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Gender and Ethnic Diversity in US Boardrooms: Is the Glass Ceiling Stifling Firm Financial Growth?

Dionne Roberts
Georgia State University

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The author of this dissertation is:

Dionne Roberts
Atlanta, GA

The director of this dissertation is:

Subhashish Samaddar
J. Mack Robinson College of Business
Georgia State University
Atlanta, GA 30302-4015

Gender and Ethnic Diversity in US Boardrooms:
Is the Glass Ceiling Stifling Firm Financial Growth?

By

Dionne Roberts

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Executive Doctorate in Business

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS
2017

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ACCEPTANCE

This dissertation was prepared under the direction of the Dionne Roberts Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

Richard Phillips, Dean

DISSERTATION COMMITTEE

Dr. Subhashish Samaddar (Chair)
Dr. Edward W. Miles
Dr. Satish V. Nargundkar

DEDICATION

This dissertation is dedicated to my two amazing children.

Mekhi, you are an exceptionally talented, remarkably charismatic, and extraordinarily intelligent young man. I've watched you excel in every endeavor you've undertaken since you were just four years old, and I'm extremely proud of the man you are becoming. At just 14 years old, you are brimming, not only with potential, but also with an abundance of achievements in so many domains, athletically, artistically, and academically. You are truly an inspiration.

Drea, you are incredibly beautiful, and your tenacity is unmatched. Although you are only four, you live by a creed of loyalty and compassion that even I can aspire to. Your youthful exuberance is infectious, and your thirst for knowledge impressive. You are a star on the rise, and I can't wait to see you shine.

This dissertation is also dedicated to my lifeline and support system, which I've been blessed to have throughout this strenuous journey: my wonderful family.

To my brother: You've persevered in the face of obstacles that would seem insurmountable to most others. You are a force of nature. Yet, your unrelenting generosity has never been a surprise. Thanks for always being there.

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I love you all deeply and truly. I do this for you, yet I couldn't have done this without you.

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ABSTRACT

Gender and Ethnic Diversity in US Boardrooms:
Is the Glass Ceiling Stifling Firm Financial Growth?

by

Dionne Roberts

May 2017

Committee Chair: Dr. Subhashish Samaddar

Major Academic Unit: Robinson College of Business

The purpose of this research was to explore the relationship between diversity within the boards of directors of American companies and firm financial growth. Specifically, this study sought to determine the question of whether a relationship exists between medium-term growth in a firm's accounting returns and the inclusion of a) minority women, b) ethnic minorities, or c) women on its board of directors. The supporting analysis for this inquiry included an in-depth examination of the five-year growth rates in ROE, ROA, and profit margins of 439 companies between 2011 and 2015. These companies operate across eight industry groups and are listed either on the New York Stock Exchange or the NASDAQ stock index. Results of the statistical analyses show significant increases in financial growth for companies with gender- and ethnically-diverse boards (when compared to boards consisting solely of white men). However, based on effect sizes, the most significant increases were found in the profit margins of companies with minority directors.

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I INTRODUCTION

I.1 Research Problem

The academic community has been instrumental in investigating racial and gender diversity (or the lack thereof) within American businesses since the 1970s, which marked the end of the Civil Rights Movement and the beginning of the second wave of the Feminist Movement (Joshi, Neely, Emrich, Griffiths, & George, 2015, p. 1461). Figure 1 below, taken directly from this *Academy of Management Journal* article, displays the quantity of research published in the journal on women's issues from that time frame through 2010. As the chart shows, only about 20 articles on women's studies were published during the 1970s. However, this number nearly doubled during the 1980s but then slowly declined in each decade thereafter to a steady rate of about 15 articles per year.

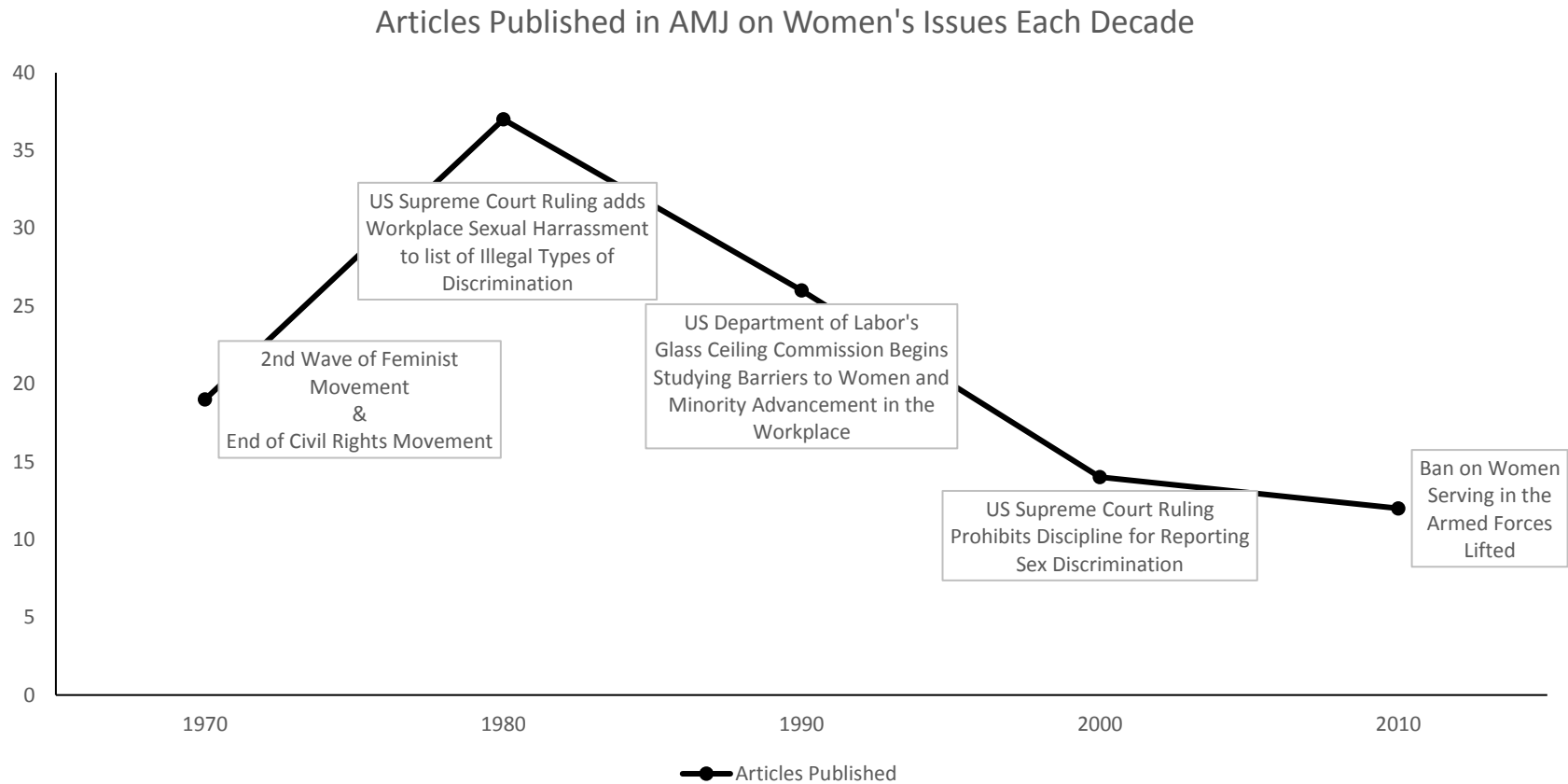


Figure 1: Number of Articles of Women's Issues

Number of articles on women's issues published in *Academy of Management Journal* from 1970 to 2010.

Adapted from "Gender Research in AMJ: An Overview of Five Decades of Empirical Research and Calls to Action" (p. 1460) by A. Joshi, B. Neely, C. Emrich, D. Griffiths, & G. George, 2015, *Academy of Management Journal*. Copyright 2015 by Academy of Management. Adapted with permission.

Mainstream literature in the field of corporate diversity has centered on the phenomenon of the limited inclusion of women and ethnic minorities (hereafter referred to as minorities) in top management/corporate executive positions and on boards of directors and on its potential causes and effects. Because of widespread discrimination practices, which were legal in the United States until the Civil Rights Act of 1964 went into effect, the country's workforce of women and minorities experienced limited occupational opportunities until the 1970s. During that period, private corporations as well as governmental agencies, often propelled by affirmative action policies, were under fire to achieve an adequate amount of diversity during employee recruitment efforts.

As a result of these efforts, some progress has been made in the sphere of women's advancement into directorships. Although less than 5% of all directors on the boards of Fortune 1000 companies were women in 1987 (Hillman, Canella, & Harris, 2002), more than two decades later, this percentage has gradually risen to 20% ("Missing Pieces Report", 2017), as shown in Table 1 below. On the other hand, the number of minority directors has remained stagnant. Table 1 and Figure 2 below both show that minorities currently hold just 14% of total directorships, while minority women make up less than 4%.

Table 1: Fortune 500 Board Seats by Gender and Ethnicity
(2010, 2012, and 2016)

	2010		2012		2016	
	#	%	#	%	#	%
Total men	4,607	84.3%	4,575	83.4%	4,340	79.8%
Total women	856	15.7%	913	16.6%	1,100	20.2%
Women and minorities	1,395	25.5%	1,468	26.7%	1,677	30.8%
Minority men	539	9.9%	555	10.1%	577	10.6%
Minority women	161	2.9%	176	3.2%	207	3.8%
Minorities	700	12.8%	731	13.3%	784	14.4%
Total board seats	5,463	100.0%	5,488	100.0%	5,440	100.0%

Note: Reprinted from “Missing Pieces Report: The 2016 Board Diversity Census of Women and Minorities on Fortune 500 Boards” (p. 4) by The Alliance for Board Diversity. 2017. Deloitte Development LLC. Copyright 2017 by Catalyst, Diversified Search, The Executive Leadership Council, the Hispanic Association on Corporate Responsibility, and Leadership Education for Asian Pacifics, Inc. Reprinted with permission.

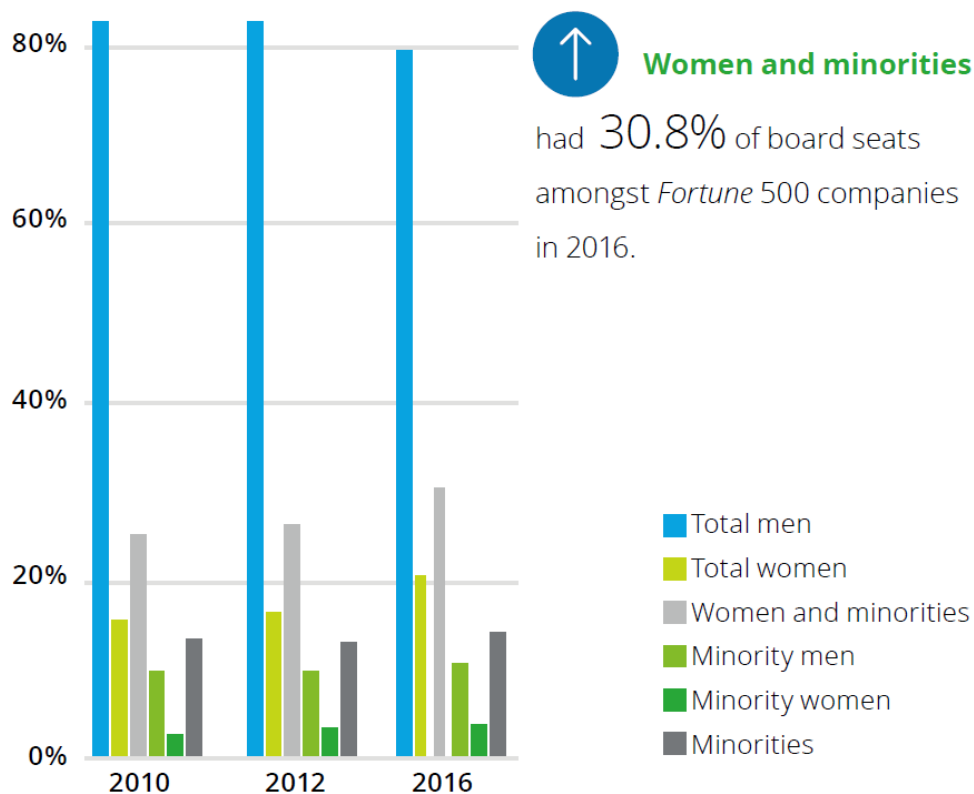


Figure 2: Percent of Board Seats by Gender and Ethnicity

Percentage of board seats held within Fortune 500 companies by gender and ethnicity during 2010, 2012, and 2016. Reprinted from “Missing Pieces Report: The 2016 Board Diversity Census of Women and Minorities on Fortune 500 Boards” (p. 3) by The Alliance for Board Diversity, 2017. Deloitte Development LLC. Copyright 2017 by Catalyst, Diversified Search, The Executive Leadership Council, the Hispanic Association on Corporate Responsibility, and Leadership Education for Asian Pacifics, Inc. Reprinted with permission.

Table 1 and Figure 2 both display the stark contrast of the percentage of men on corporate boards against the percentage of women and minorities. Furthermore, the majority of research on corporate board diversity in the United States has tended to focus predominantly on women’s studies (Darmadi, 2013; Ntim, 2015), driving an explicit need for more research specifically on minority women’s studies in the country. Underscoring the importance of research in the underserved area of ethnic diversity within corporate boards are the protracted advancements outlined in the previous paragraph and the realization that, by 2044, over half of the population of the United States will be classified as an ethnic minority (Colby & Ortman,

2015, p. 1). Accordingly, an increased focus on ethnic contrasts could bolster the impact of research on women directors.

The absence of gender- and ethnically- diverse directors in the boards of American companies is problematic because it limits the range of perspectives and insights that the board is able to offer as it relates to the strategic direction of the firm. The current research subscribes to the active school of thought on the subject of board of director involvement in strategy development. In contrast to the passive school of thought, the active school's perspective is that a board of directors, in partnership with the senior management team, is responsible for developing the firm's strategy and operational objectives (Barroso-Castro, Vellegas-Periñan, Dominguez, 2017). Therefore, logically, the strategic decisions of the board have the potential to impact the financial results of the firm. In light of the relationship between the board's role in strategy development and the firm's financial results, the outcomes of the current research may be used to provide a source of competitive advantage for businesses willing to recruit potential leaders from these historically underrepresented demographic groups.

In response to the push for diversity in corporate leadership as described in previous sections, researchers have begun to focus on the performance of women and minorities who do gain entry to upper echelons of the corporate leadership. As I have described in more detail in the literature review section, there are conflicting results within the extant research on the question of whether these attributes of diversity in corporate directors add value to a firm's financial results (Frijns, Dodd, & Cimerova, 2016; Post & Byron, 2015; Zahra & Stanton, 1988).

Taking these conflicting reports into consideration, this research sought to expand upon prior knowledge by not only focusing on ethnic and gender diversity separately, but also

investigating the combined factors to determine whether the inclusion of minority women directors, specifically, is also related to increased financial growth.

I.2 Contribution to Academic Research

The combined study of gender and ethnicity is an under-developed stream of research within the field of corporate governance. Rather, the prevailing research on diversity within this area has focused narrowly on two classifications of diversity in this area. One common classification is the inclusion of women *and* minorities on corporate boards (as one combined diversity group), while another common classification is women *or* minorities (as two separate diversity groups). Research using these two classifications of diversity has failed to distinguish between the results of the broader classifications and those that are associated with the distinct gender and ethnic attributes that coexist within one individual. In contrast, this study's more holistic approach did, in fact, distinguish between these attributes and attempted to identify the outcomes associated with each (i.e., the inclusion of minority women, the inclusion of minorities of either gender, and the inclusion of women of any ethnicity on corporate boards), presenting them on a case-by-case basis. By investigating whether each diversity factor (i.e., gender and/or minority status) represented within a firm's board contributed separately or in combination to the firm's financial growth, this research has added clarity to the extant research.

This study also diverged from the mainstream by exploring medium-term growth rather than short-term or long-term performance. Much of the prior research used year-over-year financial performance measures or those associated with even shorter time spans (Barton & Wiseman, 2015). According to Barton and Wiseman, this outlook does not synchronize with the board's primary responsibility of establishing firm strategy. Furthermore, this common orientation toward short-term performance is not helpful in assessing a firm's operational

security with respect to sustainable performance and profitability. The same report also argues that long-term strategic health metrics can be hard to identify and thus should be more qualitative in nature, such as a firm's progress toward the penetration of a new market (Dobbs & Koller, 2005). Additionally, long-term planning horizons are difficult to determine and defend. Instead, *The McKinsey Quarterly* suggests establishing and monitoring medium-term metrics, specifically those focused on asset health (e.g., ROA) and cost management (e.g., profit margin), which provide a forward-looking indication of whether a firm will be able to maintain and exceed its rate of growth over the next one to five years.

I.3 Contribution to the Business Community

As described above, the prevailing research has studied the relationship between the inclusion of either women or minorities on corporate boards and firm financial performance. Additionally, of the studies that have combined gender and ethnicity in one analysis, only one provided an analysis of minority women, specifically. A targeted examination highlighting the relationship between minority women directors and firm financial growth may provide actionable results for growth-oriented firms.

Furthermore, adding minority women into corporate boardrooms leads to improved career opportunities for this group of people. As corporations increase their diversity hiring practices at the director level, these directors, who themselves are likely to mentor others like themselves in preparation for similar roles (Hillman, 2015), may also begin to nominate other minorities for these roles as well, providing still another stepping stone towards increasing the balance of gender and ethnicity in corporate boardrooms. These increased opportunities take on added significance when the regressive hiring trends that persist to the present day are taken into account, particularly in regard to the disproportionately low number of board seats for minority

women. According to the Direct Women Board Institute, a non-profit organization that facilitates board diversity through the endorsement of qualified women attorneys to serve as board nominees:

Women of color appear to have experienced more significant impediments to their success on corporate boards than either white women or men of color.... This phenomenon may significantly undermine African Americans' board progress, and perhaps even the progress of all groups of color since African Americans represent the largest portion of people of color serving on corporate boards, not only because African American women significantly outnumber African American men within the student population, but also because African American women have come to outnumber their male counterparts within the labor force more generally. This pattern distinguishes African Americans from whites and all other racial groups in areas in which men continue to outnumber women (Fairfax, 2005, p. 1106).

Beyond this, changes in board composition could have far-reaching effects on the firm's strategic management. Thus, corporations that utilize this research may be guided by the evidence to increase minority and/or minority women participation on their boards and thereby improve financial performance over the medium-term. Introducing different perspectives into the boardroom potentially widens the range of operational strategies from which to choose, and with this wider selection comes an increased opportunity for success in the form of financial growth.

I.4 Background and Justification

Corporate governance has become a hot-button issue of late. The propagation of social inequality issues (covered in the previous sections) has spawned calls for the injection of diversity into the boardroom. In addition,, high-profile corporate scandals centered on fraud and embezzlement have shed light on the importance of adequate corporate oversight. Likewise, the collapse of several international economies during the 2008 global financial crisis has prompted regulatory agencies to reform corporate governance policies worldwide. At the center of each of these issues is a piercing public outcry for increased surveillance of the corporate landscape. In this respect, corporate boards offer a conciliatory solution between markets and government for

the purpose of corporate oversight (Pargendler, 2016). Some studies advocate that greater board diversity leads to reduced corporate corruption and business failure. For instance, one particular study found that firms with a higher percentage of women directors experience fewer occurrences of bribery, fraud, and corruption. This study also found that firms with homogenous board memberships suffer from an increased rate of governance-related scandals (Skroupa, 2016).

Among the most widely publicized corporate scandals in recent years were Enron's fraudulent accounting practices, which cost shareholders over \$74 billion in 2001, and WorldCom's \$11 billion in inflated assets, which resulted in \$80 billion in losses for investors and the loss of 30,000 jobs in 2002. Other noteworthy scandals that shocked the nation included the misstatement of earnings by federally-backed mortgage financing giants Freddie Mac and Fannie Mae by more than \$10 billion in 2003 and 2004 as well as Tyco CEO's 2005 conviction of embezzling \$500 million in company funds. In 2008, the bankruptcy of Lehman Brothers global financing firm rocked the financial services industry after executives were discovered hiding more than \$50 billion in loans disguised as sales. This represented the largest bankruptcy in U.S. history. More recently, however, Volkswagen's market capitalization plummeted \$20 billion in 2015 after executives revealed they had incorporated elaborate software in cars to circumvent pollution laws. In light of these egregious offenses, both the academic and business communities agree that an effective corporate board, functioning as the supreme internal overseer, is the foundation of a successful corporation. Furthermore, board diversity has been found to contribute greatly to a board's effectiveness in this role (Mehrotra, 2016), and thus, worldwide, laws have been passed that attempt to mandate diversity in corporate governance.

One such law enacted in Norway in 2003 requires every publicly-listed to be comprised of at least 40% women directors. The penalty for failure to comply with this mandate de-listing from the country's stock exchanges. By 2008, all the country's public firms had met this quota, and other countries in Europe, including Spain, Iceland, and France, had followed suit. More recently in 2013, the European Parliament passed a proposal requiring publicly-listed companies to achieve a 40% quota of non-executive women board members by 2020. In 2015, Germany passed a 30% quota (Isidro and Sobral, 2015). Also in 2015, the Securities and Exchange Board of India fined 790 companies listed on the Bombay Stock Exchange and the National Stock Exchange for failure to achieve a mandate of including at least one female director by April 1st (Bhalla, 2015). In the U.S., proposals have been presented by lawmakers in an effort to mirror the success of these international regulations, though conspicuously in non-binding plans and without penalties for failure to do so. The latest U.S. example of this legislation type was a preliminary draft submitted in early 2016 by Rep. Carolyn B. Maloney of the New York House of Representatives that would have required companies to share information about their board's compositions in their proxy statements, disclose gender diversity policies and strategies to comply with gender equality requirements where necessary, and explain any failures in compliance. This was preceded by the 2015 presentation of a non-binding resolution by Rep. Don Beyer of Virginia asking corporations to commit to balancing gender diversity. Similar resolutions were also presented in California, Illinois, Massachusetts, Philadelphia, and New York. All of these rules have come after the implementation of a statute by the U.S. Securities and Exchange Commission in 2010 requiring corporations to communicate details of their diversity policies and the results of those policies as they relate to the nomination of board

directors. Yet, even the SEC statute has been regarded as a diluted version of successful European legislation in this area (McGregor, 2016).

Nevertheless, to this point, no American legislative proposals have explicitly compelled organizations to increase the proportion of minorities, in general, or of minority women, in particular, in corporate boardrooms, a surprising failure given the statistical trends in the American labor force. According to U.S. Department of Labor statistics, in 2005, women represented 46% of the country's workforce and accounted for 43% of management jobs (Chao & Rones, 2006), but only 15% of the board seats in Fortune 500 companies ("2005 Catalyst Census of Women Board Directors of the Fortune 500", 2006). After 10 years, in 2015, the share of women in the labor force had increased by only half a percentage point, with the number of women in management positions increasing slightly more at 1% ("Women in the Labor Force", 2015). However, from 2005 to 2015, the number of boardroom seats ascribed to women rose by five percentage points to 20% ("2015 Catalyst Census: Women and Men Board Directors", 2016).

Although these numbers represent positive advances for women in general, the data on minority women in particular is in stark contrast. In 2015, minority women accounted for a mere 3.1% of boardroom seats and only one-fifth of women directors overall. This compares to 3.4% of boardroom seats in 2005, a decrease of almost half a percentage point. To underscore this issue, in 2015, 85% of public corporations had no minority representation at all on their boards, be it man or woman ("2005 Catalyst Census of Women Board Directors of the Fortune 500", 2006; "2015 Catalyst Census: Women and Men Board Directors", 2016).

II LITERATURE REVIEW

Much of the extant research investigating the effects of board composition on firm financial performance has been based on agency theory (Jensen & Meckling, 1976) or a resource-based view of the firm (Pfeffer and Salancick, 1978). However, the current research was grounded in upper echelons theory, a more recent theoretical framework that is more explicit in its interpretation of the role and potential influence of a corporation's board of directors, and the conversion theory of minority influence. For comparative purposes, a brief summary of the previous two theories is presented in the paragraphs below, and then in-depth summaries of upper echelons and minority influence theories are provided in the following sections.

Widely regarded as the prevailing theoretical point of view in the field of corporate governance (Daily & Cannella, 2003), agency theory addresses the problems with the ownership structure of American corporations as they relate to the self-interested manager and the disengaged shareholder. In short, an agency problem exists when a principal delegates a task to an agent, who then acts on their behalf. In this case, a corporation's owners or shareholders delegate its day-to-day operational management to the firm's management team, and a dilemma can emerge wherein the interests of the principal and agent may not align even though they are ostensibly working toward the same objective (Jensen & Meckling, 1976). For example, inherent in the job description of corporate manager is the goal of increasing firm value, which is in the best interest of the shareholder. However, in some situations, a manager must use his or her discretion, as in choosing between either a risky project that could increase the value of the firm or an alternative that could increase firm costs but would also ensure the manager's job security. This conflict of interest incentivizes the manager to choose the alternative that reduces the value

of the firm. A potential solution to the agency problem is empowering a board of directors to guide and monitor the firm's management team (Mehrotra, 2016).

However, instead of focusing on internal conflicts that could unsettle the operations of a firm, resource dependency theory, or RDT, focuses on how a firm's external resources can affect its operations. This theory argues that resources from an organization's external environment are the basis of the organization's power and are thus the source of its marketplace dominance (Pfeffer and Salancick, 1978). RDT views a firm's board of directors as primarily providing a linkage to its environment and such resources within this environment as information, access to capital, and legitimacy in the eyes of competitors and customers. Since contributions by a board of directors render the organization less dependent on the resources in the organization's external environment, increased diversity within the board of directors and decreased organizational dependency on its environment are positively correlated.

Although agency theory and resource dependency theory are certainly relevant to director roles and influence, upper echelons theory (Hambrick and Mason, 1984) delves more deeply into the various ways a director's personal characteristics can impact a firm's operations. For this reason, this study focused on upper echelons theory and the conversion theory of minority influence (Moscovici, Lage, & Naffrechoux, 1969) as its key theoretical bases. The following sections provide an overview of these theoretical frameworks.

II.1 Upper Echelons Theory

Upper echelons theory, published in 1984, asserts that organizations can act as mirrors of their own senior executives (e.g., the CEO, top management team, and board of directors), since these leaders are responsible for formulating the policies and objectives enacted by its employees. This theory is based on the premise of bounded rationality (Cyert & March, 1963),

which asserts that a manager's already complex reality is further complicated by the limitless amounts of data available. Inherent in this fountain of constantly-flowing data are constraints related to time, resources, and the manager's own cognitive capacity, which effectively limit the manager's ability to accurately interpret all of the data presented. Similarly, upper echelons theory focuses on the person or persons with decision-making authority, in particular, the idiosyncrasies and biases of these individuals that could affect corporate outcomes:

If we want to understand why organizations do the things they do, or why they perform the way they do, we must consider the biases and dispositions of their most powerful actors—their top executives (Hambrick, 2007).

Specifically, Hambrick and Mason (1984) argue that the outcomes of corporate strategy should be regarded as reflections of the personal values and cognitive foundations of those within the organization that are endowed with the highest decision-making authority, frequently referred to as the organization's top management team, or TMT. A firm's board of directors, serving as part of the TMT, selects and monitors the performance of the executive management team to ensure regulatory compliance, stockholder profit, and customer satisfaction (Aziri, 2014).

Figure 3 below shows the conceptual framework of upper echelons theory, in which directors make decisions and provide management advice based on their personal interpretations of strategic choices based on their experiences, values, and personalities. This theoretical model asserts a direct link between director characteristics and organizational outcomes. However, because such characteristics as cognitive frames, personal values, and individual perceptions are challenging to quantify, standardize, and validate, this theory requires the usage of observable character traits, such as demographic information (age, educational background, ethnicity, gender, and prior work experiences), as a basis for these theoretical connections. Consequently,

as shown in Figure 3, the characteristics of senior executives can become predictors of organizational outcomes.



Figure 3: The Key Tenets of Upper Echelons Theory.

Individual values have been defined as basic human goals that are directly related to specific social interactions (Schwartz, 2006). Based on this definition and in line with the basic premise of upper echelons theory, the values of corporate directors may vary based on their own histories of social interactions, particularly, their corporate leadership experiences. For instance, executives with an abundance of experience at the CEO level within a particular industry or firm may make decisions based on this experience, since it will have influenced their own cognitions or their values. For instance, Hillman, Cannella, and Harris found that 81% of the directors of large corporations had previously been either CEOs, COOs, or some other type of executive officer of a large corporation prior to their tenures as corporate directors (2002). However, as reported by the *2005 Catalyst Census of Women Board Directors of the Fortune 500*, women and

minorities are significantly less likely to possess this type of professional experience than are white men (2006). Because of the wide differences in experiences of white male and minority board directors, increasing board-member diversity with respect to executive background should also increase the range of experiences and diversity in values within the board of directors as a whole. Because executive decisions are based on the prior experiences and values which the board as a whole represents, increasing board-member diversity should contribute to an increased breadth of strategic options for the firm.

Research conducted in support of upper echelons theory has unearthed several notable findings, which Hambrick summarized in his 2007 theory update. Boeker (1997), D'Aveni (1990), and Eisenhardt & Schoonhoven (1990) have validated the theoretical assumption that demographics can function as surrogates for the cognitive frames of executives. This assumption aligns with my hypothesis that when directors of different ethnicities and genders are included in a firm's board of directors, different firm-level financial outcomes may occur. Crossland and Hambrick (2007) and Finklestein and Hambrick (1990) delved further into possible drivers for this phenomenon and gathered strong empirical evidence in support of a pivotal moderator for predictions based on upper echelons theory: managerial discretion. Stated succinctly, when a sufficient amount of managerial discretion (the level of sovereignty that is offered to executives in the decision-making process) is present, organizational managers are expected to leave greater traces of their personal characteristics on organizational outcomes. Because corporate directors are commonly perceived as being endowed with ample amounts of latitude in their decisions related to organizational strategy, this finding satisfactorily aligns with the current research. Hambrick's research has also shown that the characteristics of top management teams and the

balance of group heterogeneity are better indicators of performance than a director's personal perspectives (Hambrick, 2007). This point of view underpins the current research.

II.2 Conversion Theory of Minority Influence

The other theory upon which the current research is based is conversion theory of minority influence, which provides a means of analyzing the processes that occur when a minority opinion-holder is able to interrupt the thought processes and change the decisions of members of the majority-opinion group (Moscovici, Lage, & Naffrechoux, 1969). The 1969 experiment by these researchers assumed a perspective in opposition to the 'conformity bias' of prevailing social-influence theories. At the time of this seminal study, most of the field was focused on the processes by which majority opinion-holders influence conforming behaviors amongst all group members, including those holding a minority opinion. On the contrary, using verbal and non-verbal responses, this study revealed that, particularly among the women included in the experiment, a minority opinion-holder can wield considerable influence over a majority opinion-holder.

However, the minority opinion-holder must be able to demonstrate consistency throughout the decision-making process in order for this effect to occur. Consistency, defined as repetition of response, was perceived by the majority as loyalty to a position on an issue when presented alongside a clear and explicit statement of the position. The majority group's perception of loyalty, reinforced by the certainty and confidence presented by the minority opinion-holder is what eventually leads to the conversion of the majority decision to the minority opinion. Notwithstanding, Nemeth, Swedlund, and Kanki (1974) found that minority opinions could still stir divergent thinking within groups when a lack of consistency is present, as long as some sort of a pattern within the divergent thinking is evident. For example, within a board of

directors, a pattern could consist of one director tending to promote environmentally-focused cost-savings projects or of another director frequently suggesting the addition of technology-focused revenue streams. In the absence of consistency, the majority must also be convinced that the minority opinion-holder is firmly committed to his or her beliefs. Thus, casually repeating the same idea a few times will not have the same effect. Furthermore, a lack of consistency was often deemed favorable by majority opinion-holders as it resulted in a perception of flexibility and thus still led to conversion of the majority opinion-holders to the minority opinion.

Moreover, a key difference in minority and majority influence is related to the depth of the conversion. When majority-opinion group members are thought to influence conformity amongst minority group members, conforming behavior is believed to be due primarily to the effect of public perception. These minority-opinion group members have been found to continue to object to the majority opinion but only in private. However, when minority-opinion group members are thought to influence changes in the opinions of the majority, it is believed to be done privately at first, with these group members questioning their own beliefs, but then in turn questioning the beliefs and actions of the group as a whole (Moscovici, et. al., 1969; Nemeth, et. al., 1974). When minority-opinion group members influence change, it is believed to be done more intimately and permanently than when it happens the other way around. Thus, in line with this theory, when a woman or a minority is added to a previously homogenous boardroom, changes in the pattern of strategic decisions, and essentially, changes in organizational performance, may begin to occur.

In an attempt to explain the effects of minority influence, research has emerged from either of two key theoretical streams: 1) the minimization of minority influence by the majority and 2) the conversion of the majority to the minority opinion (Bazarova, Walther, & McLeod,

2012). Some branches of the first stream of research, which includes the black sheep effect (Marques, Abrams, & Serodio, 2001), the aversion of the double minority (Maass, Clark & Haberkorn, 1982), and tokenism (Kanter, 1977), argue that, when disagreements occur within a group, the majority group may take steps to limit any possible influence by minority opinion-holders by discounting and/or disregarding their deviant opinions. Though the expected outcomes of the current research are not aligned to this particular stream of research, they may be relevant to the outcomes of prior studies that have found either no significant relationship or significant negative relationships between board diversity and firm financial performance.

The black sheep effect argues that members of the minority-opinion group whose views deviate from the majority will be discredited and devalued if the minority-opinion group member is deemed substantially different from the majority in another key respect (Marques, Abrams, & Serodio, 2001). For example, if a woman director's opinion differs from that of the majority of a corporate board made up mostly of men, then the majority may dismiss the difference in opinions as based on gender-based differences in thinking.

Likewise, the opinions of a double minority or a minority-opinion group member who is also viewed as an outsider of the majority-opinion group's social circle will also be dismissed if the majority-opinion group believes that this social difference can explain the minority-opinion-holder's conflicting position (Bazarova, et. al., 2012). For example, if the majority of the corporate board is made up mostly of white directors with upper-middle-class upbringings and a minority opinion is raised by a black director having a lower-class upbringing, then the majority may disregard the minority opinion as incorrect and untrustworthy because it is inconsistent with that of directors who are perceived as more likely to think properly about the issue.

A similar rejection will also occur when the minority opinion-holder is believed to be the subject of tokenism (Kanter, 1977). In cases of tokenism, deviants who differ not only by opinion but also in regard to another important dimension may be viewed as a rare instance of this particular dimension. Thus, tokens come to symbolize this important difference on a grand scale.

Tokens can never be just another member while their category is so rare; they will always be a hyphenated member, as in “woman-engineer” or “male-nurse” or “black-physician” (Kanter, 1977, p. 968).

For the reasons that Kanter astutely describes above, in the case of tokenism, the minority opinion is completely overlooked, and token group members are not allowed to fully participate in the decision-making process because their inclusion in the group is viewed only as symbolic in nature.

Conversely, the second stream of research within the realm of minority influence is focused on the conversion of the majority to the minority opinion. Highlighted by three key theories—the mediating influence of the double minority (Maass, et. al., 1982), the minority leniency contract model (Crano, 2001), and congruence (Newcomb, 1961), this stream of research argues that in times of group disagreement, the majority may reexamine issues from the minority’s viewpoint and ultimately convert to the latter’s way of thinking in conformity with the minority. This is the stance that I adopted in the analytical approach for the current research.

Although the opinions of a double minority may often be categorically rejected by the majority group for reasons described in prior paragraphs, the opposite effect can also occur. Double minorities have often been perceived as more competent when the opinions that they advocate are directly related to their minority standing (Maass, et. al., 1982). For example, a Mexican-American doctor on the board of a large hospital is likely to sway the rest of the board towards healthcare initiatives that focus on outreach activities in the Latino community. In this

case, the board may believe that the Mexican-American doctor knows more about projects within that community because he himself is Latino.

Similarly, the minority leniency contract model states that majority opinion-holders will yield to minority opinion-holders when minority opinions diverge only slightly from the majority (Crano, 2001). Instead of ignoring the minority opinion and branding the minority opinion-holder as an outcast, as described in the summary of the prior stream of research, the mild deviation from the majority opinion prompts the majority to pursue a justifiable reason for the group member's divergent beliefs. For example, if a board member presents a slightly tweaked alternative of a strategic resource allocation decision, it is more likely to gain traction with the majority than if a more radical approach were presented. The slight inconsistency of opinions within the group triggers apprehension in the majority and promotes a reconsideration of the mainstream opinion as compared to the rationale of the opposing opinion, thereby increasing the time spent on deliberation and the possibility of conversion to the minority opinion.

Similarly, congruence occurs when group members assume that others similar to themselves in regard to their attitudes on values, sex, religion, and ethnicity will hold opinions that are akin to their own and that those with different attitudes will hold different opinions as well (Newcomb, 1961). In the group decision-making process, differing opinions that are congruent with these expectations related to the internal composition of the group help cultivate the conversion of the majority group more easily than when differences of opinions are incongruent with these expectations (Bazarova, et. al., 2012). For example, a corporate board with a majority of white directors may be presented with diverging ideas from its ethnic minority directors as well as another set of contrasting opinions from a small group of white directors. In this case, the board as a whole may be more receptive to the ideas from its ethnic minority

directors because differences are more likely to be expected from that group of directors. In general, group members appear to be influenced more by conflicting opinions from those who are unlike themselves, and at the same time, less responsive to conflicting opinions when these are brought forth by those who are similar to themselves.

I believe that the concept of congruence as it relates to the conversion theory of minority influence may help explain the results of this study. Specifically, when women and ethnic minorities are included in corporate boards, the other members of the board may be more inclined to alter the board's strategic decisions because they expect divergence from these groups. Moreover, the subsequent alterations in corporate strategy may have a positive effect on corporate financial growth.

II.3 Synthesis of Literature on Gender Diversity

Compared to other demographic diversity factors, gender diversity seems to be the area that is most researched within the academic literature (Darmadi, 2013). Between the 1950s and the 1980s, literature on gender diversity in corporate boardrooms focused mainly on the reasons for the lack of diversity within this area as well as detailed descriptions of the gender dynamics within these boardrooms. Fuller and Batchelder launched this wave of literature in 1953. Through interviews of 175 people (including 47 women) within 95 organizations across 17 industries and spanning nine major metropolitan cities across the North, South, and Midwestern regions of the United States, the researchers found that very few women in any industry held senior level executive positions and, of those who were employed in executive positions, many typically had been with the company for an extensive number of years or since the start of the business. They also found that many women who made it to the top ranks of an organization end up serving as assistants to the male executives who led the firm's operations.

Throughout the 1960s, the major focus of the research in this field was on the different characteristics of women in these executive offices and the potential reasons that very few women occupied these positions. In the '60s, authors such as Powell (1963), Famularo (1967), Buchanan (1968), and Merritt (1969), pointed to antiquated business traditions and society's archetypal predilections as the reasons for the lack of progress in integrating women into executive management teams. At the same time, Wilensky (1968) noted that although the number of women in professional positions had increased over time, the percentage of women in these positions had either slipped, remained stable, or increased only minimally over the same period, citing women's reduced participation in higher education versus men's and their increased propensity to resign their own ambitions in support of their husband or children.

In 1975, *Business and Society Review* began publishing what is believed to be the first comprehensive list of women corporate directors, noting that many companies shared the same directors. This inter-firm pooling of directors was noted as diluting the true and absolute number of women granted board appointments (Orr, 1977). In 1980, Schwartz published an influential study on women directors, revealing that only 1.8% of directors of Fortune 1,300 companies were women at that time. As the founder of Catalyst, her publication of this study was an initial iteration of the now-annual census of women on the top management teams and corporate boards of the largest U.S. firms. Schwartz also noted that almost none of those women had ever served as a chief executive of a major corporation or on any other corporate board, unlike their male counterparts, for whom those experiences were typical.

From the 1990s to the present, researchers have focused on the link between gender differences in the boardroom and strategic outcomes. During this period, the topic of research shifted from the descriptions of women in these senior positions to the qualitative effects that the

infusion of women into these positions has generated within the organizations under their influence. For instance, women are more likely to select less risky or aggressive organizational strategies than their male counterparts (Joecks, Pull, & Vetter, 2013). Additionally, women are also more inclined than men to invest organizational resources in more environmentally-sustainable projects (Darmadi, 2013). Reduced claims of sexual harassment and increased awareness of social performance are other phenomena noted in organizations with women on their corporate boards (Singh Kang & Payal, 2012).

The presence of women directors is also associated with increased ethical and social compliance (Isidro & Sobral, 2015) and increased allocation of resources for corporate monitoring activities (Kakabadse et al., 2015), thereby strengthening the independence of the board. Finally, Pletzer, Nikolova, Kedzior, and Veolpel (2015) noted that, when women are enlisted in the role of corporate directors, they are more likely to advance creative and cooperative decision-making tactics during strategy discussions whereas their male counterparts were more likely to suggest tactics based on past precedent, policy, and regulations during these types of deliberations. In the negative, some researchers have observed that the introduction of women to boards may add communication difficulties and interpersonal tension that could stall the decision-making process (Darmadi, 2013; Hassan, Marimuthu, & Johl, 2015; Kakabadse et al., 2015; Pletzer et al., 2015).

Thus, evidence is mixed on the relationship between women directors have and corporate financial performance. Some recent studies suggest that the presence of women on corporate boards exert a positive influence on financial results, and the findings of these studies are presented in detail below.

To examine the relationship between gender diversity on corporate boards and firm financial performance as measured by return on assets (ROA), Carter, D'Souza, Simkins, and Simpson (2010) examined the relationship between both gender and ethnic diversity within corporate boards and firm value as measured by Tobin's Q as well as performance as measured by ROA. Included in this study were 641 companies on the S&P 500 from 1998 to 2002. Findings indicated a positive relationship between ROA and firm performance. A similar study was done by Julizaerma and Sori (2012), who evaluated 274 Malaysian firms listed on the ACE stock market during the years 2008 and 2009. The results of this study also showed a positive relationship between the presence of women on corporate boards and firm performance as measured by ROA.

Joecks, Pull, and Vetter (2013) studied the relationship between gender diversity within corporate boards and firm financial performance. After examining the ROE of 151 German companies between the years 2000 and 2005, the researchers found a positive relationship between gender diversity within the boards of directors and firm financial performance.

Liu, Wei, and Xie (2013) researched the relationship between gender diversity in corporate boards and firm performance as measured by ROA and return on sales (ROS). The study included over 2,000 companies listed on China's stock exchanges from 1999 to 2011. The researchers found a positive relationship between gender diversity and both performance indicators, and, moreover, the strength of this relationship increased as the number of women directors increased from one or two to three or more.

Nguyen, Locke, and Reddy (2015) also investigated the relationship between gender diversity and firm value. Analyzing the Tobin's Q of 120 publicly listed companies in Vietnam between 2008 to 2011, the researchers found a positive relationship between the number of

women directors and firm value. Findings also indicated that the more women that were included on the board, the more statistically significant the relationship. However, this marginal effect was not present in boards with over 20% women membership.

Isidro and Sobral (2015) examined the relationship between gender diversity on corporate boards and firm value as measured by Tobin's Q as well as firm performance as measured by ROA and ROS. The study focused on 922 large firms in 16 European countries between 2010 and 2012. Though the researchers found no relationship between the number of women on the board and firm value, they did, however, find a positive relationship between gender diversity and both ROA and ROS.

Ntim (2015) analyzed the relationship between both ethnic and gender diversity within corporate boards and firm value as measured by Tobin's Q. The researchers examined 169 firms in South Africa from 2002 to 2007. The study findings indicated a positive relationship between gender diversity within the board of directors and firm value.

Garcia-Meca et al. (2015) studied the relationship between both gender and ethnic diversity within corporate boards and firm value as measured by Tobin's Q as well as financial performance as measured by ROA. Analyzing 159 banks in nine countries in Europe and the Western Hemisphere from 2004 to 2010, the researchers found a positive relationship between gender diversity within the board of directors and both firm value and financial performance.

To the contrary, however, other studies found either little or no relationship between firm financial performance and board gender diversity. For example, the study of Isidro and Sobral (2015) on gender diversity on corporate boards and firm financial performance (also mentioned above) found no relationship between the number of women on the board and firm value, as

measured by Tobin's Q. Details on the findings of other recent studies showing either minimal or negative results are presented below.

As mentioned previously, Carter, et. al., (2010) examined the relationship between both gender and ethnic diversity within corporate boards and firm value as measured by Tobin's Q. The findings of this study indicated no relationship between either gender or ethnic diversity and firm value. Mehrotra (2016) investigated 100 companies on the NYSE from 2008 to 2013 and also found no relationship between gender diversity and firm financial performance as measured by ROA. Lastly, Dale-Olson, Schone, and Verner's (2013) study, which used panel data for the years 2002 through 2009 for 128 public Norwegian firms to explore the relationship between gender diversity and ROA, yielded comparable results.

Conversely, Ujunwa, Okoyeuzu, and Nwakoby's (2012) study of the relationship between both ethnic and gender diversity of 122 firms in Nigeria between 1991 and 2008 found a negative relationship between gender diversity within the board of directors and ROA. Similarly, Darmadi (2013) also found a negative relationship for both firm value as measured by Tobin's Q and firm performance as measured by ROA. These results covered 354 firms listed on the Indonesia Stock Exchange during the year 2007.

Analyzing 318 Dutch pension funds for three unspecified consecutive years, Veltrop, Hermes, Postma, and Haan (2015) analyzed the relationship between gender diversity within corporate boards and financial performance as measured by return on investment (ROI). The results of this analysis indicated a negative relationship between gender diversity within the board of directors and financial performance.

In an attempt to reconcile these mixed findings within the academic literature on the relationship between gender diversity in corporate boardrooms and firm financial performance, I

also reviewed two meta-analyses on this subject. Pletzer, Nikolova, Kedzior, and Voelpel (2015) completed a meta-analysis of 20 studies that found no relationship between board gender diversity and financial performance as measured by ROA and ROE. On the other hand, Post and Byron's 2015 meta-analysis of 140 prior studies identified a positive relationship between number of women on a board of directors and firm ROA, ROE, and return on invested capital (ROIC). However, as this study also noted, these findings were dependent on a critical mass of at least three women directors being present and was much less pronounced in organizations with just one or two women directors. However, Post and Byron acknowledged that these results were based on only one socio-cultural factor (i.e., gender) and that more research was needed to assess the relevance or extent of other socio-cultural factors (e.g., ethnicity).

II.4 Synthesis of Literature on Ethnic Diversity

Although the literature on gender diversity on corporate boards is vast, the same cannot be said for academic research in the field of ethnic diversity in corporate governance. Some studies that focus on gender diversity also include ethnic diversity with other diversity types of equal importance, including age, education, functional expertise, and culture. However, not many studies focus on ethnicity alone. While gender diversity is a critical diversity factor, other demographic attributes should also be considered in the discussion of boardroom integration, including ethnicity, which is defined as the collective impact of a person's race and cultural background (Adams, Haan, Terjesen & Ees, 2015).

While correlational research is lacking, some descriptive statistical research is available in the field of ethnic board diversity. As mentioned previously, 81% of corporate directors in the United States are former chief executives of other large firms (Hillman, et. al., 2002). However, considering the historical discrimination practices within the U.S. as it relates to occupational

opportunities for minority citizens (also mentioned in previous sections), minorities make up a negligible number of the directors following that career path. Furthermore, women as a whole currently represent 20% of board members within the United States. However, African-Americans make up only 7% of board members (even though this racial group represents 13% of the U.S. population); and Hispanics make up only 3% (even though they represent 17% of the population). These figures highlight the proportional disparities in the numbers of minorities that are elevated to corporate boardrooms. Furthermore, 35% more companies have at least one woman director than have at least one African-American board member, which is the minority group having the largest board representation (Peterson, Philpot, & O'Shaughnessy, 2007). Correspondingly, minorities are also significantly underrepresented in the leadership of corporate boards (Murphy, 2015), and a meaningful solution to this diversity problem within executive leadership cannot continue to be simply adding a lone white woman to numerous (and sometimes interlocking) board memberships of various companies.

The empirical results of ethnic diversity in corporate boards have been meagerly documented. Hillman (2015) reported that minorities who occupy the roles of senior executives within an organization are more likely to mentor others within the organization, which not only generates a more productive workforce but also allows for a steady stream of qualified minorities for potential promotion to the director role. Upadhyay and Zeng (2014) found that increased ethnic diversity also increases quantity and quality of the information available on the company's internal governance systems. Without specifically mentioning ethnicity, research by Carter et al. (2010) cautioned that increased boardroom diversity can generate intrapersonal conflicts that may outweigh any of the perceived positive outcomes. However, Kong-Hee and Rasheed (2014) proposed that infusing directors with diverse backgrounds into corporate boardrooms could

enable improved identification and assessment of strategic opportunities across a range of industry groups.

However, of the empirical research on corporate financial performance, results are mixed regarding the performance of companies with racially diverse boards. Even though Carter et al. (2010) found no correlation between ethnicity and financial performance, Ujunwa, Okoyeuzu, and Nwakoby's study (2012), found that there is a positive relationship between ethnic diversity within the board of directors and firm financial performance as measured by ROA. Similarly, Ntim's study on ethnic and gender diversity (2015), also mentioned in the previous section, found a positive relationship between ethnic diversity (by way of nationality) and firm value as measured by Tobin's Q. More significantly, however, this study also found a more positive relationship between ethnic diversity (rather than gender diversity) and stock value.

Alternatively, in Garcia-Meca et al.'s (2015) study of the relationship between both gender and ethnic diversity, which is also mentioned previously, a negative relationship found between the ethnicity of board directors and firm value as measured by Tobin's Q as well as financial performance as measured by ROA. Similarly, a 2016 study by Frijns, Dodd, and Cimerova found a significant negative relationship between ethnic diversity and firm value after evaluating the Tobin's Q and ROA of 243 British firms between 2002 and 2014. Despite these mixed findings and considering the amplified growth in the minority population projected to occur over the next thirty years, recruiting board representatives who will enhance community ties, approval, and potential market offerings may be crucial for the vitality of growth-oriented organizations (Pechersky, 2016), as this may, in fact, improve financial performance over time.

II.5 Synthesis of Literature on Minority Women

In spite of the push from intersectional theorists who argue that ethnicity and gender should be studied in conjunction, almost no academic literature is dedicated to the subject (Peterson et al., 2007). Orr (1977) noted that, in 1977, 340 of America's top 1,300 corporations had women directors, while only 100 had black directors. Orr also observed that, relative to their aggregate population numbers, both African-Americans and women continue to be grossly under-represented on corporate boards. Hillman, Cannella, and Harris (2002) noted that 75% of African-American women in the position of corporate director held advanced degrees in comparison to 51% of white male directors. Of this same group, 56% of African-American women held doctoral degrees as opposed to 19% of white men. Because of the increased level of formal education and reduced amount of executive level experience possessed by minority women directors versus white men, corporate boards that add minority women directors are more likely to consider strategic alternatives that have some basis in academic concepts in addition to alternatives based on past business experiences. Even though a small number of publications discuss African-American women on corporate boards, almost none address directors of Asian, Hispanic or Native American descent. Differing socio-economic backgrounds of potential minority board members, who typically perceive themselves as self-made or under-privileged (as opposed to self-perceptions of non-minority board members as middle-class or upper-class), these potential directors may provide divergent perspectives on the obligations that corporations owe other stakeholders, shareholders, and the surrounding community (Peterson et al., 2007). The increased range of perspectives and strategic alternatives brought into the boardroom by minority women directors can be beneficial for growth-oriented firms.

The amount of empirical research that has been published on the relationship between minority women directors and firm financial performance is minimal. The majority of the research that is available on the topic has been approached in either of the two following ways: 1) Gender and ethnicity are lumped together into one overarching diversity group or 2) Gender and ethnicity are analyzed separately but as a part of the same study and may or may not include other demographic diversity factors such as age and education. The findings of the second category of research were presented in the previous section, and the results of the first category are provided below.

Zahra and Stanton (1988) grouped women and minorities into one diversity category and found no correlation between the percentages of women and minorities on corporate boards and firm performance. Carter, D'Souza, Simkins, and Simpson's investigation (2010) included a similar diversity grouping that combined minorities and women. The results of this study showed no relationship between the larger diversity group containing either gender- or ethnically-diverse directors and firm value as measured by Tobin's Q or firm performance as measured by ROA.

On the other hand, Erhardt, Werbel, and Shrader (2003) found a positive relationship between the percentages of women and minorities on boards and ROA and ROE. Ntim (2015), mentioned in both of the previous sections, also found a positive relationship between boards of directors containing either minority or women directors and firm value as measured by Tobin's Q. Similarly, Ararat, Aksu, and Tansel Cetin (2015) examined the combined relationship between gender and ethnic diversity (by way of nationality) within corporate boards and financial performance. This study, which included 95 firms on the Bourse Istanbul stock index during 2006, found a positive relationship between boards having either diversity factor and both firm value, as measured by market-to-book ratio, and performance, as measured by ROE.

Only one study analyzed the relationship between of minority women and firm financial performance. Ntim (2015), mentioned in both of the previous sections, approached this analysis from multiple perspectives and provided the results of the diversity categories separately (presented in the previous sections), combined (as mentioned in the above paragraph), and from the perspective of the minority women. The study's findings indicated that there is a positive relationship between the presence of minority women within the board of directors and firm value as measured by Tobin's Q. Based on the belief that the different perspectives offered by minority women directors can modify the high-level decision-making that occurs in the boardroom and thereby possibly increase financial performance, I focused my study on minority woman as did Ntim (2015), but within the context of companies located within the United States.

III HYPOTHESES

It has been established in the literature that the structure and composition of the board of directors can influence firm financial performance (Aziri, 2014; Hambrick & Mason, 1984; Pargendler, 2016; Pintea & Fulop, 2015). Also, as mentioned previously, the current research focused on the five-year growth rate of the performance indicators, in line with the professional literature, which discourages the use of short-term performance metrics (Nooyi, 2010; Kilroy & Schneider, 2016) and encourages the use of medium-term metrics to ascertain the sustainability of operations, asset health, and profitability (Barton & Wiseman, 2015). However, the collective outcomes of ethnic and gender diversity in American boardrooms have not heretofore been studied, as demonstrated by the review of the academic literature cited in the previous sections. Additionally, there are conflicting reports of the relationship between each of these diversity types and a firm's financial returns, as shown in Table 2 below.

Table 2: Recent Studies on Firm Performance and Board Diversity (Gender and Ethnicity)

CATEGORY	AUTHOR(S)	YEAR	SAMPLE	MEASURES	Key Findings
ETHNICITY and GENDER (1 group)	Zahra, S. A. Stanton, W. W.	1988	100 Public Firms in US 1980	ROA, profit margin, sales to equity ratio, earnings per share, dividends	No Relationship
ETHNICITY and GENDER (1 group)	Erhardt, N. L. et. al.	2003	127 Large US Firms 1993-1998	ROA, ROI	Positive Relationship
ETHNICITY or GENDER (2 groups)	Carter, D. A. et. al.	2010	641 Public Firms in US 1998-2002	ROA, Tobin's Q	Positive Relationship (ROA) No Relationship (Tobin's Q)
GENDER	Julizaerma, M.K. Sori, M. Z.	2012	Public Firms in Malaysia 2008-2009	ROA	Positive Relationship
ETHNICITY or GENDER (2 groups)	Ujunwa, A. et. al.	2012	122 Public Nigerian Firms 1991-2008	ROA	Positive Relationship (Ethnicity) Negative Relationship (Gender)
GENDER	Dale-Olsen, H. et. al.	2013	128 PLC & LTD Firms in Norway 2003-2007	ROA	No Relationship
GENDER	Joecks, J. et. al.	2013	151 Public Firms in Germany 2000-2005	ROE	Positive Relationship
GENDER	Darmadi, S.	2013	354 Public Firms in Indonesia 2007	ROA, Tobin's Q	Negative Relationship
GENDER	Liu, Y. et. al.	2014	Public Firms in China 1999-2011	ROA, ROS	Positive Relationship
ETHNICITY and GENDER (1 group)	Ararat, M. et. al.	2015	95 Firms in Emerging Market Countries	ROE, Market to Book ratio	Positive Relationship
ETHNICITY or GENDER (2 groups)	García-Meca, E., et. al.	2015	159 Banks in 9 Countries 2004-2010	ROA, Tobin's Q	Positive Relationship (Gender) Negative Relationship (Ethnicity)
GENDER	Isidro, H. Sobral, M.	2015	922 Large Firms in Europe 2010-2012	Firm Value, ROA, ROSales	Positive Relationship
GENDER	Nguyen, T. et. al.	2015	120 Public Firms in Vietnam 2008-2011	Tobin's Q	Positive Relationship
ETHNICITY and/or GENDER (both 1 & 2 groups)	Ntim, C. G.	2015	169 Public Firms in South Africa 2002-2007	ROA, Tobin's Q	Positive Relationship
GENDER	Post, C. Byron, K.	2015	140 Previous Studies 90,000 firms in 35 Countries	ROA, ROE, ROIC, Tobin's Q	Positive Relationship
GENDER	Veltrop, D. B. et. al.	2015	318 Dutch Pension Funds 3 Unspecified Years	ROI	Negative Relationship
ETHNICITY	Frijns, B. et. al.	2016	243 British Firms 2002-2014	ROA, Tobin's Q	Negative Relationship
GENDER	Mehrotra, S.	2016	100 Firms Listed on NYSE 2008-2013	ROA	No Relationship

Because of this disparity, this research sought to add clarity to an overlooked area of research, while arguing that board diversity does in fact play a key role in a firm's financial growth. The three measures of firm performance included in this study were net profit margin, return on assets (ROA), and return on equity (ROE). These profitability ratios show the collective results of strategic decisions related to liquidity, asset management, and debt position (Brigham & Erhardt, 2011). Additionally, these standard accounting-based ratios were the most commonly used measures in prior similar studies (Ararat et al., 2015; Dale-Olsen et al., 2013; Erhardt et al., 2003; Joecks et al., 2013; Post & Byron, 2015; Zahra & Stanton, 1988).

For the purpose of this research, I argued that ROA was an appropriate measure for this analysis because one of the primary functions of the board of directors is formulating long-term asset allocation plans and so include capital investments in plants, land, and equipment (The Business Roundtable, 1978). Accordingly, ROA, which measures the profitability of a business relative to the total amount of all its assets, measures the effectiveness of a company's assets in producing revenue, and, thus, the effectiveness of a board's asset allocation decisions.

Secondly, I believed ROE to be an appropriate measure for this analysis because another of a board's primary functions is approving any changes to a firm's financial structure, which includes retention of debt and distribution of company stock or corporate equity (Gygax, Hazledine, & Spencer, 2017; Pereira, Couto, & Francisco, 2015). ROE, which measures the profitability of a business relative to its total market value as measured by its outstanding equity, is an indicator of a company's effectiveness in generating profit from the money shareholders have invested in the company, and, essentially, the effectiveness in a board's capital structure decisions.

Lastly, I adopted profit margin as also an appropriate measure for this analysis because two other major functions of the board of directors are monitoring organizational performance and making strategic recommendations to improve this performance over the long-term (Barton & Wiseman, 2015). Such recommendations may take the form of changes to principal revenue streams or product lines and ensuring senior executives are effectively controlling costs. Profit margin reveals how much of every dollar in sales the company is able to keep in earnings after accounting for all expenses and, thus, in turn, reveals the board's effectiveness in their revenue planning and cost control decisions.

Notably, Tobin's Q (market-to-book valuation ratio), another financial performance measure commonly used in similar studies, was not applied to this analysis. Tobin's Q is calculated using the following ratio:

$$\text{Tobin's Q} = \frac{\text{Market Value of Outstanding Stock}}{\text{Replacement Cost of Firm Assets}}$$

While determining the market value of outstanding stock is relatively simple, calculating an accurate estimation of the replacement costs of all the firm's assets has proven to be difficult. Particularly, markets for the firm's used equipment may not even exist. Furthermore, the value of intangible assets such as R&D, trademarks, and copyrights is often difficult to determine because of issues related to ongoing creation, volatility, and problems with protection and enforcement. For this reason, the value of intangible assets is often left out, leading to a proportional overstatement of the market value.

To illustrate, the average Tobin's Q of industries such as photo equipment (3.08), chemicals (2.40), and food products (1.70) typically exceed 1. This indicates that either most firms in these industries are worth far more than it would cost to rebuild the businesses from the

ground up, or that there is a measurement error, which is more likely considering the valuation issues discussed above (Carlton & Perloff, 2015).

Furthermore, underinvestment in capital assets can artificially inflate Tobin's q , which contradicts the assumption from previous academic literature that increased Tobin's Q is indicative of better financial performance (Dybig & Marachka, 2010). One study's findings provided a succinct summation of the problems related to using Tobin's Q as a measure of firm value:

It is well understood that this ratio exhibits considerable variation not only over time but also at any given point in time, across industries and even across firms within the same industry (McNichols, Rajan, & Reichelstein, 2014, p. 1394).

For these reasons, I have excluded Tobin's Q and included accounting returns as financial measures for this study. A summary of the financial measures included in my hypotheses and the rationale for their inclusion in the study follows.

My hypotheses are grouped according to financial performance ratio and diversity category. ROA is denoted as hypothesis 1, ROE is denoted as hypothesis 2, and profit margin is denoted as hypothesis 3; hypotheses concerning firms that include minority women on their boards are categorized with A's, those concerning firms that include minorities of either sex on their boards are categorized with B's, and those concerning firms that include women, either minority or non-minority, on their boards are categorized with C's.

Hypotheses A are related to minority women and express my expectation that, in line with upper echelons theory, the differing past experiences and personal values of minority women and white men will drive differences of opinions within the board on the firm's strategic direction. Furthermore, I also expect that, in line with the conversion theory of minority influence, these minority opinions (held by the marginal number of minority women included on the board) will inspire variations in the strategic decisions made by firms that include minority women on their corporate boards versus firms that do not based on the congruence and double-minority perspectives outlined in the previous section. For these reasons, I believe that the inclusion of minority women within corporate boards will have a significant positive relationship with the financial returns of these corporations. Thus, hypotheses A are detailed explicitly below:

Hypothesis 1_A: *The 5-year growth rates in ROA of firms with minority women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 2_A: *The 5-year growth rates in ROE of firms with minority women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 3_A: *The 5-year growth rates in net profit margin of firms with minority women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypotheses B are related to ethnic minorities of any gender. It is my expectation that, in line with upper echelons theory, the differing past experiences and personal values of minorities and white men will drive differences of opinions within the board on the firm's strategic direction. Furthermore, I also expect that, in line with the conversion theory of minority influence, these minority opinions (held by the marginal number of ethnic minorities included on the board) will inspire variations in the strategic decisions made by firms that include minorities on their corporate boards versus firms that do not based on the congruence and double minority perspectives. For these reasons, I believe that the inclusion of minorities within corporate boards will have a significant positive relationship with the financial returns of these corporations. Thus, hypotheses B are detailed explicitly below.

Hypothesis 1_B: *The 5-year growth rates in ROA of firms with minorities on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 2_B: *The 5-year growth rates in ROE of firms with minorities on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 3_B: *The 5-year growth rates in net profit margin of firms with minorities on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypotheses C are related to women of any ethnicity. It is my expectation that, in line with upper echelons theory, the differing past experiences and personal values between women and white men will drive differences of opinions within the board on the firm's strategic direction. Furthermore, I also expect that, in line with the conversion theory of minority influence, these minority opinions (held by the marginal number of women included on the board) will inspire variations in the strategic decisions made by firms that include women on their corporate boards versus firms that do not based on the minority leniency contract model. For these reasons, I believe that the inclusion of women within corporate boards will have a significant positive relationship with the financial returns of these corporations. Thus, hypotheses C are detailed explicitly below.

Hypothesis 1c: *The 5-year growth rates in ROA of firms with women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 2c: *The 5-year growth rates in ROE of firms with women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

Hypothesis 3c: *The 5-year growth rates in net profit margin of firms with women on their boards of directors are greater than those of firms with only white men on their boards of directors.*

IV DESIGN AND METHODOLOGY

IV.1 Research Model Design

This research model was designed as a comparative analysis using inferential statistics to interpret the differences in the means of three distinct sets of two sample groups from the population of 346,249 large U.S. corporations with annual revenues exceeding \$500,000. The sample group sets for this study are listed below:

	<u>Boards With</u>	<u>Boards with Only White Men</u>
A) Minority Women	73	87
B) Minorities	238	87
C) Women	297	87

All data for this study were collected using publicly available secondary information. The independent variables were A) companies with minority women directors, B) companies with minority directors, and C) companies with women directors, which were all compared against companies with only white men on their boards of directors. The dependent variables were the five-year growth rates for return on assets (ROA), return on equity (ROE), and profit margin. Other data characteristics reported as a part of this study included number of directors on the company's board, the age of the firm measured in years since incorporation, industry, and region. Each of the 2,594 corporate directors included in this study possessed at least six years of service on the company's board. This number represents the duration of time that was examined (2011 through 2015) plus one additional year prior to the start of the analysis, which was required to ensure that these board members would have had the opportunity to participate in the strategy formulation sessions covering the growth periods for this study. The data were analyzed using the IBM SPSS software program with some charts that developed in Microsoft Excel. An overview of the research is presented in Table 3 below:

Table 3: Summary of Research Design & Data Attributes

Design Element	Description
Research Method	Secondary Data Analysis
Level of Analysis	Individual Directors
Unit of Analysis	Corporation
Data Source	Hoover's, NNDB.com, MorningStar.com, LinkedIn.com, Google.com
Population	Large U.S. Corporations -- \$1M+ Annual Revenues (110,988 Firms)
Sample	U.S. Corporations Listed on NYSE or NASDAQ with publicly available financial and director data for each year between 2011 and 2015 (439 Firms)
Industries	Manufacturing, Wholesale/Retail, Services, Construction, Natural Resources/Utilities, Technology, Media/Telecommunications, Travel

Note: Population data retrieved from "2012 Economic Census of the United States" (2012).

IV.2 Study Participants

The selection of companies for participation in this research study was based on non-probability sampling using the entire dataset provided by Hoover's database. This dataset was comprised of companies with publicly available financial results for the years 2011 through 2015, with listings on the New York Stock Exchange or NASDAQ stock market, and with headquarters in the United States. Initially, 449 companies pulled from Hoover's database fitted this description, but, after inspection, ten companies were removed because they represented outliers with financial performance exceeding 5000% of the average return ratios. The final sample size was thus 439 companies, equal to the minimum sample size required based on a confidence interval of 95% and an accuracy percentage of 50% ("Sample Size Calculator", 2012). The minimum sample size was calculated using the web-based Sample Size Calculator tool, a public service by Creative Research Systems (a survey software company that works closely with Harvard University to provide tools and training on scholarly research methods).

The median age of the firms in this study was 51 years with most firms falling within the 26-to-50-year age frame as shown in Figure 4 below.

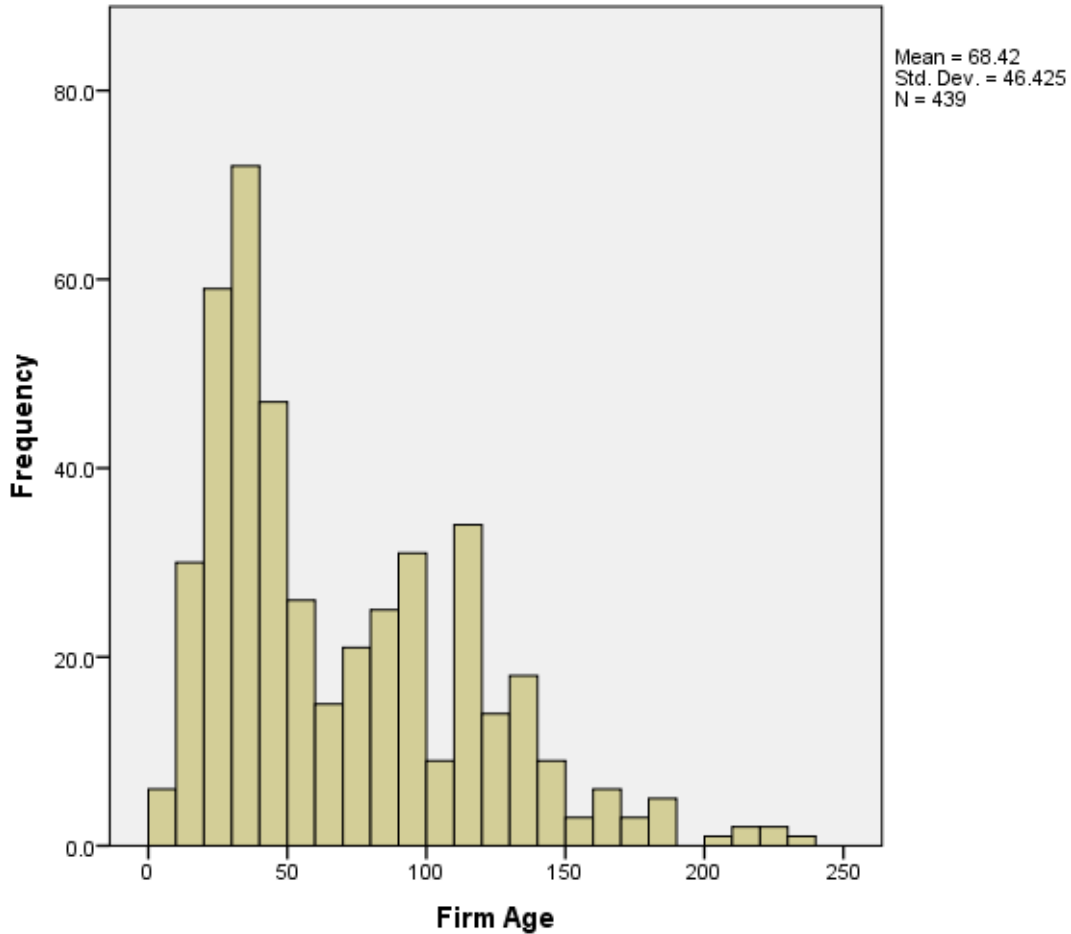


Figure 4: Histogram of Firm Ages.

This figure shows the age of the firms with descriptive statistics presented in the upper right corner.

The sample group of 439 companies operates across 32 industries, which were categorized into eight broader industry groups as depicted in Figure 5 below. As also shown in the figure, most these companies were in the manufacturing industry (134 firms) with various service industries following closely in number (123 firms). The remaining firms made up less than half (41%) of the sample.

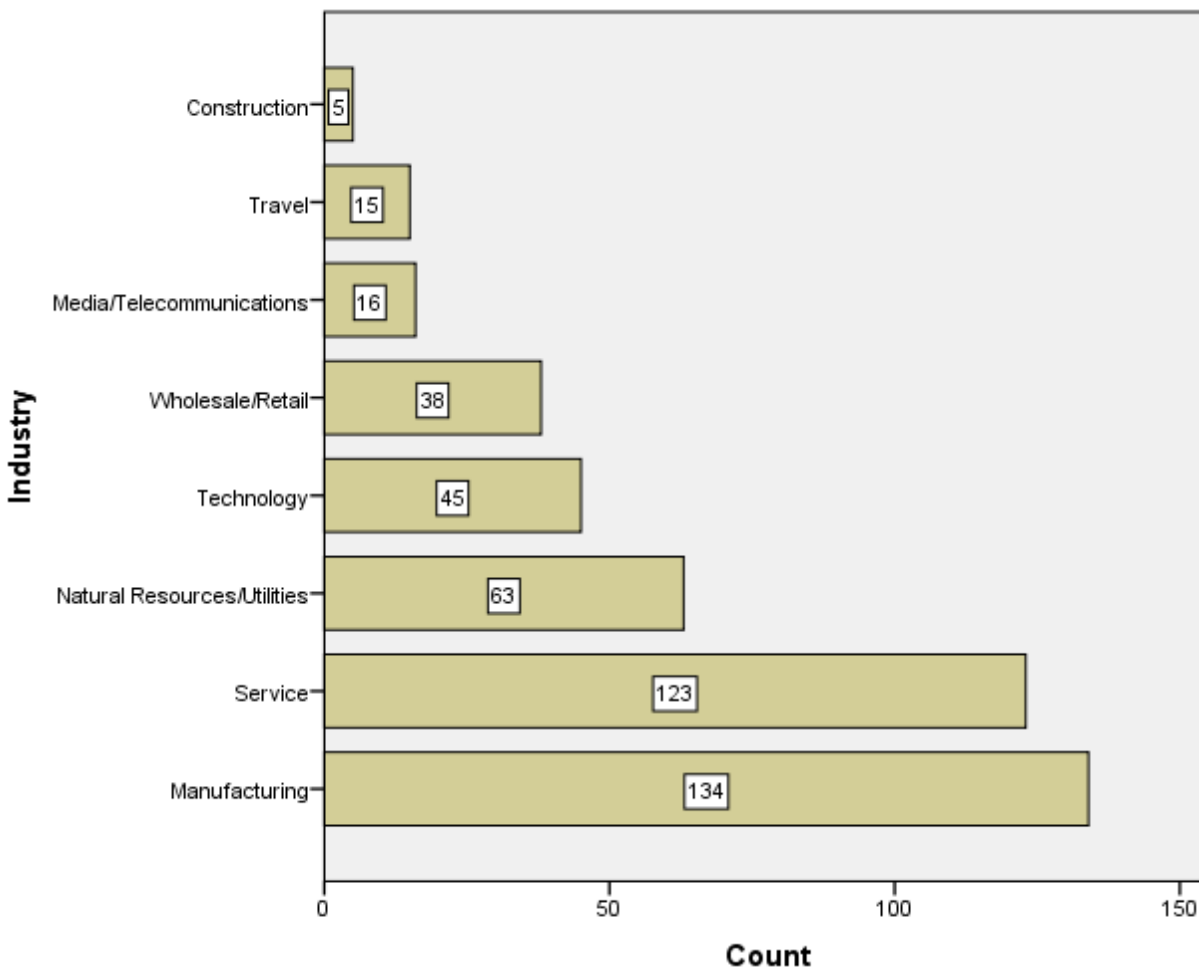


Figure 5: Number of Firms in Each Industry Group.

Drilling down into the 2,594 corporate director positions within the companies across all industries, Figure 7 below shows the distribution of the number of years that each director has served on the company's board by gender and ethnicity. The pattern was similar across the dataset, with the majority of directors in each diversity group having between 9 and 15 years of service on the company's board. This pattern is consistent with that of the overall dataset (also shown below).



Figure 6: Histograms of Director Tenure by Gender and Ethnicity.
Histogram of showing the number of years on the board by gender and ethnicity.

On average, there were (rounding up to the nearest whole number) about 4 white men, 1 minority man, 1 white woman, and no minority women on the board of directors at each firm that had served at least six years on the firm's board. Within the industry groups, the average number of directors that fell within each diversity group (white men, minority men, white women, and minority women) are depicted graphically in Figure 6 below.

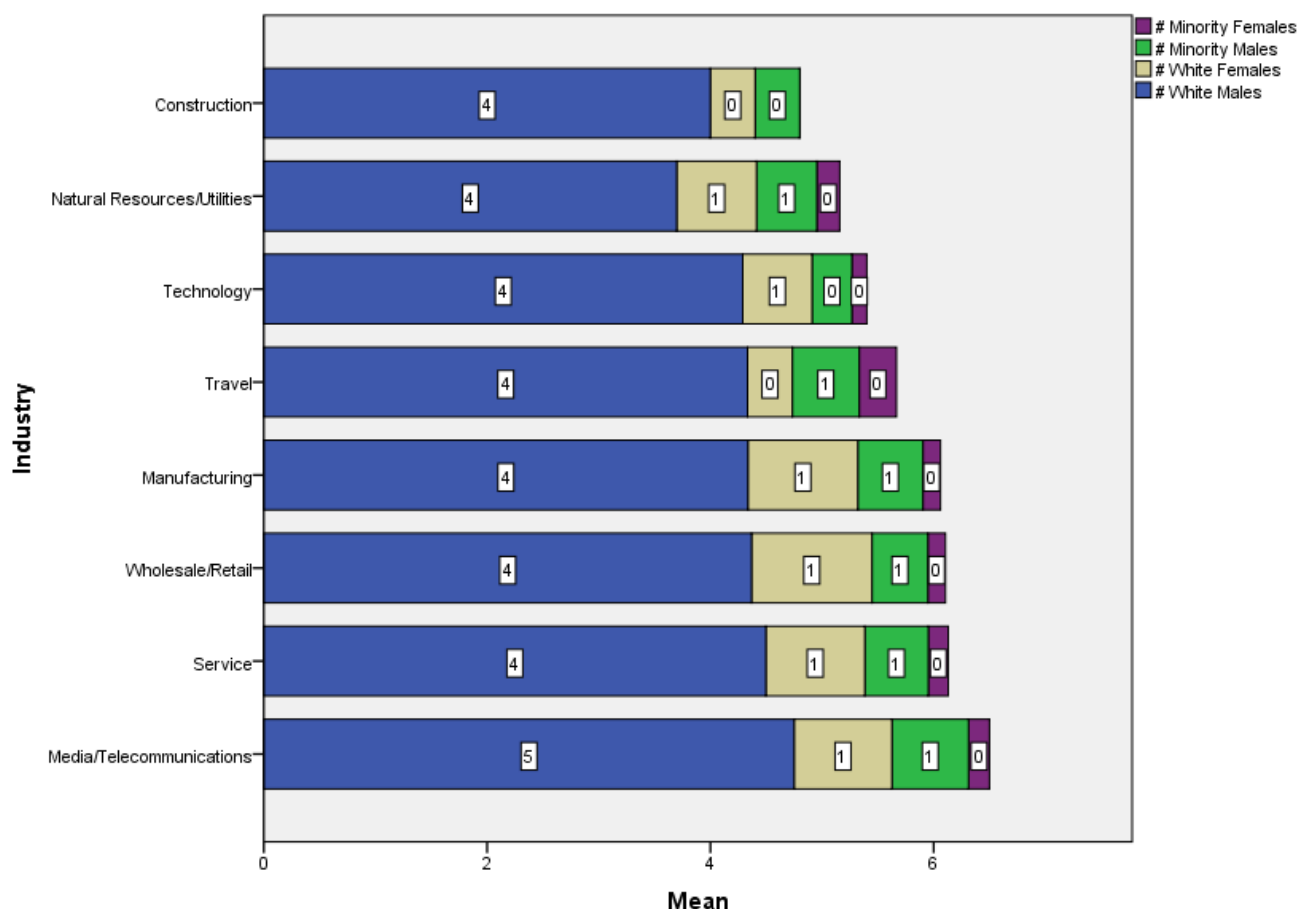


Figure 7: Average Board Seats by Gender, Ethnicity, and Industry.
Average number of board members by gender and ethnicity in each industry group.

Although most firms included in the study were in the manufacturing and service industries, firms within these industries were not the most likely to include minority women on their boards. As shown in Figure 6, firms within the travel industry exhibited a higher likelihood than those within any other industry of having minority women on their boards of directors.

The average board size for companies in this study was eight directors, which is listed along with other industry-specific averages in Table 4 below. As this table also shows, no statistically significant correlation was found between average firm age and number of minority women directors on the board. However, small positive correlations were detected between board size and number of women directors (regardless of ethnicity) and between firm age and

number of women directors (regardless of ethnicity). For minority directors, a moderate positive correlation between board size and number of directors and a small correlation between average firm age and number of directors were found.

Table 4: *Snapshot of Companies Included in Sample*
Number of Companies by Industry Group with Gender & Ethnicity Statistics, Board Size, Firm Age, and Region

Industry	% Minority Women Directors	% Minority Directors	% Women Directors	# Companies	Avg Board Size	Avg Firm Age	Most Common Region
Construction	0.0%	8.3%	8.3%	5	7	50	South
Manufacturing	2.6%	12.2%	18.8%	134	8	86	North
Media/Telecommunications	2.9%	13.5%	16.3%	16	8	56	South
Natural Resources/Utilities	4.0%	14.5%	17.8%	63	7	62	South
Service	2.9%	12.2%	17.4%	123	8	66	North
Technology	2.5%	9.1%	14.0%	45	7	41	West
Travel	5.9%	16.5%	12.9%	15	8	59	South
Wholesale/Retail	2.6%	10.8%	20.3%	38	8	69	Midwest

Correlation: Avg. Board Size & % Minority Women	0.16
Correlation: Avg. Firm Age & % Minority Women	0.07

Correlation: Avg. Board Size & % Minority	0.30
Correlation: Avg. Firm Age & % Minority	0.22

Correlation: Avg. Board Size & % Women	0.25
Correlation: Avg. Firm Age & % Women	0.19

Table 4 above also shows the most common region for companies in each industry. Within the overall dataset, the most common region was the southern portion of the United States, and key southern states were Texas (37 companies), Georgia (17 companies), Virginia (14 companies), Florida, and North Carolina (each with 13 companies). The Midwest was primarily made up of companies in Illinois and Ohio, while the northern region was concentrated in New York and the western region in California.

IV.3 Data Collection

No original data were collected for this study. Instead, secondary data in the form of company financial records, including annual revenue, net income, total assets, and total equity, were downloaded from the Hoover's online database. The list of current corporate directors and the number of years that each director had served on the board was downloaded for each company from MorningStar.com. The ethnicity and gender of each corporate director was assessed by the researcher after either a review of photos available on company websites, social media websites such as LinkedIn or Facebook, or newspaper articles, or using the information listed on the Notable Names Database website (nndb.com). In the event of conflicting information from these various data sources (e.g., inconsistent director lists, etc.), the data found on the company's website were designated as the most reputable source, followed by MorningStar.com, then by nndb.com. In determining a director's ethnic background, I used my best judgment based on the photos available, and, if no photos were available, I deferred to the Notable Names Database.

Because the global fiscal crisis occurred during 2008 with some effects lingering into 2009, the financial records for many companies in the U.S. were expected to be distorted for those years. Additionally, limited public information was available on the ethnicity and gender of corporate directors before year 2000. For these reasons, the most recent five-year period of growth that could be analyzed in-depth was 2011 to 2015, which was the period chosen for this study.

IV.4 Variables

This study included four nominal independent variables, which were used to indicate whether the board consisted of only white men or contained at least one minority woman, at least

one ethnic minority, or at least one woman. Three continuous dependent variables were used to measure firm performance: net profit margin, return on assets (ROA), and return on equity (ROE). Profit margin was calculated as: $(\text{Total Sales Revenue} - \text{Total Expenses}) \div \text{Total Sales Revenue}$. ROA was calculated as: $\text{Net Income} \div \text{Total Assets}$. ROE was calculated as: $\text{Net Income} \div \text{Total Equity (Common Stock)}$.

IV.5 Data Analysis

Following the data analysis procedures suggested by Burns and Burns (2008) and Pallant (2013) for hypothesis testing, *t*-tests of independent samples were performed to compare the means of each sample group (corporate boards with minority women, minorities, and women) to corporate boards with only white men using SPSS. This study investigated whether statistically significant differences in the influences of women, minorities, or minority women directors and of white men directors with respect to firm financial performance were detectable within the data. If a statistically significant difference was found to exist between the two groups, then the effect size was examined to determine the magnitude of the difference. The criteria for significant differences included wide variances between means, small standard deviations, and large sample sizes (Burns & Burns, 2008).

V RESULTS

V.1 Boards with Minority Women vs. Those Comprised Only of White Men

Using an independent sample *t*-test, the mean ROA, ROE, and profit margin of companies that included minority women on their boards of directors were compared against those of companies with only white men on their boards. As shown in Table 5, the means of each financial performance variable differed widely between these two groups. Further, Table 6 shows the results of applying the Levene's Test for Equality of Variances, which are greater than 0.05 for all financial performance variables, indicating that the assumption of equal variances for these two groups has not been violated. Table 6 also shows that the *t*-statistics were negative for all variables, which was consistent with the Hypotheses A and indicated that the mean of Group 2 (i.e., companies that included minority women on their boards of directors) was higher than that of Group 1 (i.e., companies with only white men on their boards of directors).

Notably, the mean growth rates of firms with only white men directors are exceedingly negative. These growth rates are calculated using the following formula:

$$5 \text{ Year Growth Rate} = \frac{(2015 \text{ Metric} - 2011 \text{ Metric})}{2011 \text{ Metric}}$$

As clarification, this calculation determines the both the direction and the magnitude of the percentage change in financial performance over the five-year period. It is important to note that this formula is not a comparison of the average annual performance during these years. It is, rather, a measurement of the extent that the performance metrics have increased or decreased over the five-year period.

Finally, the results of the one-tailed significance test were calculated manually by dividing the results of the two-tailed significance test by two. These results, also displayed in Table 6, were equal to or less than 0.05 for all financial performance variables, showing that the

differences in the means of the two groups were statistically significant for each variable. Based on these results, I rejected the H_{1A} , H_{2A} , and H_{3A} null hypothesis

Table 5: *Descriptive Statistics for Hypothesis A
Minority Women Included vs. Only White Men*

Minority Women Included vs. White Men Only		N	Mean	Std. Deviation	Std. Error Mean
5yr ROE	Only White Men	87	-69.6%	3.196	0.343
Growth	Minority Women Included	73	11.4%	2.957	0.346
5yr ROA	Only White Men	87	-68.6%	2.465	0.264
Growth	Minority Women Included	73	15.4%	3.110	0.364
5yr Margin	Only White Men	87	-80.8%	2.525	0.271
Growth	Minority Women Included	73	9.8%	3.121	0.365

Table 6: *T-Test Results for Hypothesis A
Minority Women Included vs. Only White Men*

		Levene's Test for Equality of Variances		t-test for Equality of Means							
				t	df	Sig. (2-tailed)	Sig. (1-tailed)	Mean Difference	Std. Error Difference	Interval Lower Upper	
5yr ROE Growth	Equal variances	3.355	0.069	-1.651	158	0.101	0.050	-0.810	0.490	-1.778	0.159
	Not equal variances			-1.662	156.461	0.098	0.049	-0.810	0.487	-1.772	0.152
5yr ROA Growth	Equal variances	1.055	0.306	-1.906	158	0.058	0.029	-0.840	0.441	-1.711	0.031
	Not equal variances			-1.868	136.219	0.064	0.032	-0.840	0.450	-1.730	0.049
5yr Margin Growth	Equal variances	2.484	0.117	-2.028	158	0.044	0.022	-0.905	0.446	-1.787	-0.024
	Not equal variances			-1.991	137.950	0.048	0.024	-0.905	0.455	-1.804	-0.006

The effect sizes were then calculated manually as follows:

$$\eta^2 = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

$$ROE\ Growth\ \eta^2 = \frac{-1.651^2}{-1.651^2 + (87 + 73 - 2)} = 1.7\%$$

$$ROA\ Growth\ \eta^2 = \frac{-1.906^2}{-1.906^2 + (87 + 73 - 2)} = 2.2\%$$

$$Profit\ Margin\ Growth\ \eta^2 = \frac{-2.028^2}{-2.028^2 + (87 + 73 - 2)} = 2.5\%$$

These effect sizes were then translated into relevant business terms by multiplying effect size by the mean. Although effect sizes below 6% are generally regarded as small (Pallant, 2013), the effect sizes listed above are equivalent to a 1.2% change in ROE, a 1.5% change in ROA, and a 2.1% change in profit margin for firms with only white men on their corporate boards. On average, this was equivalent to an estimated \$4.6 million in net income, \$3.6 million in assets, and \$6.4 million in equity. These estimations were calculated by multiplying the product of the effect size and the mean by average 2015 net income, assets, and equity, respectively, for the companies included in this study. Simply stated, the addition of minority women to a corporation's board of directors is related to a significant increase in the firm's accounting returns.

V.2 Boards with Minorities vs. Those Comprised of Only White Men

Using an independent sample *t*-test, the mean ROA, ROE, and profit margin of companies that included minorities on their boards of directors were compared against those of companies with only white men on the boards. As shown in Table 7, the means of each financial performance variable differed widely between these two groups.

Notably, the mean growth rates of firms with only white men directors are exceedingly negative. These growth rates are calculated using the following formula:

$$5 \text{ Year Growth Rate} = \frac{(2015 \text{ Metric} - 2011 \text{ Metric})}{2011 \text{ Metric}}$$

As clarification, this calculation determines the both the direction and the magnitude of the percentage change in financial performance over the five-year period. It is important to note that this formula is not a comparison of the average annual performance during these years. It is,

rather, a measurement of the extent that the performance metrics have increased or decreased over the five-year period.

Further, Table 8 shows the results of the Levene's Test for Equality of Variances. For ROA, the result was greater than 0.05, indicating that the assumption of equal variances was not violated for that variable. However, for ROE and profit margin, the results were less than 0.05, indicating that the assumption of equal variances had been violated for those variables.

Following the appropriate line of results on Table 8, we also see that a negative *t*-statistic was generated for all variables, as was consistent with the Hypotheses B and indicated that the Group 2 mean (i.e., that of companies that included minorities on their boards of directors) was higher than that of Group 1 (i.e., companies with only white men on their boards of directors). Finally, the results of the one-tailed significance test were calculated manually by dividing the results of the two-tailed significance test by two. These results, also displayed in Table 8, were equal to or less than 0.05 for all financial performance variables, indicating that the differences in the means of these two groups was statistically significant for each variable. Based on these results, I rejected the H_{1B}, H_{2B}, and H_{3B} null hypotheses.

Table 7: Descriptive Statistics for Hypothesis B
Minorities Included vs. Only White Men

Minorities Included vs. White Men Only		N	Mean	Std. Deviation	Std. Error Mean
5yr ROE Growth	Only White Men	87	-69.6%	3.196	0.343
	Minorities Included	238	32.2%	2.479	0.161
5yr ROA Growth	Only White Men	87	-68.6%	2.465	0.264
	Minorities Included	238	24.0%	2.627	0.170
5yr Margin Growth	Only White Men	87	-80.8%	2.525	0.271
	Minorities Included	238	12.6%	2.193	0.142

Table 8: T-Test Results for Hypothesis B
Minorities Included vs. Only White Men

		Levene's Test for Equality of Variances		t-test for Equality of Means							
				t	df	Sig. (2-tailed)	Sig. (1-tailed)	Mean Difference	Std. Error Difference	Interval Lower	Interval Upper
5yr ROE Growth	Equal variances	4.817	0.029	-3.021	323	0.003	0.001	-1.018	0.337	-1.680	-0.355
	Not equal variances			-2.689	125.777	0.008	0.004	-1.018	0.378	-1.766	-0.269
5yr ROA Growth	Equal variances	1.562	0.212	-2.861	323	0.005	0.002	-0.926	0.324	-1.564	-0.289
	Not equal variances			-2.947	162.122	0.004	0.002	-0.926	0.314	-1.547	-0.306
5yr Margin Growth	Equal variances	9.223	0.003	-3.261	323	0.001	0.001	-0.934	0.286	-1.497	-0.370
	Not equal variances			-3.055	136.235	0.003	0.001	-0.934	0.306	-1.538	-0.329

The effect sizes were then calculated manually as follows:

$$\eta^2 = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

$$ROE\ Growth\ \eta^2 = \frac{-2.689^2}{-2.689^2 + (87 + 238 - 2)} = 2.2\%$$

$$ROA\ Growth\ \eta^2 = \frac{-2.861^2}{-2.861^2 + (87 + 238 - 2)} = 2.5\%$$

$$Profit\ Margin\ Growth\ \eta^2 = \frac{-3.055^2}{-3.055^2 + (87 + 238 - 2)} = 2.8\%$$

These effect sizes were then translated into relevant business terms by multiplying the effect size by the mean. Although effect sizes below 6% are generally regarded as small (Pallant, 2013), the effect sizes listed above were equivalent to a 1.5% change in ROE, a 1.7% change in ROA, and a 2.3% change in profit margin for firms with only white men on their corporate boards. On average, this was equivalent to an estimated \$6.8 million in net income, \$10.4 million in assets, and \$9.6 million in equity. These estimations were calculated by multiplying the product of the effect size and the mean by the average 2015 net income, assets, and equity, respectively, for the companies included in this study. Simply stated, the addition of minorities to a corporation's board of directors is related to a significant increase in the firm's accounting returns.

V.3 Boards with Women vs. Those Comprised Only of White Men

Using an independent sample *t*-test, the mean ROA, ROE, and profit margin of companies that included women on their boards of directors were compared against those of companies with only white men on their boards. As shown in Table 9, the means of each financial performance variable differed widely between these two groups.

Notably, the mean growth rates of firms with only white men directors are exceedingly negative. These growth rates are calculated using the following formula:

$$5 \text{ Year Growth Rate} = \frac{(2015 \text{ Metric} - 2011 \text{ Metric})}{2011 \text{ Metric}}$$

As clarification, this calculation determines the both the direction and the magnitude of the percentage change in financial performance over the five-year period. It is important to note that this formula is not a comparison of the average annual performance during these years. It is,

rather, a measurement of the extent that the performance metrics have increased or decreased over the five-year period.

Further, Table 6 shows the results of Levene's Test for Equality of Variances, which are greater than 0.05 for all financial performance variables, indicating that the assumption of equal variances for these two groups was not violated. As Table 10 also shows, the *t*-statistics were negative for all variables, which was consistent with the Hypotheses C and indicated that the Group 2 mean of (i.e., that of companies that included women on their boards of directors) was higher than that of Group 1 (i.e., companies with only white men on their boards of directors). Finally, the results of the one-tailed significance test were calculated manually by dividing the results of the two-tailed significance test by two. These results, also displayed in Table 10, were equal to or less than 0.05 for all financial performance variables, showing that the differences in the means of these two groups were significant for each variable. Based on these results, I rejected the H_{1C}, H_{2C}, and H_{3C} null hypotheses.

Table 9: *Descriptive Statistics for Hypothesis C*
Women Included vs. Only White Men

Women Included vs. White Men Only		N	Mean	Std. Deviation	Std. Error Mean
5yr ROE Growth	Only White Men	87	-69.6%	3.196	0.343
	Women Included	297	28.6%	2.801	0.163
5yr ROA Growth	Only White Men	87	-68.6%	2.465	0.264
	Women Included	297	22.7%	2.494	0.145
5yr Margin Growth	Only White Men	87	-80.8%	2.525	0.271
	Women Included	297	16.8%	2.785	0.162

Table 10: T-Test Results for Hypothesis C
Women Included vs. Only White Men

		Levene's Test for Equality of Variances		t-test for Equality of Means							
				t	df	Sig. (2-tailed)	Sig. (1-tailed)	Mean Difference	Std. Error Difference	Interval Lower	Interval Upper
5yr ROE Growth	Equal variances	2.980	0.085	-2.783	382	0.006	0.003	-0.982	0.353	-1.676	-0.288
	Not equal variances			-2.589	127.177	0.011	0.005	-0.982	0.379	-1.732	-0.231
5yr ROA Growth	Equal variances	1.493	0.222	-3.010	382	0.003	0.001	-0.913	0.303	-1.509	-0.317
	Not equal variances			-3.029	141.604	0.003	0.001	-0.913	0.301	-1.508	-0.317
5yr Margin Growth	Equal variances	3.653	0.057	-2.934	382	0.004	0.002	-0.976	0.333	-1.630	-0.322
	Not equal variances			-3.096	152.601	0.002	0.001	-0.976	0.315	-1.599	-0.353

The effect sizes were then calculated manually as follows:

$$\eta^2 = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

$$ROE\ Growth\ \eta^2 = \frac{-2.783^2}{-2.783^2 + (87 + 297 - 2)} = 2.0\%$$

$$ROA\ Growth\ \eta^2 = \frac{-3.010^2}{-3.010^2 + (87 + 297 - 2)} = 2.3\%$$

$$Profit\ Margin\ Growth\ \eta^2 = \frac{-2.934^2}{-2.934^2 + (87 + 297 - 2)} = 2.2\%$$

These effect sizes were then translated into relevant business terms by multiplying effect size by mean. Although effect sizes below 6% are generally regarded as small (Pallant, 2013), the effect sizes listed above were equivalent to a 1.4% change in ROE, a 1.6% change in ROA, and a 1.8% change in profit margin for firms with only white men on their corporate boards. On average, this was equivalent to an estimated \$6.5 million in net income, \$12.9 million in assets, and \$10.9 million in equity. These estimations were calculated by multiplying the product of the effect size and the mean by the average 2015 net income, assets, and equity, respectively, for the companies included in this study. Simply stated, the addition of women to a corporation's board of directors is related to a significant increase in the firm's accounting returns.

VI DISCUSSION

In this study, I investigated the relationship between gender and ethnic diversity within a corporation's board of directors and the five-year growth rates in firm financial performance, specifically in ROA, ROE, and profit margin. To test this, I compared the average growth rates of corporate boards comprised of only white men to corporate boards that included minority women, minorities, and women. As a result, I found that the inclusion of each diversity group in the boardroom independently is related to statistically significant increases in ROA, ROE, and profit margin. These results are in line with both upper echelons theory and the conversion theory of minority influence. Notably, however, the diversity groups that included ethnic minorities of either gender had the strongest effect sizes, particularly in regard to profit margin growth. These findings are summarized in Table 11 below.

Table 11: Summary of Findings

Hypothesis	Description	Results	Effect Size
H _{1A}	The 5-year growth rates in ROA of firms with minority women on their boards of directors are greater than those of firms without minority women on their boards of directors.	Supported	2.2% \$3.5 Million
H _{2A}	The 5-year growth rates in ROE of firms with minority women on their boards of directors are greater than those of firms without minority women on their boards of directors.	Supported	1.7% \$6.4 Million
H _{3A}	The 5-year growth rates in profit margin of firms with minority women on their boards of directors are greater than those of firms without minority women on their boards of directors.	Supported	2.5% \$4.6 Million
H _{1B}	The 5-year growth rates in ROA of firms with minorities on their boards of directors are greater than those of firms without minorities on their boards of directors.	Supported	2.5% \$10.4 Million
H _{2B}	The 5-year growth rates in ROE of firms with minorities on their boards of directors are greater than those of firms without minorities on their boards of directors.	Supported	2.2% \$9.6 Million
H _{3B}	The 5-year growth rates in profit margin in firms with minorities on their boards of directors are greater than those of firms without minorities on their boards of directors.	Supported	2.8% \$6.8 Million
H _{1C}	The 5-year growth rates in ROA of firms with women on their boards of directors are greater than those of firms without women on their boards of directors.	Supported	2.3% \$12.9 Million
H _{2C}	The 5-year growth rates in ROE of firms with women on their boards of directors are greater than those of firms without women on their boards of directors.	Supported	2.0% \$10.9 Million
H _{3C}	The 5-year growth rates in profit margin of firms with women on their boards of directors are greater than those of firms without women on their boards of directors.	Supported	2.2% \$6.5 Million

As predicted, these results show evidence that the persons at the top of the corporate ladder may indeed influence the bottom line of the organization. Although this relationship has already been established in the literature in support of upper echelons theory (Aziri, 2014; Hambrick, 2007; Hambrick & Mason, 1984), the results of this study reinforced claims in the literature that these positions are valid. Additionally, these findings also confirmed the validity of the theoretical concepts of minority influence. In particular, it appears that the opinions of the minority group members ignite divergent thinking within those boards of directors, as the boards with minority directors appear to make strategic decisions that are fundamentally different from

those made by boards comprised only white men, as evidenced by the differences in the mean growth rates for each financial performance metric between these two groups. However, the small effect sizes of these results indicate that, even as increased diversity is apparently linked to increased growth, the magnitude of this achievement is notably small, although the fact that there are substantially fewer firms having minorities and minority women in particular as directors (when compared to the number of firms with white men and white women directors, respectively) may contribute to the small effect sizes.

VI.1 Implications for Academic Research

A considerable amount of the research on the relationship between boardroom diversity and firm financial performance has been stimulated by upper echelons theory (Hassan et al., 2015; Post & Byron, 2015), agency theory (Carter et al., 2010; Isidro & Sobral, 2015; Liu et al., 2013; Nguyen et al., 2015; Ujunwa et al., 2012), and resource dependency theory (Carter et al., 2010; Isidro & Sobral, 2015; Liu et al., 2013; Nguyen et al., 2015; Ntim, 2015; Ujunwa et al., 2012). Underlying each of these theories is the assumption that board members must collaborate to collectively influence firm performance. This study contributes to theory by examining the results of this boardroom collaboration through the added scope of minority influence, which lends itself to a more nuanced explanation of the results. Furthermore, the findings of this study will have a significant impact within academia, as it fills the gap in empirical research comprised of the combined outcomes of ethnic and gender diversity as they relate to firm financial results. This additional insight represents an important contribution across the increasingly popular and academically relevant domain of diversity in leadership as it relates to gender and cultural studies in corporate governance. Also, by focusing on medium-term growth rather than short-term

performance, this study provides greater depth to the field by taking a unique perspective on firm financial performance.

VI.2 Implications for the Business Community

As businesses often attempt to replicate the best practices of high-performing firms in an effort to achieve similar performance levels, the results of this study suggest that organizations should strongly consider altering their recruitment and retention efforts, particularly regarding diversity policies and practices at the executive leadership level, in order to achieve increased growth in firm financial performance. The findings of this study, which show a positive relationship between boardroom diversity and firm accounting returns imply that the business community should strive to incorporate a greater range of diversity in their boardrooms. Additionally, businesses should target adding minority women, specifically, because this often-overlooked segment of the leadership community are associated with more potent increases in profitability.

VI.3 Limitations

A key limitation of the study was the potential for some other stimuli to act as a catalyst for board performance, rather than the diversity of the board itself. For example, previous studies have indicated that “larger boards may limit the influence of any individual director and may constrain the extent to which the board in general influences firm-level decisions” (Post & Byron, 2015). For this reason, board size was documented and controlled for as a part of this study. Furthermore, a study in the *British Journal of Management* found that women directors are most often appointed to boards in periods of downturn of the company’s stock, which might explain the poor accounting returns that are experienced after women are appointed to boards, as the negative performance may have already been in progress (Ryan & Haslam, 2005).

Another limitation of the current research is that similar outcomes may not apply to smaller firms. This study only included firms that are traded on the NYSE and NASDAQ, and firms listed on these stock exchanges are inherently large in terms of assets and income. This is due primarily to the financial requirements for listing on these exchanges (Cheng & Stunda, 2015). NASDAQ requires at least \$1 million in annual income, \$75 million in assets, and 1.1 million shares of stock distributed to at least 400 shareholders and valued at \$15 million. Similarly, the NYSE requires at least \$2 million in annual income, \$75 million in assets, and 1.1 million shares of stock distributed to at least 400 shareholders and valued at \$50 million. Thus, the likelihood of small firms being included in these exchanges, and consequentially, in this analysis, was very small.

Finally, because of time constraints, this study was unable to incorporate a more in-depth examination of the impacts of each minority director included in the study. Future research in this area should incorporate a staggered, individualized analysis of accounting returns in the five-year period directly before and after the entry of each minority director on the board to determine if any significant change can be documented surrounding the inclusion of that particular director.

VI.4 Future Research

Although the statistical methods used in this study can be useful toward predicting the relative profitability of firms based on the presence of ethnic or gender diversity within their boards, these methods do not allow for the assertion of casual inferences. While the current research has established temporal precedence (at least partly) and covariation, future researchers should focus on eliminating any alternative explanations for these positive relationships so as to establish causality between boardroom diversity and increased accounting returns.

Furthermore, this study was a general investigation of the financial growth associated with boardroom diversity over a wide range of industries. However, a more targeted version of this analysis could be beneficial in terms of industrial contexts. That type of focus would also allow for a more comprehensive study of organizational performance to include operational benchmarks and social responsibility in an approach similar to a balanced scorecard, thus providing a more impactful examination for engaged scholarship and evidence-based management audiences. Other possible areas of research are the regional differences related to diversity practices and firm performance and a mixed-methods approach employing interviews with board directors to examine the effects of minority influence from a first-person perspective.

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Zahra, S. A., & Stanton, W. W. (1988). The implications of board of directors' composition for corporate strategy and performance. *International journal of management*, 5(2), 229-236.

VITA

Dionne Roberts is a senior finance manager, based in Atlanta, Georgia with over 13 years of professional experience within industry-leading, multi-national corporations. This experience ranges across a broad array of industries: chiefly, management consulting, airlines, business-to-business services, logistics, and soft drinks. With a bachelor degree in Finance, and an MBA, her key areas of expertise are corporate financial performance, business valuations, and data analytics.