfaro, Doctoral Candidate, (225) 910-2989, aalfar9@lsu.edu
Committee chair - Dr. Reid Bates, Director, (225) 578-5748, rabates@lsu.edu

Purpose of the study:

The primary purpose of this study is to investigate whether diversity climate affects faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders make mistakes, and how the type of error influences this relationship.

Study participants:

Faculty members from two colleges, selected a priori by the researcher, at a Research 1 (R1) Doctoral institution in the southeastern United States.

Study procedure:

Participants will receive an email either from their college and/or department's listserv, or directly from the lead investigator, with a link to the survey. In the survey, participants will be asked to rate their perceptions of the diversity climate in their current department, read a fictitious scenario pertaining to a department head, and rate the department head's effectiveness. Lastly, a few demographic questions will be requested. The time required to complete the survey should be approximately 15 minutes.

Benefits:

Participants who complete the survey will be eligible to participate in a raffle to win one of five \$100.00 Amazon gift cards.

Risks:

The only potential risk the study poses is the inadvertent release of sensitive information found in the survey. However, every effort will be made to maintain the confidentiality of the information.

Right to refuse:

Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy:

Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

Signature:

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a copy of this consent form, if requested.

Do you agree to participate in this study?

- a. Yes
- b. No

Part I

As you read the following statements please think about your experience in your present academic unit. Then rate the extent to which you think the statements are reflective of your academic unit. Use the scale provided below with ratings that extend from (1) strongly disagree to (7) strongly agree.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7 – Strongly Agree**

- | | |
|--|---------------|
| 1. I feel that I have been treated differently in my academic unit because of my race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 2. My academic unit has a track record of hiring and promoting faculty members objectively regardless of their race, sex, religion, age, or sexual orientation | 1 2 3 4 5 6 7 |
| 3. In my academic unit faculty members are given feedback and evaluated fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |

- | | |
|---|---------------|
| 4. In my academic unit promotion and tenure decisions are made fairly, regardless of factors such as the faculty member's race, sex, age, sexual orientation or social background | 1 2 3 4 5 6 7 |
| 5. In my academic unit human resource policies (such as sabbaticals) are interpreted fairly for all faculty | 1 2 3 4 5 6 7 |
| 6. In my academic unit assignments are given based on the skills and abilities of faculty | 1 2 3 4 5 6 7 |
| 7. In my academic unit the formation of faculty network support groups is encouraged | 1 2 3 4 5 6 7 |
| 8. In my academic unit there is a mentoring program in use that identifies and prepares all minority and female faculty for promotion | 1 2 3 4 5 6 7 |
| 9. The "old boys network" is alive and well in my academic unit | 1 2 3 4 5 6 7 |
| 10. The university spends enough money and time on diversity awareness and related training | 1 2 3 4 5 6 7 |

Part II

Instructions: Please read the following scenario, and position yourself as a faculty member working under this academic director. Imagine how you would react if Dr. Charles Smith were the head of your department.

Dr. Charles Smith is the director of an academic department at Evencrest State University, a public Research 1 (R1) Doctoral institution in the southeastern United States. A colleague at a peer university has informed Dr. Smith that a \$75,000 internal grant designed to support collaborative research across institutions has become available, and that Dr. Smith's area of study falls under the parameters of the grant. Recognizing the opportunity, Dr. Smith seeks additional information on the grant online. He discovers the deadline is seven days away, and is unsure as to whether he can meet the required timeline, especially without additional help. As head of the department, Dr. Smith has a great deal of responsibility on his shoulders. In addition to a very busy schedule, the recent implementation of a new curriculum in the department has added increased pressure and further diminished time he might have for additional tasks.

Dr. Smith reaches out to a junior faculty member in his department, Dr. Mark Williams, to assist with the Request for Proposal (RFP). In exchange for Dr. Williams' help, Dr. Smith offers

him the opportunity to co-author any publications resulting from the grant research they conduct. Dr. Williams considers this an opportunity to gain valuable grant-writing experience and to add publications to his resume to strengthen his bid for tenure. Dr. Williams hence agrees to participate in the RFP. Dr. Smith also enlists the help of his graduate assistant, a doctoral student, whom he knows is dependable and produces high-quality work.

The trio works as fast as possible, but the deadline quickly approaches and there is a strong possibility that they will not make it. Dr. Smith calls the department in charge of overseeing the grant to confirm the final date for document submittal, and to inquire as to whether an extension can be granted. The agent who responds to the call assures Dr. Smith that the deadline posted online is not definitive, and that a 10-business-days grace period has been traditionally granted. Dr. Smith fails to record the name of the agent whom he spoke with, or to ask for written confirmation of the deadline extension. Working with the extended deadline, Dr. Smith, Dr. Williams, and the graduate student are able to produce a strong grant proposal, managing to submit it after the published “official” deadline but within the unofficial “grace period.”

Dr. Smith does not need to wait too long for a reply. A week later, he receives an email from the department in charge of overseeing the grant notifying him that the grant application has been rejected due to its late submittal. Dr. Smith calls the department and asks to speak with its head. The head of the department confirms the news and informs him that, although in the past some discretion has been granted for late submittals, there is no official “grace period” policy. In fact, due to a recent change in management, the practice has been banned altogether. Having no evidence of the prior phone conversation held with the department’s agent, Dr. Smith finds it difficult to appeal the decision, and resigns himself to having missed this very promising grant opportunity.

Not only is he greatly upset, frustrated and embarrassed by the mishap, but he is now faced with either having to find an alternative source of funding, find a way of securing departmental funds (which may potentially divert funds from other areas and/or projects within the department), significantly cut the extent of his research, or discard the research proposal altogether. Dr. Smith is also concerned about having involved Dr. Williams in the RFP, taking up his valuable time and not delivering on the promise of additional publications for Dr. Williams’ resume. The loss of the grant is thus not only a significant setback for him, but also for Dr. Williams and for the rest of the department. To make matters worse, upon hearing the news, the dean of the college (and Dr. Smith’s boss), expresses disapproval of the manner in which the grant application was handled. Dr. Smith fears that the error will undermine his credibility as an effective leader amongst the faculty members under his supervision, as well as the students in his department.

Based on the information presented above please consider Dr. Charles Smith’s actions as if he were the head of your academic unit. Then rate the extent to which you agree or disagree that the manner in which Dr. Smith conducted himself demonstrates the following behaviors. Use

the rating scale shown below that extends from (1) strongly disagree to (7) strongly agree. Remember, you are assessing the behavior of Dr. Charles Smith as if he were the head of your academic unit.

- 1 – Strongly Disagree**
- 2 – Disagree**
- 3 – Somewhat Disagree**
- 4 – Neither Agree nor Disagree**
- 5 – Somewhat Agree**
- 6 – Agree**
- 7– Strongly Agree**

I believe that **Dr. Charles Smith...**

- | | |
|--|---------------|
| 11. Insures that fair administrative procedures are followed | 1 2 3 4 5 6 7 |
| 12. Exercises fair and reasonable judgment in the allocation of resources | 1 2 3 4 5 6 7 |
| 13. Manages change constructively | 1 2 3 4 5 6 7 |
| 14. Delegates work effectively | 1 2 3 4 5 6 7 |
| 15. Handles administrative tasks in a timely manner | 1 2 3 4 5 6 7 |
| 16. Is an effective problem-solver | 1 2 3 4 5 6 7 |
| 17. Demonstrates knowledge of the department and programs within the unit | 1 2 3 4 5 6 7 |
| 18. Maintains an effective and efficient staff | 1 2 3 4 5 6 7 |
| 19. Demonstrates understanding of the needs and concerns of unit members | 1 2 3 4 5 6 7 |
| 20. Treats individuals fairly and with respect | 1 2 3 4 5 6 7 |
| 21. Maintains positive and productive relationships within the unit | 1 2 3 4 5 6 7 |
| 22. Maintains positive and productive relationships external to the unit | 1 2 3 4 5 6 7 |
| 23. Demonstrates awareness of the quality of professional work of unit members | 1 2 3 4 5 6 7 |
| 24. Demonstrates sensitivity to career and mentoring needs of unit members | 1 2 3 4 5 6 7 |
| 25. Is accessible to faculty and staff within the unit | 1 2 3 4 5 6 7 |
| 26. Demonstrates understanding of the needs and concerns of students | 1 2 3 4 5 6 7 |
| 27. Is accessible to students | 1 2 3 4 5 6 7 |

Part III

Instructions: Please answer the following demographic questions to the best of your ability.

28. What is your gender?

- a. Male
 - b. Female
 - c. Transgender
 - d. Other
 - e. Prefer not to say
29. What is your age?
- a. 21-30
 - b. 31-40
 - c. 41-50
 - d. 51-60
 - e. 61-70
 - f. 71-80
 - g. 81-90
 - h. 91-100
30. What is your race?
- a. White
 - b. Black or African American
 - c. Native American or American Indian
 - d. Asian
 - e. Native Hawaiian or Pacific Islander
 - f. Other
31. What is your ethnicity?
- a. Hispanic
 - b. Non-Hispanic
32. What is your faculty position?
- a. Full professor
 - b. Emeritus Professor
 - c. Associate Professor
 - d. Assistant Professor
 - e. Adjunct Professor
 - f. Instructor
33. Is your faculty appointment part-time or full-time?
- a. Part-time
 - b. Full-time
34. How many years of service have you had at LSU?
- a. Less than 1
 - b. 1-5
 - c. 6-10
 - d. 11-15
 - e. More than 15

Part IV

Message after survey completion:

Thank you for completing the survey; your participation is most greatly appreciated!

We would also like to inform you that the official title for this research is: “Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders’ effectiveness?” In other words, the primary purpose of this study is to investigate whether gender of leader influences faculty’s perceptions of leader effectiveness when academic directors make mistakes, and how type of error, diversity climate, and gender of subordinate affect this relationship. Participants were provided a study scenario with either a task-oriented or a relationship-oriented mistake committed by either a male or a female department director. Perceptions of leader effectiveness are then to be analyzed based on the gender of the leader and the gender of the respondent, as well as the type of error and the climate of diversity reported.

It was decided not to disclose the gender bias component of the investigation upfront to avoid influencing responses. Please forgive us for any potential distress or discomfort this revelation may cause you. Feel free to contact the lead investigator, Adriana Alfaro, at aalfar9@lsu.edu if you have any questions or concerns.

If you wish to participate in a raffle to win one of five \$100.00 Amazon gift cards, please click on the following link and add your email address:

www.qualtricslinkhere.com

Once again, thank you for your participation!

Part V

If you wish to participate in a raffle to **win one of five \$100.00 Amazon gift cards**, please add your email address below:

APPENDIX B: INITIAL EMAIL SENT TO POTENTIAL INTERVIEWEES

Esteemed Dr. XXXX,

My name is Adriana Alfaro, and I am currently a PhD student in Human Resource and Leadership Development at LSU. For my dissertation, I am investigating gender bias in academia when leaders make mistakes. More specifically, I am interested in whether the gender of an academic director affects faculty perceptions of leader effectiveness, and whether diversity climate, gender of subordinate, and type of error (i.e. task vs. relationship errors) influence this relationship. Study participants (LSU faculty members) will receive an electronic email requesting them to read a fictitious scenario depicting a male or female academic director committing either a task or a relationship mistake. They will also be asked to answer a few questions regarding their perceptions of the effectiveness of the director in question, and the climate of diversity they experience in their current departments.

To create realistic scenarios, I am contacting a number of LSU directors to request their assistance. If you have the time, I would like to interview you and ask you about errors you have experienced (either personally, have witnessed, or have heard of) committed by academic directors and/or deans either in your department, other departments, or at other institutions.

You may rest assured that your information will be kept under strict confidentiality. Your name will not be mentioned, and no identifying information – either personal or of a person or situation you may be referring to – will be revealed. The sole purpose of the interviews is to collect examples of mistakes that can – and do – happen to leaders in higher education to create convincing scenarios that faculty members can relate to. You will also receive a copy of the scenarios for your feedback and approval before they are distributed to study participants.

Your insights and experience are invaluable to this research, and would be most greatly appreciated. If you accept being interviewed, please send me an email so we can set a time, date, and location. I will also be sending you the error taxonomy to be utilized in the study, so that you may become more familiar with the types of tasks and relationship mistakes the study is investigating. Please feel free to address any questions or concerns you may have. You may also request a copy of the proposal and/or the finished dissertation, if you so desire.

Once again, thank you for your time and help. This research – and my degree completion – would not be possible without you. I look forward to hearing from you and meeting you in person.

Best Regards,

Adriana Alfaro
PhD Candidate
School of Human Resource and Workforce Development

APPENDIX C: HUNTER, TATE, DZIEWECZYNSKI, AND BEDELL-AVERS' (2011) TAXONOMY, WITH ADDED EXAMPLES OF ERRORS IN ACADEMIA

TASK ERRORS:

1. Type of error: Information search and structuring

a. Error subtype: *Acquiring information*

- i. Example: Failing to ask faculty and/or staff about an important occurrence or event in the department; failing to take faculty advice and/or opinions into consideration.

b. Error subtype: *Organizing and evaluating information*

- i. Example: Failing to address urgent department matters, such as a disgruntled student who is causing trouble; failing to prioritize important department needs, such as budgeting and planning.

c. Error subtype: *Feedback and control*

- i. Example: Failing to revise and/or update course requirements, course offerings, etc.; being unable to make appropriate changes in the face of budgeting crises.

2. Type of error: Information use in problem solving

a. Error subtype: *Identifying needs requirements*

- i. Example: Being unable to determine students' most pressing needs; ignoring HR policies and/or directives.

b. Error subtype: *Planning and coordinating*

- i. Example: Incorrectly or only partially implementing a new policy and/or directive from HR; leaving important projects such as the development of a much needed course unfinished.

c. Error subtype: *Communicating information*

- i. Example: Forgetting to inform faculty and staff about important events/situations/occurrences in meetings; writing very long emails to faculty, staff, and/or students that miss the target point.

3. Type of error: Managing material resources

a. Error subtype: *Obtaining and allocating material resources*

- i. Example: Forgetting to budget funds for much needed computer software for faculty and/or students; ordering the purchase of materials for the department that are not needed.

b. Error subtype: *Maintaining material resources*

- i. Example: Failing to care for delicate and/or costly equipment that is difficult to replace; placing little effort in maintaining a clean office space.

c. Error subtype: *Utilizing and monitoring material resources*

- i. Example: Micromanaging the ordering of needed supplies in the department; unwillingness to assist faculty, staff, and/or students in the supply of required materials.

RELATIONSHIP ERRORS:

1. Type of error: Managing personnel resources

- a. *Error subtype: Obtaining and allocating personnel resources*
 - i. Example: Assigning faculty to unnecessary or redundant tasks; failing to assign faculty members to courses they are best suited for teaching.
- b. *Error subtype: Developing personnel resources*
 - i. Example: Failing to provide faculty members with needed support to effectively pursue tenure; being unwilling to mentor or assist inexperienced faculty members and/or students in grant writing.
- c. *Error subtype: Motivating personnel resources*
 - i. Example: Forgetting to recognize and praise the effort of faculty members, particularly during difficult times or after the successful completion of important projects; forgetting to celebrate and/or communicate important faculty, staff and/or student achievements and milestones, such as obtaining a coveted grant.
- d. *Error subtype: Utilizing and monitoring personnel resources*
 - i. Example: Forgetting to provide timely and useful feedback or performance evaluations to faculty and staff; offering negative rather than constructive criticism to faculty, staff and/or students.

APPENDIX D: INTERVIEW PROTOCOL

1. What does a typical day at work look like for you?
2. Based on your experience, what are the most common mistakes committed by academic administrators who supervise faculty? How often are these errors committed?
3. Based on the error taxonomy provided, can you please describe a task error you have committed or seen another academic administrator (who supervises faculty) make? For example, what was the error? What led up to the error? What happened as a result of the error?
4. Do you think this task mistake affected how faculty members in the department viewed your leadership or that of the academic administrator? If so, how?
5. Based on the error taxonomy provided, can you please describe a relationship error you have committed or seen another academic administrator (who supervises faculty) make? For example, what was the error? What led up to the error? What happened as a result of the error?
6. Do you think this relationship mistake affected how faculty members in the department viewed your leadership or that of the academic administrator? If so, how?

APPENDIX E: STUDY CONSENT FORM FOR INTERVIEWEES

Study Consent Form

Title:	Gender bias in leadership: Do gender of leader, type of error, diversity climate, and gender of subordinate affect faculty perceptions of academic leaders' effectiveness?
Performance site:	Louisiana State University Agricultural and Mechanical College Online survey via Qualtrics
Contact information of study investigators:	Main investigator - Adriana Alfaro, Doctoral Candidate, (225) 910-2989, aalfar9@lsu.edu Committee chair - Dr. Reid Bates, Director, (225) 578-5748, rabates@lsu.edu
Purpose of the study:	The primary purpose of this study is to investigate whether gender bias influences faculty's perceptions of leadership effectiveness at a Research 1 (R1) Doctoral institution in the southeastern United States when high-ranking university leaders make mistakes, and how type of error, diversity climate, and gender of subordinate affect this relationship.
Study participants:	Two-to-four academic administrators who supervise faculty (e.g. academic directors, department chairs, associate deans, deans, etc.) at a Research 1 (R1) Doctoral institution in the southeastern U.S. will be interviewed to create the study scenarios that participants will read. Interviewees must have held their current position for at least two academic years. A random sample of 600 faculty members (instructors, assistant professors, associate professors, and full professors) from the same Research 1 (R1) Doctoral institution will then be drawn to read the scenarios and answer a series of survey questions. Participants must have been faculty members at the institution for at least one academic year.
Study procedure:	This study will be conducted in two phases. In the first phase, academic administrators who supervise faculty will be interviewed in a one-hour session to help create the study scenarios. In the second phase, participants selected from the random sample will receive an email with a link to the survey. The time required to complete the survey should not exceed a half-hour. Participants will first be asked to rate their perceptions of the diversity climate in their current department. They will then read a fictitious scenario regarding either a male or female leader committing either a task or a relationship mistake and be asked to rate the leader's effectiveness. A few demographic questions will then be requested.
Benefits:	The study should provide valuable information on perceptions of leadership effectiveness in the face of mistakes, and whether such perceptions vary according to the leader's gender.
Risks:	The only potential risk the study poses is the inadvertent release of sensitive information found in either the interviews and/or the survey. However, every effort will be made to maintain the confidentiality of the information.

Right to refuse: Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

Signature: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Participant Signature: _____

Date: _____

APPENDIX F: INTRODUCTORY EMAIL TO STUDY PARTICIPANTS

Esteemed LSU faculty member,

My name is Adriana Alfaro, and I am currently a PhD student in Human Resource and Leadership Development at LSU. For my dissertation research, I am investigating the relationship between diversity climate and perceptions of leader effectiveness when leaders in higher education make mistakes, and how the type of error influences this relationship. I would greatly appreciate it if you could please answer a few questions regarding the climate of diversity in your department, read a brief scenario depicting a fictional academic director, rate the director's effectiveness, and answer a few demographic questions. The survey should take approximately 15 minutes to complete. After completing the survey, you may also click on the link provided at the end of the survey and add your email for a chance to win one of five \$100.00 Amazon gift cards.

You may rest assured that all of the information provided will be kept under strict confidentiality, and no personal or potentially identifying information will be revealed. Please feel free to contact me with any questions or concerns. You may also request a copy of the final dissertation, if you so desire.

If you wish to participate, please access the link provided below. The survey will remain open until Friday, March 17th, 2017.

www.qualtricslinkhere.com

Thank you for your time and help. This research – and my degree completion – would not be possible without you.

Best regards,

Adriana Alfaro
PhD Candidate
School of Human Resource and Workforce Development

APPENDIX G: FOLLOW-UP EMAIL #1

Esteemed faculty members,

This email serves as a reminder that there is still time to participate in my dissertation study. The survey will remain open until March 17, 2017. After completing the survey, you will have the opportunity to enter into a drawing to **win one of five \$100.00 Amazon gift cards**. Your participation would be greatly appreciated. You may click on the following link to access the survey:

www.qualtricslinkhere.com

I would also like to thank all the faculty members who have participated in the survey. Your support and contribution to this process has been invaluable. Furthermore, I have a greater number of completed surveys than I do of emails registered for the raffle. If you filled out the survey but were unable to add your email, or have changed your mind and wish to participate in the raffle, please feel free to email me and I will gladly add you to the list.

Once again, thank you!

Sincerely,

Adriana Alfaro
PhD Candidate
School of Human Resource and Workforce Development

APPENDIX H: FOLLOW-UP EMAIL #2

Esteemed faculty members,

The deadline to participate in my dissertation survey has been extended to Wednesday, March 22, 2017, so there is still time to participate! After completing the survey, you will have the opportunity to enter into a drawing to win one of five \$100.00 Amazon gift cards. Your participation is most greatly appreciated!

I would also like to thank all the faculty members who have completed in the survey. Your support and contribution to this process has been invaluable. Furthermore, I have a greater number of completed surveys than I do of emails registered for the raffle. If you filled out the survey but were unable to add your email, or have changed your mind and wish to participate in the raffle, please feel free to email me and I will gladly add you to the list.

Once again, thank you!

Sincerely,

Adriana Alfaro
PhD Candidate
School of Human Resource and Workforce Development

VITA

Adriana Alfaro, a native of Panama City, Panama, graduated in 2008 from the University of Texas at Austin with a Bachelor of Arts in Psychology. She then worked for four years at a prestigious bank in her home country in the area of Organizational Culture, where her enthusiasm for training and organizational development arose. Thus, on August 2012 she embarked on her graduate studies, completing a Master's degree in Human Resource Education by 2013. Not yet entirely satisfied, Adriana's appetite for knowledge and education led her to undertake a doctoral degree in Human Resource Education, which she successfully completed in 2017. Her areas of interest include gender issues, leadership, and prejudice in the workplace. Adriana hopes to carry the valuable lessons learned throughout her studies back to her home country, where she can most positively impact the profession and contribute to its advancement.