DEMOGRAPHIC DIVERSITY IN THE BOARDROOM: MEDIATORS OF THE BOARD DIVERSITY-FIRM PERFORMANCE RELATIONSHIP

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ABSTRACT

Whereas the majority of research on board diversity explores the direct relationship between racial and gender diversity and firm performance, this paper investigates mediators that explain how board diversity is related to firm performance. Grounded in signaling theory and the behavioral theory of the firm, we suggest that this relationship operates through two mediators: firm reputation and innovation. In a sample of *Fortune 500* firms, we find a positive relationship between board racial diversity and both firm reputation and innovation. We find that reputation and innovation both partially mediate the relationship between board racial diversity and firm performance. In addition, we find a positive relationship between board gender diversity and innovation.

Keywords: board of directors, diversity, reputation, innovation, performance

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INTRODUCTION

Women and racial minorities continue to make strides into the boardroom where, according to the Alliance for Board Diversity (2005), 14.9% of directors in the Fortune 100 companies are from minority racial groups. The 2007 Catalyst census reports that women hold 14.8% of the *Fortune 500* board seats, a 5.2% increase since 1995 (Catalyst, 2008). In addition, while there were no African-American directors on *Fortune 500* boards in 1960, there were over 150 African-American directors by 1995, and 260 directors by 2005 (The Executive Leadership Council, 2006). The number of Hispanic directors also increased to 3.1% of *Fortune 500* board seats in 2006, a 26% increase since 2003 (Hispanic Association on Corporate Responsibility, 2007).

Many firms from Bank of America to Sara Lee are also beginning to assert that board diversity leads to higher firm performance (Brancato, 1999; Carter, Simkins and Simpson, 2003; Mattis, 2001), and scholars have begun to explore the relationship between board diversity and firm performance. Several researchers investigating this question have found that both racial and gender diversity in the boardroom positively influence firm performance (Carter et al. 2003; Erhardt, Werbel and Shrader, 2003). However, other studies have reported contradictory findings, with Shrader, Blackburn and Iles (1997) finding a negative relationship between the percentage of women on boards and firm performance, and both Dwyer, Richard and Chadwick (2003) and Dimovski and Brooks (2006) reporting no direct relationship between gender diversity and firm performance.

Consequently, scholars have suggested that intervening, or mediating, variables between diversity and performance must be examined to uncover when and how diversity improves performance (Gabrielsson and Huse, 2004; Kochan et al., 2003; Miller, Burke and Glick, 1998;

Milliken and Martins, 1996). In fact, the Business Opportunities for Leadership Diversity (BOLD) Project found few direct effects of race or gender diversity on performance, which led the authors to suggest that intervening variables should be explored in future research (Kochan et al., 2003). Therefore, we explore this question by examining how board racial and gender diversity impact firm performance through two mediating variables: innovation and reputation. We define *innovation* as strategies that provide new opportunities for the firm to create products or services. Consistent with previous research, we define *reputation* as an assessment of an organization's quality or esteem compared to other organizations (Deephouse and Carter, 2005; Fombrun, 1996).

We focus on innovation and reputation as the mediators in this paper because prior research shows that both of these variables are important predictors of firm performance. Research has both theorized and empirically found that innovation can lead to the development of capabilities that improve firm performance (Caves and Ghemawat, 1992; Nelson and Winter, 1982; Teece, Pisano & Shuen, 1997; Zahra & Garvis, 2000). Reputation has also been described as a valuable resource that allows firms to generate superior financial performance (Black, Carnes and Richardson, 2000; Gregory, 1998; Gregory, 1998; Hall, 1993; Knight and Pretty 1999; Roberts and Dowling, 2002). In the following sections, we present our arguments for why board racial and gender diversity should influence both innovation and reputation, and ultimately firm performance.

The study makes several contributions to the corporate governance and diversity literatures. First, this study makes a theoretical contribution to the corporate governance literature by analyzing board diversity within the framework of two major theories: the behavioral theory of the firm (Cyert and March, 1963) and signaling theory (Certo, 2003;

Deutsch and Ross, 2003; Johnson, Daily and Ellstrand, 1996; Waddock, 2000). Diverse human capital on boards influences the strategic direction of the firm by providing cognitive conflict which may result in innovative ideas (Amason, 1996; Hillman, Cannella and Harris, 2002; Rindova, 1999). The behavioral theory of the firm suggests that the more comprehensive the information available and evaluated during the decision-making process is, the more innovative a group's decision will be (Cyert and March, 1963). Thus, we rely on the behavioral theory of the firm to explain the connection between board racial and gender diversity and innovation.

Signaling theory, on the other hand, posits that firms use visible signals to gain reputation and status among the public. In previous literature, both the characteristics of board members and the composition of the board itself have been shown to signal the quality of the firm to the public, influencing firm reputation (Certo, 2003; Pfeffer and Salancik, 1978). Because diverse boards may signal adherence to social laws and values, as well as the ability to understand diverse stakeholders and markets in which the firm does business, we propose that racial and gender diversity are related to firm performance.

This paper also makes a theoretical contribution to the diversity and governance literature by providing a better understanding of how the relationships between board gender and racial diversity and firm performance operate. As previously mentioned, studies analyzing the relationship between diversity and firm performance have produced mixed results. As such, it is important to probe the intervening variables in the relationship between board diversity and firm performance because this relationship may be "complex and indirect" (Forbes and Milliken, 1999, p. 490). Therefore, this study extends the literature by providing evidence of two intervening variables: innovation and reputation.

Finally, this study advances our understanding of board racial and gender diversity at the highest ranks of leadership in firms. Scarce attention has been given to diversity topics in the strategic management literature (Dwyer et al., 2003). In fact, Bilimoria (2000) calls for more research into the relationship between the presence of women in the boardroom and firm reputation to understand how women directors may enhance firm reputation. This study explores the effects of diversity at the top of the managerial ranks in order to understand its implications and contribute to an undeservedly ignored body of literature.

The remainder of the paper proceeds as follows. We begin by describing the governance function, providing a context for evaluating the effects of board diversity. We next discuss innovation and reputation-building in the context of board diversity. Following this, measures, statistical analyses, and results are presented. Finally, we discuss the contributions, limitations, and conclusions of this research.

GOVERNANCE AND THE BOARD OF DIRECTORS

Daily, Dalton, and Cannella (2003) define governance as the determination of the resource deployment and conflict resolution among the diverse interests of organizational stakeholders. While a number of studies have focused on the monitoring and controlling role of boards (Baysinger and Hoskisson, 1990; Kesner, 1987; Lane, Cannella and Lubatkin, 1998; Pearce and Zahra, 1992), another primary role of the board of directors is to provide resources to the firm (Hillman and Dalziel, 2003; Johnson et al., 1996; Mizruchi, 1996; Parker, 2007; Pfeffer and Salancik, 1978; Ruigrok, Peck and Keller, 2006). Hillman and Dalziel (2003) suggest that directors act as boundary spanners in the environment, securing resources for the organization and providing strategic advice that aids in firm survival and performance. Directors, then, reduce uncertainty for the firm by connecting the firm to the outside community and bringing

information, skills, and legitimacy to the firm (Hillman, Cannella and Paetzold, 2000). While some doubt the influence of directors on strategic actions of the firm (Henke, 1983; Melcher, 1996), more recent research published both in the United States (U.S.) and the United Kingdom (U.K.) has linked the board of directors to firm strategic actions (Beekes, Pope and Young, 2004; Chatterjee, Harrison and Bergh, 2003; Johnson et al., 1996; Rindova, 1999; Stiles, 2001). Prior research has also established a link between the board of directors and firm performance (Dalton, Daily, Ellstrand and Johnson, 1998; Hill and Snell, 1988; Kesner, 1987; Pearce and Zahra, 1992).

However, what has not been well established is how and why the board of directors influences the firm. Some researchers have explored the role that board heterogeneity plays in influencing innovation and signaling firm quality to the public (Baysinger, Kosnik and Turk, 1991; Certo, 2003; Deutsch, 2005; Deutsch and Ross, 2003; Hill and Snell, 1988). Others have focused on understanding how board characteristics and diversity influence firm performance and other economic outcomes (Carter et al., 2003; Dalton et al., 1998; Erhardt et al., 2003; Lane et al., 1998; Pearce and Zahra, 1992). Yet, no research to date has investigated the effect of gender and racial diversity of the board on firm performance through the mediators, innovation and reputation.

Blau (1977, p. 276) defined diversity as "the great number of different statuses among which a population is distributed." Because "race and gender are often considered proxies of different perspectives individuals bring to organizations" (Hillman et al., 2002, p. 749), the human capital on demographically diverse boards should result in divergent and unique views and backgrounds brought to the firm. Supporting this perspective, Hillman and colleagues (2002) found demographic characteristics of directors may influence strategic choices of the firm

because there are differences in human and social capital among directors of different races and genders.

In this paper we focus on race and gender diversity for two specific reasons. First, recent legislation and diversity efforts worldwide have drawn more attention to the importance of female representation on boards of directors. Women are under-represented not only on Fortune 500 boards in the United States, but also on the FTSE 100 boards in the United Kingdom (Singh, Terjesen, and Vinnicombe, 2007; Singh and Vinnicombe, 2003, 2004) and in other countries as well. For example, in Norway the government is now requiring companies to appoint women to their corporate boards to achieve 40% females within the next three years, and Sweden has implemented similar legislation with a target of 25% female representation (Hoel, 2004; Singh and Vinnicombe, 2006). The Sarbanes-Oxley Act of 2002 in the United States, legislation that calls for more independence of the members on boards, has been heralded as an opportunity for more females to become directors. This is a potential opportunity for women to gain seats on boards, because the majority of females on boards are outside directors (Dalton, Dalton and Certo, 2006). These diversity initiatives demonstrate the importance and timeliness of studying diversity on boards. Second, we focus on racial and gender diversity because these are topics of practical importance to companies today. There are growing numbers of women in top management positions today, with the pipeline for women CEOs and directors expected to increase (Giscombe and Mattis, 2002; Helfat, Harris and Wolfson, 2006). In addition, racial minorities now make up the majority of the U.S. population within 18 of the largest 25 markets where most business transactions take place (Bureau of Labor Statistics, 2005; Gomez-Mejia, Balkin and Cardy, 2007). Because of this diverse working environment, 92% of companies in the U.S. report efforts targeted at gender diversity, and 90% report efforts targeted at racial

diversity (Catalyst, 2006b). Therefore, companies operate in a very diverse environment today, and they expend a good deal of effort trying to attract and manage that diversity.

While our focus is on both gender and racial diversity, we must acknowledge that there are both similarities and differences between these two types of diversity. Some similarities that are shared between female and minority directors are that they are both more likely to have backgrounds outside the business arena, to have higher-level educational degrees, and to more quickly become a member of other boards compared to male directors (Hillman et al., 2002). Both gender and race are highly visible types of diversity that may send signals to the public (Tsui, Egan and O'Reilly, 1992) and both racial minorities and females are traditionally underrepresented on boards (Catalyst, 2006a; Alliance for Board Diversity, 2005).

However, research suggests that the perception of human and social capital benefits may differ between gender and racially diverse boards. For example, Ibarra (1995) found that racial status has a stronger effect on the perceived utility of career and task related networks than gender, indicating that minority networks are perceived to be more diverse and beneficial to firms than those of women. Differences between racial and gender diversity can also be found in the types of information that they are perceived to provide. For example, researchers have noted that racial/cultural diversity is a critical resource for a firm to understand its culturally diverse customer base (Richard, 2000) and shape corporate strategy in a particular market context (Amason, 1996).

In this paper we are primarily concerned with the mediating roles of innovation and reputation within the board demographic diversity - firm performance relationship. Our perspective is consistent with the "value in diversity" hypothesis (Cox, Lobel and McLeod, 1991) which maintains that a key advantage to team diversity is that diverse groups should

provide a broader range of knowledge, information and perspectives compared to homogenous groups. Consistent with others who have stated that it is imperative for researchers to uncover the processes that link diversity to performance (Lawrence, 1997), in the next sections we build arguments supporting the role of innovation and reputation as mediators between board racial and gender diversity and firm performance.

BOARD DIVERSITY AND INNOVATION

Corporate innovation strategies are defined as those strategies that provide new strategic opportunities for the firm to create new services or product lines. Innovation has become one of the key strategies of the firm for gaining competitive advantage (Hitt, Hoskisson, Johnson and Moesel, 1996), expanding market share (Franko, 1989) and increasing firm performance (Morbey, 1988). Because innovation is vital to a firm, researchers have increasingly examined the relationship between governance and innovation strategies (Baysinger et al., 1991; Graves, 1988; Hansen and Hill, 1991; Hill and Snell, 1988; Hitt et al., 1996; Zahra, 1996). Baysinger et al. (1991), for example, established that board structure influences corporate innovation by aligning incentives of ownership for directors. Theoretically, directors on the board are challenged with the task of allocating resources and providing ideas and relationships that increase the innovation of the firm. Board diversity provides strategic human and social capital resources to firms which influence these efforts, thereby increasing innovation.

There is also reason to believe that the demography of top leadership teams should influence firm innovation. For example, Bantel and Jackson (1989) suggested that functional and educational diversity on the executive team increases the team's creativity and innovation due to the diverse human capital of top management. When elites make decisions, they are

influenced by their past experiences (Cyert and March, 1963) and demographic characteristics (Hambrick and Mason, 1984). Robinson and Dechant (1997) suggest that attitudes, cognitive functions, and beliefs are not randomly distributed in the population, but tend to vary systematically with demographic variables, such as age, race, and gender. Thus, scholars posit that racial diversity increases the number of ideas, promotes creativity, and leads to increased innovation (Cox, 1993). In other words, the knowledge embodied in a firm's human and social capital can be a competitive advantage through identification of opportunities for innovation.

Support for the idea that board racial and gender diversity should be related to firm innovation may also be found in the behavioral theory of the firm (Cyert and March, 1963). The behavioral theory of the firm posits that the extensiveness of the search and decision making processes can influence innovation in organizations. Decisions can be biased by the information within the decision making group, especially when the search process is conducted by a homogeneous group that focuses only on areas in which group members have previous experience (Hambrick and Mason, 1984). For example, boards advise and identify which businesses to enter and acquire, and the less information they have on the attractiveness of the market, the more innovation is perceived as a risk. Homogeneous groups may actually hamper innovation because high levels of cohesion produce pressures towards conformity.

Heterogeneous groups, on the other hand, should produce a broader range of ideas and information because they contain a diverse body of knowledge (Milliken and Vollrath, 1991). Unique ideas and perspectives impact the identification, development and selection of decisions (Mintzberg, Raisinghani and Theoret, 1976). In the identification phase, both racial and gender diversity on the board help identify new innovative opportunities. Diverse groups also have a greater variety of ideas and perspectives presented to search for and design solutions in the

development stage. This implies that racial and gender diversity allows for a more thorough evaluation of choices in the selection stage because of the increased information available. Empirical research on group decision-making has supported this assertion, showing that heterogeneous groups produce higher quality decisions than homogenous groups on complex tasks (Amason, 1996; Hoffman, 1959; Hoffman and Maier, 1961) and generate more innovative solutions than homogenous groups through cognitive conflict (Amason, 1996; Chen, Liu and Tjosvold, 2005). On the board, this often occurs as directors are able to provide divergent perspectives. These findings are consistent with the behavioral theory of the firm because the breadth of information associated with team heterogeneity is related to innovation.

However, it is not only human capital that is provided by racial and gender diversity. Demographic diversity has also been linked with differences in social capital and network resources. Social capital is the sum of social resources embedded in a social relationship, yielding benefits of referral, timing, and information (Burt, 1992; Coleman, 1988). Burt (1992) suggested the value of diversity of ties, asserting that greater information is received by forming links with individuals outside the immediate network. When firms have diverse ties, they are better able to innovate (Burt, 1997; Granovetter, 1973; Robertson, Swan and Newell, 1996). Firms that have these non-redundant ties engage in interactions which help executives overcome decision biases and improve the quality of decisions (Daft and Lengel, 1984; O'Reilly, 1983). Rodan and Galunic (2004), for example, found that heterogeneous managerial knowledge from network structures positively impacts innovation.

Coincidentally, the social networks of females and minorities also tend to be more diverse than those of white males (Ibarra, 1992, 1993). Because women and minorities must maintain multiple networks in order to obtain their career and social resources (Ibarra, 1992,

1993), they maintain a broad range of contacts and are more likely to maintain weak ties. These weak ties, in turn, are known to be valuable because they provide non-redundant information that can be critical to the firm's success (Granovetter, 1973). As such, the information from females and minorities can be a pivotal source of information which supports innovative activity. Again, this is consistent with the behavioral theory of the firm because the diversity of information provided from the networks of females and minorities is expected to lead to innovation. Therefore, we expect a positive relationship between board diversity and firm innovation. Figure 1 represents the relationship between board gender and racial diversity and innovation.

Hypothesis 1a: Board gender diversity is positively related to firm innovation.

Hypothesis 1b: Board racial diversity is positively related to firm innovation.

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BOARD DIVERSITY AND FIRM REPUTATION

Reputation is "a perceptual representation of a company's past actions and future prospects that describe *the firm's overall appeal to all its key constituents*" (Fombrun, 1996, p. 72). Consistent with this definition and that of others (Deephouse and Carter, 2005; Lawrence, 1998), we define reputation as an assessment of a firm's quality or esteem compared to other organizations. It is helpful to distinguish between reputation and legitimacy here. While legitimacy describes social acceptance stemming from adherence to a social system's norms, values and rules (Hirsch and Andrews, 1984; Parsons, 1960), reputation involves an assessment of a company's relative status and quality compared to other companies (Deephouse and Carter, 2005; Fombrun, 1996; Lawrence, 1998). These two terms are clearly related. For example, firms that are perceived as being legitimate may be more likely to have good reputations. For the

purposes of this paper, we rely on Deephouse and Carter's (2005) conclusion that the difference between legitimacy and reputation is that reputation requires a social comparison across companies in order to determine the relative degree of status and prestige that one company possesses. In this paper we focus on the mediating effect of reputation and not legitimacy because we are interested in how board racial and gender diversity can have reputation effects across companies.

Research has demonstrated that, due to information asymmetries, the public often uses both actions and symbols to judge a firm's reputation and quality (Ferrier, 1997; Fombrun and Shanley, 1990; Spence, 1973). These signals are pieces of information made available by the firm to influence investors, employees, and other stakeholders, which are then used by the public to judge the firm's capabilities (Ferrier, 1997; Fombrun and Shanley, 1990; Mahon, 2002). A connection between the characteristics of the board of directors and public actions has been demonstrated in previous research on pre-IPO firms. In particular, the make-up of the board of directors can function as a signal to investors about the robustness of the governance mechanisms in place and the quality of the firm (Beatty and Ritter, 1986; Fama and Jensen, 1983). For example, Certo, Covin, Daily and Dalton (2001) found that whether or not the CEO was also the founder of the company had a positive impact on IPO underpricing. Filatotchev and Bishop (2002) also found a link between certain board characteristics and IPO underpricing in a sample of IPOs in the United Kingdom. With regard to diversity, previous studies have found that a firm's commitment to diversity is an informational signal used to compare firms (Albinger and Freeman, 2000; Backhaus, Stone and Heiner, 2002). Bauckhaus et al. (2002: 298) write that diversity issues are "salient messages about life in the firm," and thus, a firm's stance on diversity issues may influence firm reputation (Turban and Greening, 1997).

Consistent with previous research which uses signaling theory to show how characteristics of the board influence organizational reputation (Certo, 2003; Certo, Daily and Dalton, 2001), we believe that women and minority directors serve as a signal to the public. In addition, many firms use corporate governance to signal the attractiveness of the firm and bolster firm reputation (Certo, 2003; Deutsch and Ross, 2003; Johnson et al., 1996; Waddock, 2000). Supporting this view, Bazerman and Schoorman (1983, p. 211) stated, "An organization's reputation can be affected by who serves on the board of directors and [with] whom the organization is seen to be linked." With stockholders able to easily attain information about the firm and who manages it, public visibility of the firm is a driving force toward signaling board diversity. In fact, Bilimoria (2000) noted that the presence of women corporate directors influenced how corporate effectiveness was viewed by the media and the public. In particular, we argue that there are three ways in which diverse directors can enhance firm reputation through signaling.

First, having a gender and racially diverse board signals that the firm is well-positioned to meet the needs of a diverse market. As firms increasingly operate within a global economy, having a diverse board of directors may signal that the board will be able to understand the business environment and advise the firm executives effectively. Gender and racially diverse boards serve as symbols to the public because firms desire to emulate their stakeholder population, labor force, and management (Fondas, 2000). As firms communicate with stakeholders, diverse boards can shape how the firm is perceived and signal the firm's dedication to creating social value (Dowling, 2006; Mahon, 2002). Consequently, many companies are now embracing diversity in leadership as a way to reflect the perspectives of diverse cultures in new markets and align themselves with key stakeholders (Rindova, 1999). For example, Carter

(2006) found that certain compositions of top management teams lead to increased ability to reflect stakeholder interests. Through the benefits of board diversity, such as more effective interaction in diverse product and labor markets (Burke, 2000), firm reputation is enhanced.

Second, diverse boards should influence firm reputation because gender and racial diversity on boards signals norm adherence and positive working conditions (Albinger and Freeman, 2000; Turban and Greening, 1997). For instance, van der Walt and Ingley (2003) noted that women on the board add value by serving as role models both inside and outside the organization, indicating the acceptance of diversity and that women are upwardly mobile (Bilimoria, 2000; Bilimoria and Wheeler, 2000; Mattis, 2000). Daily and Dalton (2003, p. 9) further suggest that "women in strategic decision-making positions communicate that an organization is committed to advancement of women at all levels." In the United States, diversity has become a culturally accepted norm, prompting many companies to signal adherence to these norms of diversity (Fondas, 2000). Organizations that work within the practices and rules of the environment will gain legitimacy, and ultimately, reputation. For example, Staw and Epstein (2000) showed that information and implementation of popular management techniques affect corporate reputation. In the same way, board diversity reflects a signal of adherence to a cultural norm, and thus boosts a firm's reputation. Van der Walt and Ingley (2003) acknowledged that many companies do not want to be seen as discriminatory, and therefore comply with diversity norms, which gives them a sense of credibility and integrity in the eyes of their constituents (Fondas, 2000; Mattis, 2000). Thus, diverse boards serve as a signal to the public of representation, norm adherence, and support for minorities and women.

Third, females and minorities on the board of directors can improve a firm's reputation through reputation-building activities such as philanthropy and community outreach (Fombrun,

2004). These charitable giving and philanthropic activities improve the firm's image and reputation, acting as a signal to stakeholders (Brammer and Millington, 2005). Researchers have noted that the growing numbers of women and racial minority directors on boards have led to increased attention to social responsibility, charitable giving, and community relationships (Stanwick and Stanwick, 1998; Wang and Coffey, 1992; Williams, 2003). For example, Stanwick and Stanwick (1998) reported that female directors have greater orientation toward charitable giving than their male counterparts. Wang and Coffey (1992) similarly found a positive relationship between women and minority directors and corporate philanthropy. Hillman, Cannella, and Harris (2002) found that African-American and female directors, in particular, are more likely to be influential in society, which results in linkages with the community. Directors influence the reputation and public image of firms through bridging firms to outside organizations (Hillman et al., 2002). The capability to communicate with diverse stakeholders and present the point of view of the organization and external groups are key reputation-building activities (Heugens, van Riel and van den Bosch, 2004; Hill and Jones, 1992). This social capital helps broaden the organization's appeal and reputation because philanthropy and community relations are key reputation-building activities (Pfeffer, 1981). Therefore, we hypothesize that:

Hypothesis 2a: Board gender diversity is positively related to firm reputation.

Hypothesis 2b: Board racial diversity is positively related to firm reputation.

MEDIATION OF THE BOARD DIVERSITY-FIRM PERFORMANCE RELATIONSHIP

Previous studies establish the positive relationship between demographic diversity on the board and firm performance (Bilimoria, 2006; Burke, 2000; Carter et al., 2003; Erhardt et al., 2003), yet few studies empirically show *how* this process occurs. For example, Carter et al.

(2003) found a positive relationship between the fraction of women on the board and market value of the firm. Other researchers have also reported significant relationships between board diversity and accounting performance of the firm (Erhardt et al., 2003). Of great importance to governance researchers, however, is an understanding of *how* diversity positively affects firm performance by investigating intervening processes (Forbes and Milliken, 1999). Because mediation reveals how and why one variable affects another, it has taken a special place in organizational sciences (Baron and Kenny, 1986).

We believe that innovation functions as a mediating variable which transmits the effect of diversity to firm performance. Our model suggests a positive relationship between board diversity and innovation in Hypotheses 1a and 1b. Increasing diversity on the board leads to more varied ideas, perspectives, and networks which, in turn, increase innovation. Furthermore, prior research shows that innovation is positively associated with firm performance (Caves and Ghemawat, 1992; Nelson and Winter, 1982). Therefore, innovation should mediate the relationship between board diversity and firm performance.

> *Hypothesis 3a:* Innovation mediates the relationship between gender diversity on the board and firm performance.

> *Hypothesis 3b:* Innovation mediates the relationship between racial diversity on the board and firm performance.

In addition, reputation is an important mediator in understanding how women and minorities on the board increase firm performance. In the above section, we argue that board diversity is positively related to firm reputation (Hypotheses 2a and 2b). Daily and Dalton (2003, p. 9) have discussed the link between board demographic diversity and firm performance by noting that "the signaling power of the initiative, including women and racial minorities on corporate boards, is positively associated with stock returns." Furthermore, previous research

demonstrates the positive effect of reputation on firm performance from various management, strategy, and human resource perspectives (Black, Carnes and Richardson, 2000; Gregory, 1998). Firm reputation is a resource that can be valuable and rare, allowing a firm to gain a strategic advantage and increase firm performance (Gregory, 1998; Hall, 1993; Knight and Pretty 1999; Roberts and Dowling, 2002). Therefore, we hypothesize that firm reputation mediates the relationship between board diversity and firm performance.

> *Hypothesis 3c:* Firm reputation mediates the relationship between the gender diversity on the board and firm performance.

> *Hypothesis 3d:* Firm reputation mediates the relationship between the racial diversity on the board and firm performance.

METHODOLOGY

Sample

Using demographic data on *Fortune 500* firms, this research study explores the empirical linkages of board diversity, reputation, innovation, and performance. We chose *Fortune 500* firms because these firms represent leaders in their industry and several external reports listing the race of board members have been conducted on this sample, thereby providing a way to validate our data. In order to be included in the sample, there were several requirements: firms had to be continuously listed in COMPUSTAT without being acquired by another company, be publically traded and active between 2002 and 2005, and within the *Fortune 500* for 2003. These criteria resulted in 432 firms which are used to investigate innovation as a mediator between board diversity and firm performance. Then, these firms were matched with those in the 2004 *Fortune* Reputation Survey for 2003, which ranks the top 10 firms in each industry from *Fortune 1000* firms. This matching process resulted in a sample of 326 firms, and this sample is used to investigate reputation as a mediator between board diversity and firm

performance. There were no significant differences between the *Fortune 500* firms that were in our sample and those that were not in our sample in terms of firm performance or industry. Financial performance and innovation data were gathered through COMPUSTAT.

Independent Variables

***Board Diversity*.** In our study, we measure board diversity using two measures. First, we define diversity as the degree of heterogeneity among board members with respect to race or gender, using Blau's index (1977). As a second measure, we use the proportion of women and racial minorities within each board of directors. Data on gender and race were gathered from the Investor Responsibility Research Center (IRRC) for 2002. In 2002, there were 4387 Caucasian (89.3%), 368 African American (7.5%), 113 Hispanic (2.3%), and 44 Asian (0.9%) directors in our sample of 432 firms. Six hundred forty-three (13.1%) directors were women. While 12% of firms in our sample had no women directors, 44.0% had 1 woman director, 32.2% had 2 women directors, and 11.8% had 3 or more women directors. To validate the IRRC data and fill in missing values on race, we used several external data sources[1] from organizations that survey the race of directors on *Fortune 500* boards.

Blau's index has been suggested as an optimal measure of diversity to capture variations within a group of people (Harrison and Klein, 2007). It is also an ideal measure of diversity, because it meets the four criteria that have been laid out for a good measure of diversity: it has a zero point to represent complete homogeneity, larger numbers indicate greater diversity, the index does not assume negative values, and the index is not unbounded (Harrison and Sin, 2006). In addition, Blau's index has been frequently used and noted as a suitable measure of diversity for categorical variables, where the measure is not skewed in a proportion of any one category (i.e., gender or race) (Bantel and Jackson, 1989; Harrison and Sin, 2006).

Therefore, *board gender diversity* and *board racial diversity* are measured using Blau's (1977) index of heterogeneity ($1-\Sigma\rho_i^2$), where ρ_i is the proportion of group members in each of the i number of categories. IRRC categorizes the race of board members into 4 categories: Asian, Black, Hispanic, or White. All four categories were used to calculate Blau's index. The range of the index is dependent upon the number of categories, where the number ranges from 0 to $(i-1)/i$. Therefore, board racial diversity can range from 0 when only one race is represented on the board to 0.75 when there are equal numbers of all four races represented on the board. For board gender diversity, Blau's index can range from 0 when there is only one gender on the board to 0.50 when there are equal numbers of men and women on the board.

In addition, *board gender diversity* and *board racial diversity* are measured using the proportion of racial minorities or women to total directors. In the proportional measure of board racial diversity, all categories except Caucasian were designated as racial minorities to calculate racial diversity.

Innovation. Because we investigate the effects of board diversity on firm innovation, research and development (R&D) expenses are used as a proxy for innovation. We believe this reflects decisions made by directors to allocate resources to innovation, and previous literature has established that a firm's R&D intensity is an appropriate proxy for the firm's innovation (Balkin, Markman and Gomez-Mejia, 2000; Hitt, Hoskisson and Kim, 1997; Hoskisson, Hitt, Johnson and Grossman, 2002; O'Brien, 2003). Consistent with this research, innovation is measured by R&D intensity, and we operationalize this as a firm's reported research and development (R&D) expenditures divided by sales.

However, a firm's innovativeness "will manifest itself not in the absolute magnitude of R&D intensity, but rather in the firm's R&D intensity relative to industry rivals" (O'Brien, 2003,

p. 422). Thus, adjusting for the effect of industry is also important (Heeley, King and Covin, 2006). Therefore, we subtract the industry average R&D expenditures from firm R&D expenditures, using data in COMPUSTAT, recorded in millions of dollars in 2003. Then, this value is divided by net sales in millions of dollars in 2003 to control for the effects of firm size in R&D expenditures that influence its outcomes (Balkin et al., 2000; Hitt et al., 1997) and to avoid "problems of an artificial relationship with firm size" (Hitt et al., 1997, p. 778).

When R&D was missing, the values were first searched for in Compact D. Five missing values were gathered. Because firms are required to report R&D expenses, missing values indicate negligible expenditures. Thus, following previous research, missing R&D values were set equal to zero (Henderson, Miller and Hambrick, 2006; O'Brien, 2003; Opler, Pinkowitz, Stulz and Williamson, 1999). This method avoids biasing results by excluding firms with small R&D expenditures (Himmelberg, Hubbard and Palia, 1999; O'Brien, 2003).

***Firm Reputation*.** Firm reputation scores were obtained from the 2004 *Fortune* Corporate Reputation Survey, which covers firms for the year 2003. *Fortune*'s most admired companies survey is one of the best known indices of reputation and has been used extensively in reputation research (Black et al., 2000; Fombrun, 1996). Executives rate companies in their own industries on a scale from poor (0) to excellent (10) based on eight attributes of performance: quality of management, quality of products, perceptions of innovativeness, long-term investment value, financial soundness, ability to attract, develop, and keep people, responsibility to the community and environment, and wise use of corporate resources.

Research has shown that prior financial performance explains approximately half of the variance in *Fortune*'s reputation index because reputation is confounded by raters' forecasts of financial performance, resulting in an inability to truly distinguish reputation from financial

performance (Brown and Perry, 1994; Fombrun and Shanley, 1990; McGuire, Schneeweis and Branch, 1990; Roberts and Dowling, 2002). This "financial halo effect" presents a bias in reputation studies, creating a "blurring of distinctions among dimensions or attributes due to a strong overall impression" (Brown and Perry, 1994, p. 1349). Therefore, prior financial performance may be used to partial out its effects on reputation by regressing performance measures on reputation and using the residual value as halo-removed reputation. In other words, the residual is that which is unexplained by prior financial performance (Brown and Perry, 1994; Roberts and Dowling, 2002). Therefore, we follow the Roberts and Dowling (2002) method for removing the financial halo by regressing reputation in 2003 on firm performance (return on sales and return on investment) in 1999, 2000, 2001, and 2002. The predicted value in the equation is the financial halo or financial reputation, and the residual value is the halo-removed or residual reputation, which is our measure of firm reputation (Brown and Perry, 1994; Roberts and Dowling, 2002).

Dependent Variable

***Firm Performance*.** Firm performance was operationalized as accounting-based performance using two measures from COMPUSTAT: return on investment (ROI, measured as net income divided by invested capital) and return on sales (ROS, measured as net income divided by net sales) for 2005. ROI was chosen because it has been suggested to be the most comprehensive measure of firm performance (Woo and Willard, 1983), and it is frequently used in governance research (Boyd, 1995; Daily, Certo and Dalton, 2000; Rechner and Dalton, 1991) and studies on board diversity (Ernhardt et al., 2003; Fryxell and Lerner, 1989; Shrader et al., 1997). ROS is used as a measure of competitive advantage that avoids biases in accounting method and as a perceptible measure of firm performance which directors and managers are likely to drive

towards in large firms (Audia, Locke and Smith, 2000; Markides and Williamson, 1994; Shrader et al., 1997). Following Staw and Epstein (2000), we then standardized both the ROI and ROS measures, creating an average overall firm performance measure. Firm performance is measured in 2005, lagged 2 years to allow time for mediating effects of reputation and innovation to occur. This lag is within the range of time whereby returns from R&D may be translated into gains (Pakes and Schankerman, 1984).

Control Variables

We controlled for the following variables as suggested by an extensive literature review: firm age, liquidity, firm size, and product diversification, international diversification, and industry. In investigating the relationship between board diversity and firm reputation and the mediating effect of reputation in the relationship between board diversity and firm performance (Hypotheses 2a, 2b, 3c, and 3d), firm age (number of years since incorporation) and size (the log of total employees) in 2002 are used as controls because firms with more experience and resources in the market have better reputations (Brown and Perry, 1994; Deephouse and Carter, 2005). Industry (measured as a 1 digit SIC code following Carter et al. (2003)) is also controlled for because previous studies suggest reputation should be assessed relative to industry (Brammer and Millington, 2005; Fombrun and Shanley, 1990). Previous studies have shown that product diversification explains some of the variance in reputation (Fombrun and Shanley, 1990). Therefore an entropy measure of product diversification is controlled for, using business segment data in 2002 from COMPUSTAT and measured as

$$\text{Product Diversification} = \sum_{j=1}^{N} S_j \ln(1/S_j),$$

where S_j is the proportion of total sales in segment j and N is the total number of segments in which the firm sells. In addition, programs and initiatives that influence reputation may be sensitive to the existence of liquidity or slack resources (Cyert and March, 1963), so liquidity is used as a control (a ratio of current assets to current liabilities in 2002).

Previous studies have found that product diversification is also related to innovation (Baysinger et al., 1991; Hitt et al., 1997), and therefore, it was used as a control in testing the mediating effect of innovation in the board diversity-firm performance relationship (Hypotheses 1a, 1b, 3a, and 3b). Other variables found to have an effect on innovation are firm liquidity (Baysinger and Hoskisson, 1989), industry, and international diversification, measured as the percentage of foreign sales of total sales in 2002 from Compact D. Therefore, we controlled for these variables. Finally, following previous literature (Hill and Snell, 1988; Hitt et al., 1997; Pearce and Zahra, 1992), firm size in 2002 and product diversification in 2002 were used as controls in testing the relationship between board diversity and firm performance.

ANALYSIS

The method used for analysis was ordinary least squares (OLS) regression. To test Hypotheses 1a and 1b, which predict that diversity on the board is positively related to innovation, we regressed innovation on the control variables and then board diversity in sequential steps. To test Hypotheses 2a and 2b, that board diversity is positively related to reputation, we regressed reputation on the control variables, and then board diversity in sequential steps. To test Hypotheses 3a, 3b, 3c, and 3d, which predicted the mediating effects, we adhered to the procedure outlined by Baron and Kenny (1986) and Judd and Kenny (1981).

RESULTS

INSERT TABLE I ABOUT HERE

Table I shows the means, standard deviations and correlations among the study variables. The average Blau and proportional racial diversity scores in our sample were 0.17 and 0.10 respectively where the highest possible Blau racial diversity score was 0.75 if the board had equal numbers of each race on the board. The average Blau and proportional gender diversity scores were 0.21 and 0.13 respectively where the highest possible Blau score was 0.50. On average, boards appear to be more gender diverse than racially diverse. Table I also revealed several significant correlations between variables. There is a significant and positive correlation between gender and racial diversity and firm size, which suggests that larger firms more often appoint women and minorities to the board. Reputation is significantly and positively correlated with both board racial diversity measures ($p < 0.01$) but neither board gender diversity measure ($p > 0.10$)[2]. Innovation is positively and significantly correlated with Blau's board racial diversity measure ($p < 0.05$) and marginally significantly correlated with both gender diversity measures ($p < 0.10$). Both racial diversity measures are positively and significantly correlated to firm performance ($p < 0.05$). There were no correlations between any variables in the same model with a magnitude greater than 0.40, which suggests that multicollinearity was not a problem. Also, multicollinearity diagnostics did not reveal any problems in the regressions. Further analysis will investigate the support for each hypothesis.

INSERT TABLE II ABOUT HERE

Hypotheses 1a and 1b predict that board gender and racial diversity will be positively related to innovation. Table II presents the results of the multiple regression. For board gender

diversity (Blau and proportional), the unstandardized coefficients in Models 2A and 2B are positive and significant (0.040, $p < 0.05$; 0.049, $p < 0.05$ respectively), supporting Hypothesis 1a. For board racial diversity (Blau and proportional), the unstandardized coefficients in Models 3A and 3B are positive and significant (0.035, $p < 0.05$; 0.052, $p < 0.05$ respectively), supporting Hypothesis 1b.

INSERT TABLE III ABOUT HERE

Table III represents the regression models for testing Hypotheses 2a and 2b, which argue that board diversity is positively related to reputation. Models 5A and 5B in Table III show that the unstandardized coefficients for both the Blau and proportional measures of board gender diversity are positive, but not significant (0.116, $p > 0.10$; 0.391, $p > 0.10$ respectively). Therefore, Hypothesis 2a is not supported. In Model 6A and 6B, board racial diversity (Blau and proportional) measures have a significant and positive relationship with firm reputation (0.864, $p < 0.05$; 1.421, $p < 0.05$ respectively). Therefore, these results support Hypothesis 2b.

Hypotheses 3a, 3b, 3c, and 3d posit mediation of the board diversity-firm performance relationship. According to Baron and Kenny (1986), testing for mediation consists of four critical steps. First, the independent variable must influence the dependent variable (Step 1). Second, the independent variable must influence the presumed mediator (Step 2). Third, the mediator must influence the dependent variable while controlling for the independent variable (Step 3). Finally, a previously significant relationship between the independent and dependent variables must be reduced in the presence of the mediator (Step 4).

INSERT TABLE IV ABOUT HERE

Hypothesis 3a posits that innovation mediates the relationship between board gender diversity and firm performance. Models 8A and 8B in Table IV show that there is no significant relationship between board gender diversity and firm performance using either measure of diversity (Blau's index or proportions). Step 1 of the Baron and Kenny (1986) approach, which requires a significant relationship between the independent variable and the dependent variable, was not supported. Thus, Hypothesis 3a was not supported.

INSERT TABLE V ABOUT HERE

In Hypothesis 3b, innovation is posited to mediate the relationship between board racial diversity and firm performance. Model 9A and 9B of Table IV show that both Blau and proportional measures of board racial diversity are positively and significantly related to firm performance (0.682, $p < 0.01$; 1.000, $p < 0.05$ respectively). The significance of this effect fulfills Step 1 of Baron and Kenny's approach. The relationship between the independent variable, board racial diversity, and the mediator, innovation, was supported in Hypothesis 1b, satisfying Step 2 of Baron and Kenny's (1986) procedure. In Step 3, the effect of the predictor is controlled to evaluate the relationship between the mediator and outcome variable. Models 10A and 10B show that when the Blau and proportional measures of board racial diversity are in the model, the mediator, innovation, is positively and significantly related to firm performance (1.839, $p < 0.05$; 1.869, $p < 0.05$ respectively). In Step 4, the predictor-outcome relationship should be reduced when the mediator is controlled for (Baron and Kenny, 1986). Models 9A-10B show that when innovation is added to the model, the effect of board racial diversity on firm performance decreases which means that innovation partially mediates that relationship (Baron and Kenny, 1986). Therefore, Hypothesis 3b was supported.

Hypothesis 3c held that reputation mediates the positive relationship between board gender diversity and firm performance. A significant positive relationship between board gender diversity and firm reputation was not found (Hypothesis 2a). Therefore, since the second step of the Baron and Kenny (1986) approach was not met, Hypothesis 3c was not supported.

Hypothesis 3d suggested that reputation mediates the relationship between board racial diversity and firm performance. Again, a positive and significant relationship is found between board racial diversity (Blau and proportional measures) and firm performance in Model 12A and 12B of Table V (0.778, $p < 0.05$; 1.124, $p < 0.05$ respectively). The positive relationship between the independent variable (board racial diversity) and the mediator (reputation) was also supported in Hypothesis 2b. Next, firm performance was regressed on the control variables, board racial diversity, and then reputation. Models 13A and 13B of Table V show that reputation is a significant predictor of performance when Blau and proportional measures of board racial diversity are controlled (0.133, $p < 0.01$; 0.134, $p < 0.01$ respectively). In addition, Models 12A-13B show that the inclusion of the mediator in the model causes the coefficient for board racial diversity to decrease which indicates that the relationship between board racial diversity and firm performance is partially mediated by firm reputation (Baron and Kenny, 1986). Therefore, these results support Hypothesis 3d.

It should be noted that the amount of variance explained of firm performance and reputation in our study is conservative. However, in our analysis previous performance was removed from reputation. Previous performance traditionally accounts for 42% of the variance explained in reputation, with a number of studies reporting R^2 around 35-55% (Brown and Perry, 1994). Thus, taking this into account, we believe the variance explained in our study is similar to other studies.

Finally, as a robustness check, reverse causality was investigated to see whether firm performance could be mediating the relationship between board diversity and innovation. New data were collected on the variables where reputation and innovation were the dependent variables in year 2004, and performance was the mediator in year 2003. No mediating relationship was found. In addition, management literature has established innovation and reputation as predictors of firm performance, rather than the reverse relationship; thus, we believe the possibility of reverse causality to be minimal.

DISCUSSION

We analyzed a sample of *Fortune 500* firms to examine the mediating roles of innovation and reputation in the relationship between board gender and racial diversity and firm performance. The theoretical basis for our hypotheses was drawn from the behavioral theory of the firm and signaling theory. Results support the value in diversity hypothesis by demonstrating that both board gender and racial diversity are positively related to innovation (in the form of R&D expenditures). Furthermore, we found support for innovation as a mediator between board racial diversity and firm performance. These findings suggest that firms may benefit from the diverse human and social capital on diverse boards which support an innovation strategy. This provides support for the behavioral theory of the firm because racial and gender diversity (proxies for richness of information in the decision-making process) are both related to innovation (Bilimoria, 2000; Hillman et al., 2002; Milliken and Vollrath, 1991).

In addition, we found a positive relationship between board racial diversity and firm reputation. This finding is consistent with signaling theory which predicts that diverse board members will increase firm reputation by signaling that the board members are well equipped to understand the diverse environment in which the firm operates (Bilimoria, 2000; Fombrun and

Shanley, 1990; Fondas, 2000). In addition, we found that reputation partially mediates the relationship between board racial diversity and firm performance. However, the hypotheses pertaining to board gender diversity received mixed support. While gender diversity was related to innovation, it was not related to reputation. We offer three explanations for this.

First, females on boards may not hold positions of power in leadership or management as often as males, and hence, may not be as visible a signal as minorities. In order for a signal to be effective, it needs to be visible to the public because visibility influences the amount of information provided to the public (Brammer and Millington, 2005; Ferrier, 1997; Fombrun and Shanley, 1990). However, in some post hoc analyses of our data, we noticed that females are less likely than racial minorities to be the chairperson of a major committee or have management experience. In particular, descriptive statistics of our data show that the average number of minority chairpersons on boards was 0.41 per board while the average number of female chairpersons was 0.30. Even though the females on the boards tended to have slightly longer tenure than the minorities, they were less often the chairperson. This is consistent with other research, which shows that female directors tend to hold less powerful positions than male directors (Dalton et al., 2006; Kesner, 1988; Peterson and Philpot, 2007; Zelechowski and Bilimoria, 2001, 2004). If females are on the board of directors but do not serve as a chair of a committee, they may be seen as having limited influence, thus sending a weaker signal. In addition, in some post hoc analyses we found that while racial diversity was positively correlated with executive-level management experience (0.213, $p < 0.001$), measured as the total number of directors holding executive positions in a firm, gender diversity was not positively correlated with executive-level management experience (-0.002, $p > 0.10$). The public often looks for signals of director skills, and firms often publicize the past and present positions of their

directors in annual reports and proxy statements to send signals of the quality of their directors. Thus, if gender diverse boards have less management experience than racially diverse boards, this signal may be weakened. Therefore, one reason that female directors may not affect reputation (while minorities do) is because they are not as likely to occupy management and leadership roles that increase their visibility to the public.

Another explanation for why gender diversity was not related to reputation is because there is some evidence that female directors are less likely to be associated with causes that enhance firm reputation. Although philanthropy is generally associated with firm reputation (Brammer and Millington, 2005; Williams and Barrett, 2000), there is some evidence that not all forms of philanthropy are equally effective in improving firm reputation. We expected female directors to be related to philanthropy based on the work of Coffey and Wang (1998) which found a positive relationship between the percentage of women on the board and charitable giving. However, if female board members are involved in forms of philanthropy that are not strongly related to firm reputation, this may be one reason why board gender diversity was not related to reputation in our sample. Williams (2003) found that while female directors are likely to engage in philanthropic giving, they tend to give to causes that are not highly correlated with firm reputation. In Williams' study, women were more likely to give to the community or the arts, but neither of these causes had a significant impact on reputation. Women were also less likely to give to education, which was the philanthropic activity most strongly related to reputation. Therefore, it is possible that while females are community influentials (Hillman et al., 2002) and may be associated with philanthropy (Williams, 2003; Wang and Coffey, 1992), they tend to sponsor causes that are not related to firm reputation.

A final explanation for the lack of relationship between gender diversity and reputation may be due to the perceived benefit of racial diversity on the board in a global economy which may not be ascribed to gender diversity. We believe that because of the importance of globalization in today's business climate, analysts and executives may place a higher value on racial/cultural diversity than gender diversity. As companies start doing business in other countries/cultures, it is imperative to understand the local environments to do well. Information gained from minority directors familiar with other cultures may be seen as valuable (and hence provide that firm with more reputation) while information gained from female directors may be seen as less valuable for this business trend. This is consistent with Richard's (2000) work which asserts that racial diversity may be a way to increase the firm's understanding of a diverse cultural base. This is also consistent with Ibarra's (1995) study which found that the perceived utility of networks is stronger for minorities than women. For these reasons, board gender diversity may not have a significant and positive relationship with reputation.

Contributions and Future Research

Theoretically, this study contributes to our understanding of the relationship between board demographic diversity and firm performance in several ways. The study builds on the behavioral theory of the firm (Cyert and March, 1963) and signaling theory to assert that gender and racially diverse boards serve symbolic and instrumental roles for the firm by employing their human and social capital. This study provides empirical support for the positive relationship between both board racial and gender diversity and innovation. This study also reveals and clarifies the innovation and reputation-building effects of board racial diversity, extending previous work which shows the positive effect of board diversity on firm performance.

This study has theoretical implications for the use of signaling theory and the behavioral theory of the firm in corporate governance literature. Signals may become less effective when they do not come from powerful individuals who chair committees, individuals who sponsor causes related to reputation, or individuals who represent valued global diversity[3]. In addition, this study may imply some contingencies to the behavioral theory of the firm, suggesting that having diverse viewpoints represented on the board of directors does not necessarily ensure better performance. The behavioral theory of the firm maintains that the more extensive the search, or information-gathering process, is for a given decision the better the decision the firm will make. The theory also implies that having access to diverse information will lead to the inclusion of that information in the decision-making process and that this will lead to better performance. This theory is mostly supported based on our data. For example, both board gender and racial diversity were positively related to innovation which suggests that diverse opinions and information can translate into R&D expenditures.

While the focus of this study was to examine mediators, we also must note that no direct relationship was found between board gender diversity and firm performance, using Blau's index or the proportion of women on the board as the measure of gender diversity. In some post hoc tests, we found a positive and significant correlation between the number of women on the board and firm performance. However, once we ran a regression and took into account the many alternate explanations known to influence firm performance (product diversification, industry, firm size, firm age, and liquidity), the relationship between gender diversity and firm performance was no longer significant. Therefore, the main effect between gender diversity and firm performance was positive but not statistically significant in this sample. Previous literature on the relationship between gender diversity and firm performance has been mixed with some

finding a positive, some a negative, and some no relationship at all (Bilimoria, 2006; Carter et al.,2003; Dimovski & Brooks, 2006; Dwyer et al., 2003; Shrader et al., 1997). A recent review on the methodology used to study diversity pointed out that some of the contradictions that appear across studies in the diversity literature may be a result of the operationalization of diversity (Harrison and Klein, 2007). However, in this study, we did find that support for all hypotheses remained the same when using Blau's index of heterogeneity or proportions for gender and racial diversity.

In our case, we believe the inconsistent findings are possibly due to missing moderator variables. In other words, the lack of a main effect between gender diversity and firm performance does not necessarily mean that gender diversity does not help firms. There may be something about the firm's environment that is not set up to allow the firm to achieve the benefits of a gender diverse board. This reasoning is consistent with recent conclusions drawn by Dwyer et al. (2003, p. 1009) who state that "an appropriately configured and supportive organizational environment may need to be in place before the beneficial aspects of gender diversity can by fully realized."

For example, the inconsistency in findings may be attributed to a missing moderator which represents how much influence the female board members actually have on the board. Having gender diverse groups represented on the board may not lead directly to firm performance if the gender diverse individuals on the board are seen as tokens and they do not have the power for their ideas to be adopted. It is well established in research on group behavior that in teams with mixed-status individuals, the higher status individuals speak more often and have more control and influence over the group processes and discussions (Berger, Cohen and Zelditch, 1972; Cleveland, Stockdale and Murphy, 2000; Holtgraves, 1986). This may be

particularly problematic in situations where women have limited authority and power in the group (as seems to be the case in our sample since women were less likely to be chairpersons) since strategic actions are initiated by top leaders through coalescing of powerful leaders (Clark and Soulsby, 2007). Thus, we believe it is possible that the relationship between gender diversity and firm performance will not necessarily be positive and significant under conditions where status differentials between decision-makers either prevent women from being heard or keep their perspectives from being influential. In addition, Combs, Ketchen , Perryman and Donahue (2007) point out that many of the equivocal results between board characteristics and firm performance are due to the missing moderator of CEO power; therefore, this aspect of board-CEO power should be investigated. This would be a boundary condition to the behavioral theory of the firm, and future research should investigate what mechanisms can curtail the relationship between board gender diversity and firm performance.

Empirically, this study makes several contributions to research on boards of directors. First, through elucidating the benefits of racial and gender diversity on the board, this study is significant to governance literature. It answers calls for research on the effects of increases in women and minority directors (Bilimoria and Wheeler, 2000; Burke, 2000). Research on gender and racial diversity in corporate elite groups has been conducted less often than diversity research among lower ranking employees, leaving many unanswered questions about diversity at the top of organizations. This study contributes to our understanding of these unanswered questions.

Second, to our knowledge, this study is the first to examine mediators of the board diversity-firm performance relationship. Investigation of mediators in the board demography-firm performance relationship is important to the progress of the field, and thus this work takes a

step towards clarifying anecdotal evidence about the benefits of board racial and gender diversity. We propose innovation and reputation as mediators of the board demographic diversity-firm performance relationship. Board gender and racial diversity influence strategic human and social capital on the board resulting in more diverse ideas which influence innovation. In addition, racial diversity on the board signals value and norm adherence, as well as philanthropy, which increase firm reputation. Thus, by investigating the underlying mechanisms between board demographic diversity and firm performance, this study takes an important step towards understanding the outcomes of board demographic diversity.

In addition to the theoretical and empirical contributions of this study, it also brings new implications for practice. Many firms will be increasingly faced with the impact of diversity in the boardroom as they look for the right directors. The selection process often includes consideration of diversity in functional background and work experience. This study shows that there may also be strategic business reasons to consider both racial and gender demographic diversity in board selection decisions. Board demography affects innovation and firm reputation, both of which are related to firm performance. Firms can better use directors' skills and resources when they recognize the benefits of diversity and respect differences in information, relationships, and perspectives that emerge from gender and racially diverse boards.

This study also has implications for future research. Although innovation and reputation are measured, future research should investigate other mediating processes, such as board members' ability to provide strategic advice or financial resources to the firm. Future research may also find proxies for social capital to be used as mediators in the board diversity-firm performance relationship.

In addition, although the study recognizes and measures the benefits of board racial and gender diversity on firm performance, it does not measure how the effects of diversity may vary in different situations. For example, research has shown that racial minority and female directors have more influence if they have network ties to majority directors through common membership on other boards (Westphal and Milton, 2000). We must also acknowledge that research on diverse team performance has been mixed. While some studies find a positive relationship between team diversity and performance, other studies show negative effects due to conflict, poor team integration, or a lack of cohesion (Amason, 1996; Miller et al., 1998). It is well understood in teams research that diversity in teams can lead to process losses (Steiner, 1972) stemming from conflict and communication problems. Indeed, several studies have linked both racial and gender team diversity to conflict as well as problems with social integration and communication (Jackson, Joshi and Erhardt, 2003; Williams and O'Reilly, 1998). Although our findings show that the effect of board member racial diversity on firm performance is positive, future work should investigate whether board racial and gender diversity affect decision speed, decision quality, and consensus on boards to gain a deeper understanding of these underlying processes.

Furthermore, because gender and race are proxies for human and social capital, future research may want to investigate how they influence nomination and selection to boards. Future research should investigate whether board members value diversity and whether these perceptions of value impact selection processes. Burke (1997) found that women directors believe that the reason there are few women on boards is because boards generally felt that women were either not qualified or they would only advance a women's agenda. Subsequent research has found that ingratiatory behaviors of minority directors influence future

appointments (Westphal and Stern, 2006, 2007) and that network ties are important for minority appointments (Westphal and Milton, 2000). In addition, female and minority directors tend to differ from majority directors in terms of their functional backgrounds. Women and minority directors are more likely to have advanced degrees and come from non-management backgrounds compared to other directors (Hillman et al., 2002). Therefore, future research should investigate how race, gender, human capital, and social capital interact to affect nomination and selection to boards.

Future research should also consider how committee membership influences the dynamics of diverse boards. For example, membership in more influential committees may afford some board members more voice into decision-making processes than others. Committee membership could certainly enhance or diminish the effect that racial minority and female directors have on board decision-making. However, several researchers have found that women directors are less likely to serve on powerful committees than males (Peterson and Philpot, 2007; Zelechowski and Bilimoria, 2003). In addition, Zelechowski and Bilimoria (2003) found that there were differences among firms in the board experiences of women inside directors. While some felt supported and accepted, others felt excluded. Future research should probe how these committee memberships and experiences moderate participation in strategic decision making.

Our study has found results in the board diversity – firm performance relationship. However, it has a number of limitations as well. First, because of the availability of board data on ethnicity and the necessity to fill in missing values within our data source, only *Fortune 500* firms were explored, limiting the generalizability of the findings. Because board diversity is correlated with firm size, there may be different relationships between the constructs within other firms. Finally, while R&D intensity is commonly used as a proxy for innovation, especially in

cross-industry studies, it may not capture innovation outcomes. Therefore, future single industry studies may use more fine-grained measures of innovation, such as patents or product announcements. In addition, primary sources of data may reveal more about board process, which explain how diverse boards make decisions. However, despite these limitations, this study takes an important step toward empirically investigating mediators of the diversity-performance relationship.

Consistent with calls to shed light on black box processes (Lawrence, 1997), this study has investigated innovation (R&D intensity) and reputation as mediators between board racial and gender diversity and firm performance. This study enriches our understanding of how board racial and gender diversity are related to firm performance, innovation and reputation. Our findings are generally consistent with past research suggesting that board racial and gender diversity should be positively related to innovation, reputation and firm performance (Burke, 2000; Erhardt et al., 2003; Milliken and Martins, 1996). The results suggest that further research investigating the intervening effects of demographically diverse directors on firm performance should be fruitful.

NOTES

[1] These reports include: the Committee of 100's Asian Pacific American Corporate Board Report Card, the Executive Leadership Council's Census of African Americans on Boards of Directors, and the Hispanic Business Boardroom Elite Directory.

[2] While our measure of gender diversity is not significantly correlated with firm performance, we do find a significant and positive correlation between the number of women on the board and firm performance. This supports previous studies, which find a significant Pearson r correlation between the number of women on the board and firm performance (e.g., Bilimoria, 2006; Burke, 2000).

[3] We would like to thank an anonymous reviewer for pointing this out to us and stating it so clearly.

REFERENCES

Albinger, H.S. and Freeman, S. J. (2000). 'Corporate social performance and attractiveness as an employer to different job seeking populations'. *Journal of Business Ethics,* **28**, 243-253.

Alliance for Board Diversity (2005). 'Launch of alliance for board diversity calls for fair representation on corporate boards'. www.catalyst.org/files/fact/ABD_factsheet.pdf.

Amason, A. C. (1996). 'Distinguishing the effects of functional and dysfunctional conflict on strategic decision making'. *Academy of Management Journal,* **39**, 123-148.

Audia, P. G., Locke, E. A. and Smith, K. G. (2000). 'The paradox of success: An archival and a laboratory study of strategic persistence following radical environmental change'. *Academy of Management Journal*, **43**, 837-853.

Backhaus, K. B., Stone, B. A. and Heiner, K. (2002). 'Exploring the relationship between corporate social performance and employer attractiveness'. *Business & Society*, **41**, 292-318.

Balkin, D. B., Markman, G. D. and Gomez-Mejía, L. R. (2000). 'Is CEO pay in high-technology firms related to innovation?' *Academy of Management Journal*, **43**, 1118-1129.

Bantel, K. A. and Jackson, S. E. (1989). 'Top management and innovations in banking: Does the composition of the top team make a difference?' *Strategic Management Journal,* **10**, 107-124.

Baron, R. M. and Kenny, D. A. (1986). 'The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations'. *Journal of Personality and Social Psychology,* **51**, 1173-1182.

Baysinger, B. and Hoskisson, R. E. (1989). 'Diversification strategy and R&D intensity in multiproduct firms'. *Academy of Management Journal,* **32**, 310-332.

Baysinger, B. and Hoskisson, R. E. (1990). 'The composition of boards of directors and strategic control: Effects on corporate strategy'. *Academy of Management Review,* **15**, 72-87.

Baysinger, B. D., Kosnik, R. D. and Turk, T. A. (1991). 'Effects of board and ownership structure on corporate R&D strategy'. *Academy of Management Journal,* **34**, 205-214.

Bazerman, M. H. and Schoorman, F. D. (1983). 'A limited rationality model of interlocking directorates'. *Academy of Management Review,* **8**, 206-217.

Beatty, R. P. and Ritter, J. R. (1986). 'Investment banking, reputation and the underpricing of initial public offerings'. *Journal of Financial Economics,* **15**, 213-232.

Beekes, W., Pope, P. and Young, S. (2004). 'The link between earnings timeliness, earnings conservatism and board composition: Evidence from the UK'. *Corporate Governance,* **12**, 47 - 59.

Berger, J., Cohen, B. R., and Zelditch, M. (1972). 'Status characteristics and social interaction'. *American Sociological Review,* **37**, 241-255.

Bilimoria, D. (2000). 'Building the business case for women corporate directors'. In Burke, R. J. and Mattis, M. C. (Eds.), *Women on Corporate Boards of Directors: International Challenges and Opportunities.* Dordrecht: Kluwer Academic, 25-40.

Bilimoria, D. (2006). 'The relationship between women corporate directors and women corporate officers'. *Journal of Managerial Issues,* **18**, 47-61.

Bilimoria, D. and Wheeler, J. V. (2000). 'Women corporate directors: Current research and future directions'. In Burke, R. J. and Mattis, M. C. (Eds.), *Women in Management: Current Research Issues*, London: Sage, 138-163.

Black, E., Carnes, T. and Richardson, V. (2000). 'The market value of corporate reputation'. *Corporate Reputation Review*, **1,** 31-42.

Blau, P. M. (1977). *Inequality and Heterogeneity*. Glencoe, IL: Free Press.

Boyd, B. K. (1995). 'CEO duality and firm performance: A contingency model'. *Strategic Management Journal*, **16**, 301-312.

Brammer, S. and Millington, A. (2005). 'Corporate reputation and philanthropy: An empirical analysis'. *Journal of Business Ethics*, **61,** 29-44.

Brancato, C. K. (1999). 'Study suggests that more diversified boards can strengthen corporations'. *Corporate Governance Advisor*, **7**, 14-17.

Brown, B. and Perry, S. (1994). 'Removing the financial performance halo from Fortune's `most admired' companies'. *Academy of Management Journal*, **37**, 1347-1359.

Bureau of Labor Statistics, (2005). *Economic surveys. Data and reports*.

Burke, R. J. (1997). 'Women on corporate boards of directors: A needed resource'. *Journal of Business Ethics*, **16**, 909-915.

Burke, R. J. (2000). 'Women on Canadian corporate boards of directors: Still a long way to go'. In Burke, R. J. and Mattis, M. C. (Eds.), *Women on Corporate Boards of Directors: International Challenges and Opportunities.* Dordrecht: Kluwer Academic Publishers.

Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.

Burt, R. S. (1997). 'The contingent value of social capital'. *Administrative Science Quarterly*, **42**, 339-365.

Carter, S. M. (2006). 'The interaction of top management group, stakeholder, and situational factors on certain corporate reputation management activities'. *Journal of Management Studies*, **43**, 1145-1176.

Carter, D. A., Simkins, B. J. and Simpson, W. G. (2003). 'Corporate governance, board diversity, and firm value'. *The Financial Review,* **38**, 33-53.

Catalyst. (2006a). '2005 Catalyst census of women board directors of the Fortune 500.'

Catalyst. (2006b). '2006 Catalyst member benchmarking report'. New York.

Caves, B. E. and Ghemawat, P. (1992). 'Identifying mobility barriers'. *Strategic Management Journal,* **13**, 1-12.

Certo, S. T. (2003). 'Influencing initial public offering investors with prestige: Signaling with board structures'. *Academy of Management Review,* **28**, 432-446.

Certo, S. T., Covin, J. G., Daily, C. M., and Dalton, D. R. (2001). 'Wealth and the effects of founder management among IPO-stage new ventures'. *Strategic Management Journal,* **22**, 641-658.

Certo, S. T., Daily, C. M. and Dalton, D. R. (2001). 'Signaling firm value through board structure: An investigation of initial public offerings'. *Entrepreneurship: Theory & Practice,* **26**, 33-50.

Chatterjee, S., Harrison, J. S. and Bergh, D. D. (2003). 'Failed takeover attempts, corporate governance and refocusing'. *Strategic Management Journal,* **24**, 87-96.

Chen, G., Liu, C. and Tjosvold, D. (2005). 'Conflict management for effective top management teams and innovation in China'. *Journal of Management Studies,* **42**, 277-300.

Clark, E., and Soulsby, A. (2007). 'Understanding top management and organizational change through demographic and processual analysis'. *Journal of Management Studies*, 44: 932 – 954.

Cleveland, J. N., Stockdale, M., and Murphy, K. R. (2000). *Women and Men in Organizations: Sex and Gender Issues at Work*. Mahwah, NJ: Lawrence Erlbaum Associates.

Coleman, J. S. (1988). 'Social capital in the creation of human capital'. *American Journal of Sociology*, **94**, 95-120.

Combs, J. G., Ketchen, D. J., Perryman, A. A., and Donahue, M. S. (2007). 'The moderating effect of CEO power on the board composition–firm performance relationship'. *Journal of Management Studies*, 44, 1299 – 1323.

Cox, T. (1993). 'Cultural diversity in organizations: Intergroup conflict'. In Ott, J. S. (Ed.), *Classic Readings in Organizational Behavior* (1996 ed., Vol. 13), Belmont: Wadsworth Pub. Co.

Cox, T. H., Lobel, S. A. and McLeod, P. L. (1991). 'Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task'. *Academy of Management Journal*, **34**, 827-847.

Cyert, R. M. and March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

Daft, R. L. and Lengel, R. H. (1984). 'Information richness: A new approach to managerial behavior and organization design', *Research in Organizational Behavior*, **6**, 191-233.

Daily, C.M., Certo, S.T. and Dalton, D. R. (2000). 'International experience in the executive suite: The path to prosperity?'. *Strategic Management Journal*, **21**, 515-523.

Daily, C. M. and Dalton, D. R. (2003). 'Women in the boardroom: A business imperative'. *Journal of Business Strategy*, **24**, 8-9.

Daily, C. M., Dalton, D. R. and Cannella, A. A. (2003). 'Corporate governance: Decades of dialogue and data'. *Academy of Management Review*, **28**, 371-382.

Dalton, D. R., Dalton, C. M. and Certo, S. T. (2006). 'Women and boards of directors after Sarbanes-Oxley: Participation, position, and promise'. *Annual Meeting of the Academy of Management*. Atlanta, GA.

Dalton, D. R., Daily, C. M., Ellstrand, A. E. and Johnson, J. L. (1998). 'Meta-analytic review of board composition, leadership structure, and financial performance'. *Strategic Management Journal,* **19**, 269-290.

Deephouse, D. L. and Carter, S. M. (2005). 'An examination of differences between organizational legitimacy and organizational reputation'. *Journal of Management Studies,* **42**, 329-360.

Deutsch, Y. (2005). 'The impact of board composition on firms' critical decisions: A meta-analytic review'. *Journal of Management,* **31**, 424-444.

Deutsch, Y. and Ross, T. W. (2003). 'You are known by the directors you keep: Reputable directors as a signaling mechanism for young firms'. *Management Science,* **49**, 1003-1017.

Dimovski, W., and Brooks, R. (2006). 'The gender composition of boards after an IPO'. *Corporate Governance, 6,* 11-17.

Dowling, G. (2006). 'Reputation risk: It is the board's ultimate responsibility'. *Journal of Business Strategy,* **27**, 59-68.

Dwyer, S., Richard, O. C. and Chadwick, K. (2003). 'Gender diversity in management and firm performance: The influence of growth orientation and organizational culture'. *Journal of Business Research,* **56**, 1009-1019.

Erhardt, N. L., Werbel, J. D. and Shrader, C., B. (2003). 'Board of director diversity and firm financial performance'. *Corporate Governance,* **11**, 102-111.

Executive Leadership Council (2006). 'Implications and recommendations of the 2004 census of African-Americans on boards of directors'. http://www.elcinfo.com/ExecSummary.pdf.

Fama, E. F. and Jensen, M. C. (1983). 'Separation of ownership and control'. *Journal of Law and Economics,* **26**, 301-325.

Ferrier, W. J. (1997). ''Tough talk' and market leaders: The role of overt signaling and reputation-building behaviors in sustaining industry dominance'. *Corporate Reputation Review,* **1**, 98-103.

Filatotchev, I. and Bishop, K. (2002). 'Board composition, share ownership, and 'underpricing' of U.K. IPO firms'. *Strategic Management Journal,* **23**, 941 - 955.

Fombrun, C. (1996). *Reputation: Realizing Value from the Corporate Image*. Boston, MA: Harvard Business School Press.

Fombrun, C. (2004). 'Corporate reputations as economic assets'. In Hitt, M. A., Freeman, R. E. and Harrison, J. S. (Eds.), *Handbook of Strategic Management*. Oxford: Blackwell Publishers, 289-312.

Fombrun, C. and Shanley, M. (1990). 'What's in a name? Reputation building and corporate strategy'. *Academy of Management Journal*, **33**, 233-258.

Fondas, N. (2000). 'Women on boards of directors: Gender bias or power threat?' In Burke, R. J. and Mattis, M. C. (Eds.), *Women on Corporate Boards of Directors: International Challenges and Opportunities*. Dordrecht: Kluwer Academic, 171-178.

Forbes, D. P. and Milliken, F. J. (1999). 'Cognition and corporate governance: Understanding board of directors as strategic decision-making groups'. *Academy of Management Review,* **24**, 489-505.

Franko, L. G. (1989). 'Global corporate competition: Who's winning, who's losing, and the R&D factor as one reason why'. *Strategic Management Journal,* **10**, 449-474.

Fryxell, G. E. and Lerner, L. D. (1989). 'Contrasting corporate profiles: Women and minority representation in top management positions'. *Journal of Business Ethics*, **8**, 341-352.

Gabrielsson, J. and Huse, M. (2004). 'Context, behavior, and evolution'. *International Studies of Management and Organizations,* **34,** 11-36.

Giscombe, K. and Mattis, M. (2002). 'Leveling the playing field for women of color in corporate management'. *Journal of Business Ethics,* **37**, 103-119.

Gomez-Mejia, L. R., Balkin, D. B. and Cardy, R. L. (2007). *Managing Human Resources* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Granovetter, M. S. (1973). 'The strength of weak ties'. *American Journal of Sociology*, **78**, 1360-1380.

Graves, S. B. (1988). 'Institutional ownership and corporate R&D in the computer industry'. *Academy of Management Journal,* **31**, 417-428.

Gregory, J. R. (1998). 'Does corporate reputation provide a cushion to companies facing market volatility? Some supportive evidence'. *Corporate Reputation Review,* **1,** 288-290.

Hall, R. (1993). 'A framework linking intangible resources and capabilities'. *Strategic Management Journal*, **14**, 607-619.

Hambrick, D. C. and Mason, P. A. (1984). 'Upper echelons: The organization as a reflection of its top managers'. *Academy of Management Review*, **9**, 193-206.

Hansen, G. S. and Hill, C. W. L. (1991). 'Are institutional investors myopic? A time-series study of four technology-driven industries'. *Strategic Management Journal,* **12**, 1-16.

Harrison, D. A. & Klein, K. J. (2007). 'What's the difference? Diversity constructs as separation, variety, and disparity in organization.' *Academy of Management Review*, 32, 1199-1228.

Harrison, D. A. and Sin, H-P. (2006). 'What is diversity and how should it be measured?'. In Konrad, A. M., Prasad, P. and Pringle, J. K. (Eds.), *Handbook of Workplace Diversity*, London: Sage Publications, 191-216.

Heeley, M. B., King, D. R. and Covin J. G. (2006). 'Effects of firm R&D investment and environment on acquisition likelihood'. *Journal of Management Studies*, **43**, 1513-1535.

Helfat, C. E., Harris, D. and Wolfson, P. J. (2006). 'The pipeline to the top: women and men in the top executive ranks of US corporations'. *Academy of Management Perspectives*, **20**, 42-64.

Henderson, A. D., Miller, D. and Hambrick D. C. (2006). 'How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance'. *Strategic Management Journal*, **27**, 447-460.

Henke, J. (1983). 'Involving boards of directors in strategic planning'. *Journal of Business Strategy,* **7**, 87-95.

Heugens, P. P. M. A. R., van Riel, C. B. M. and van den Bosch, F. A. J. (2004). 'Reputation management capabilities as decision rules', *Journal of Management Studies,* **41**, pp. 1349-1377.

Hill, C. W. L. and Jones, T. M. (1992). 'Stakeholder-agency theory'. *Journal of Management Studies*, **29**, 131-154.

Hill, C. W. L. and Snell, S. A. (1988). 'External control, corporate strategy, and firm performance in research-intensive industries'. *Strategic Management Journal,* **9**, 577.

Hillman, A., Cannella, A. A. and Harris, I. (2002). 'Women and racial minorities in the boardroom: How do they differ?' *Journal of Management,* **28,** 747-763.

Hillman, A. J., Cannella, A. A. and Paetzold, R. L. (2000). 'The resource dependence role of corporate directors: Strategic adaptation of board composition in'. *Journal of Management Studies,* **37,** 235-255.

Hillman, A. and Dalziel, T. (2003). 'Board of directors and firm performance: Integrating agency and resource dependence perspectives'. *Academy of Management Review,* **28,** 383-396.

Himmelbberg, C. P., Hubbard, G. and Palia, D. (1999). 'Understanding the determinants of managerial ownership and the link between ownership and performance'. *Journal of Financial Economics,* **53,** 353-384.

Hirsch, P. M. and Andrews, J. A. Y. (1984). 'Administrators' response to performance and value challenges: stance, symbols, and behavior'. In Sergiovanni, T. J. and Corbally, J. E. (Eds), *Leadership and Organizational Culture*. Urbana, IL: University of Illinois Press, 170–185.

Hispanic Association on Corporate Responsibility. (2007). 'Despite Hispanic Community's Growing Economic Clout, Hispanics Remain Absent from Corporate Boardrooms'. Washington, D. C., http://www.hacr.org/mediacenter/pubID.237/pub_detail.asp.

Hitt, M. A., Hoskisson, R. E., Johnson, R. A. and Moesel, D. D. (1996). 'The market for corporate control and firm innovation'. *Academy of Management Journal,* **39,** 1084-1119.

Hitt, M. A., Hoskisson, R. E. and Kim, H. (1997). 'International diversification: Effects on innovation and firm performance in product-diversified firms'. *Academy of Management Journal,* **40,** 767-799.

Hoel, M. (2004). 'The Nordic 500: Women board directors and executive directors.' Oslo, Norway: Center for Corporate Diversity.

Hoffman, L. (1959). 'Homogeneity and member personality and its effect on group problem solving'. *Journal of Abnormal and Social Psychology*, **58**, 27-32.

Hoffman, L. and Maier, N. (1961). 'Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups'. *Journal of Abnormal and Social Psychology,* **62**, 401-407.

Holtgraves, T. (1986). 'Language structure in social interaction: Perceptions of direct and indirect speech acts and interactants who use them'. *Journal of Personality and Social Psychology, 51,* 305-314.

Hoskisson, R. E., Hitt, M. A., Johnson, R. A. and Grossman, W. (2002). 'Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies'. *Academy of Management Journal,* **45**, 697-716.

Ibarra, H. (1992). 'Homophily and differential returns: Sex differences in network structure and access in an advertising firm'. *Administrative Science Quarterly,* **37**, 422-447.

Ibarra, H. (1993). 'Personal networks of women and minorities in management: A conceptual framework'. *Academy of Management Review*, **18**, 56-87.

Ibarra, H. (1995). 'Race, opportunity, and diversity of social circles in managerial networks'. *Academy of Management Journal*, **38**, 673-703.

Jackson, S. E., Joshi, A. and Erhardt, N. L. (2003). 'Recent research on team and organizational diversity: SWOT analysis and implications'. *Journal of Management*, **29**, 801-830.

Johnson, J. L., Daily, C. M. and Ellstrand, A. E. (1996). 'Board of directors: A review and research agenda'. *Journal of Management,* **22**, 409-438.

Judd, C. M. and Kenny, D. A. (1981). 'Process analysis: Estimating mediation in treatment evaluations'. *Evaluation Review,* **5**, 602-619.

Kesner, I. F. (1987). 'Director's stock ownership and organizational performance: An investigation of Fortune 500 companies'. *Journal of Management,* **13**, 499-508.

Kesner, I. F. (1988). 'Directors' characteristics and committee membership: An investigation of type, occupation, tenure, and gender'. *Academy of Management Journal*, **31**: 66-84.

Knight, R. F. and Pretty, D. J. (1999). 'Corporate catastrophes, stock returns, and trading volume'. *Corporate Reputation Review,* **2**, 363-380.

Kochan, T., Bezrukova, K., Ely, R. J., Jackson, S., Joshi, A., Jehn, K., Leonard, J., Levine, D. and Thomas, D. (2003). 'The effects of diversity on business performance: Report of the diversity research network'. *Human Resource Management,* **42**, 3-21.

Lane, P. J., Cannella, A. A. and Lubatkin, M. H. (1998). 'Agency problems as antecedents to unrelated mergers and diversification: Amihud and Lev reconsidered'. *Strategic Management Journal,* **19**, 555-578.

Lawrence, B. S. (1997). 'The black box of organizational demography'. *Organization Science,* **8**, 1-22.

Lawrence, T. B. (1998). 'Examining resources in an occupational community: reputation in Canadian forensic accounting'. *Human Relations,* **51**, 1103–1131.

Mahon, J. F. (2002). 'Corporate reputation: A research agenda using strategy and stakeholder literature'. *Business & Society,* **41**, 415-445.

Markides, C. C. and Williamson, P. J. (1994). 'Related diversification, core competencies and corporate performance'. *Strategic Management Journal*, **15**, 149-165.

Mattis, M. C. (2000). 'Women corporate directors in the United States'. In Burke, R. J. and Mattis, M. C. (Eds.), *Women on Corporate Boards of Directors: International Challenges and Opportunities*. Dordrecht: Kluwer Academic, 43-56.

McGuire, J. B., Schneeweis, T. and Branch, B. (1990). 'Perceptions of firm quality: A cause or result of firm performance'. *Journal of Management*, **16**, 167-180.

Melcher, R. (1996). 'The best and worst boards'. *Business Week*, **November**, 82-89.

Miller, C. C., Burke, L. M. and Glick, W. H. (1998). 'Cognitive diversity among upper-echelon executives: Implications for strategic decision processes'. *Strategic Management Journal*, **19**, 39-58.

Milliken, F. J. and Martins, L. L. (1996). 'Searching for common threads: Understanding the multiple effects of diversity in organizational groups'. *Academy of Management Review*, **21**, 402-433.

Milliken, F. J. and Vollrath, D. (1991). 'Strategic decision-making tasks and group effectiveness: Insights from theory and research on small groups'. *Human Relations*, **44**, 1229-1253.

Mintzberg, H., Raisinghani, D. and Theoret, A. (1976). 'The structure of 'unstructured' decision processes'. *Administrative Science Quarterly*, **21**, 246-274.

Mizruchi, M. S. (1996). 'What do interlocks do? An analysis, critique, and assessment of research on interlocking directories'. *Annual Review of Sociology*, **22**, 271-298.

Morbey, G. K. (1988). 'R&D: Its relationship to company performance'. *Journal of Product Innovation Management*, **5**, 191-200.

Nelson, R. R. and Winter, S. G. (1982). 'An evolutionary theory of economic change'. Cambridge, MA: Belknap. O'Brien, J. P. (2003). 'The capital structure implications of pursuing a strategy of innovation'. *Strategic Management Journal*, **24**, 415-431.

O'Brien J. P. (2003). 'The capital structure implications of pursuing a strategy of innovation'. *Strategic Management Journal* **24**: 415-432.

Opler, T. C., Pinkowitz, L., Stulz, R. and Williamson R. (1999). 'The determinants and implications of corporate cash holdings'. *Journal of Financial Economics*, **52**, 3-46.

O'Reilly, C. A. (1983). 'The use of information in organizational decision making: A model and some propositions'. *Research in Organizational Behavior,* **5**, 103-140.

Pakes, A. and Schankerman, M. (1984). 'The rate of obsolescence of patents, research gestation lags, and the private rate of return to research resources', in Pakes, A. and Griliches, Z., *R&D, Patents, and Productivity*, Chicago: University of Chicago Press, 315-338.

Parker, L. D. (2007). 'Boardroom strategizing in professional associations: Processual and institutional perspectives'. *Journal of Management Studies,* 44, 1454 – 1480.

Parsons, T. (1960). *Structure and Process in Modern Societies*. New York: Free Press.

Pearce, J. A. and Zahra, S. A. (1992). 'Board composition from a strategic contingency perspective'. *Journal of Management Studies,* **29**, 411-438.

Peterson, C. A. and Philpot, J. (2007). 'Women's roles on U.S. Fortune 500 boards: Director expertise and committee memberships'. *Journal of Business Ethics*, **72**, 177-196.

Pfeffer, J. (1981). *Power in Organizations*. Marshfield, MA: Pitman Pub.

Pfeffer, J. and Salancik, G. (1978). *The External Control of Organizations: A Resource Dependency Perspective*. New York: Harper & Row.

Rechner, P. L. and Dalton, D. R. (1991). 'CEO duality and organizational performance: A longitudinal analysis'. *Strategic Management Journal*, **12**, 155-160.

Richard, O. (2000). 'Racial diversity, business strategy, and firm performance'. *Academy of Management Journal*, **43**: 164–177.

Rindova, V. P. (1999). 'What corporate boards have to do with strategy: A cognitive perspective'. *Journal of Management Studies,* **36**, 953-975.

Roberts, P. W. and Dowling, G. R. (2002). 'Corporate reputation and sustained superior financial performance'. *Strategic Management Journal,* **23**, 1077-1093.

Robertson, M., Swan, J. and Newell, S. (1996). 'The role of networks in the diffusion of technological innovation'. *Journal of Management Studies,* **33**, 333-359.

Robinson, G. and Dechant, K. (1997). 'Building a business case for diversity'. *Academy of Management Executive,* **11**, 21-31.

Rodan, S. and Galunic, C. (2004). 'More than network structure: How knowledge heterogeneity influences managerial performance and innovativeness'. *Strategic Management Journal,* **25**, 541-562.

Ruigrok, W., Peck, S., and Keller, P. (2006). 'Board characteristics and involvement in the strategic decision making: Evidence from Swiss companies'. *Journal of management Studies,* **43**, 1201–1226.

Shrader, C. B., Blackburn, V. B. and Iles, P. (1997). 'Women in management and firm financial performance: An exploratory study'. *Journal of Managerial Issues,* **9**, 355-373.

Singh, V., Terjesen, S. and Vinnicombe, S. (2008). 'Newly appointed directors in the boardroom: How do women and men differ?' *European Management Journal,* **26**, 48-58.

Singh, V., and Vinnicombe, S. (2003). 'The 2002 female FTSE index and women directors'. *Women in Management Review,* **18**, 349-358.

Singh, V., and Vinnicombe, S. (2004). 'Why so few women directors in top UK boardrooms? Evidence and theoretical explanations'. *Corporate Governance,* **12**, 479 - 488.

Singh, V. and Vinnicombe, S. (2006). 'Women on boards of directors: Utilising knowledge and public concern to develop intervention strategies and initiate global action for gender equity at board level'. *Annual meeting of the Academy of Management*. Atlanta, GA.

Spence, M. (1973). 'Job market signaling', *Quarterly Journal of Economics*, 87, 355-374.

Stanwick, P. A. and Stanwick, S. D. (1998). 'The determinants of corporate social performance: An empirical examination'. *American Business Review*, **16**, 86-93.

Staw, B. M. and Epstein, L. D. (2000). 'What bandwagons bring: Effects of popular management techniques on corporate performance, reputation, and CEO pay'. *Administrative Science Quarterly*, **45**, 523-556.

Steiner, I. D. (1972). *Group Process and Productivity*. New York: Academic Press.

Stiles, P. (2001). 'The impact of the board on strategy: An empirical examination'. *Journal of Management Studies*, **38**, 627 - 650.

Teece, D., Pisano, G. and Shuen, A. (1997). 'Dynamic capabilities and strategic management'. *Strategic Management Journal*, **18**, 509-533.

Tsui, A. S., Egan, T. and O'Reilly III, C. A. (1992). 'Being different: Relational demography and organizational attachment'. *Administrative Science Quarterly*, **37**, 549-579.

Turban, D. B. and Greening, D. W. (1997). 'Corporate social performance and organizational attractiveness to prospective employees'. *Academy of Management Journal*, **40,** 658-763.

van der Walt, N. and Ingley, C. (2003). 'Board dynamics and the influence of professional background, gender and racial diversity of directors'. *Corporate Governance*, **11,** 218-234.

Waddock, S. (2000). 'The multiple bottom lines of corporate citizenship: Social investing, reputation, and responsibility audits'. *Business and Society Review*, **105**, 323-345.

Wang, J. and Coffey, B. S. (1992). 'Board composition and corporate philanthropy'. *Journal of Business Ethics*, **11,** 771-778.

Westphal, J. D. and Milton, L. P. (2000). 'How experience and network ties affect the influence of demographic minorities on corporate boards'. *Administrative Science Quarterly,* **45**: 366-398.

Westphal, J. D. and Stern, I. (2006). 'The other pathway to the boardroom: How interpersonal influence behavior can substitute for elite credentials and demographic majority status in gaining access to board appointments'. *Administrative Science Quarterly*, **51**: 169-204

Westphal, J. D. and Stern, I. (2007). 'Flattery will get you everywhere: How ingratiation, boardroom behavior, and demographic minority status affect the likelihood of gaining additional board appointments in U.S. companies'. *Academy of Management Journal*, **50,** 267-288.

Williams, K. Y. and O'Reilly, C. A. (1998). 'Demography and diversity in organizations: A review of 40 years of research'. *Research in Organizational Behavior,* **20**, 77-140.

Williams, R. J. (2003). 'Women on corporate boards of directors and their influence on corporate philanthropy'. *Journal of Business Ethics*, **42,** 1-10.

Williams, R. J., and Barrett, J. D. (2000). 'Corporate philanthropy, criminal activity, and firm reputation: Is there a link?' *Journal of Business Ethics, 26,* 341-350.

Woo, C. Y. and Willard G. (1983). 'Performance presentation in business policy research: Discussion and recommendation', Presented at the Academy of Management conference, Dallas, Texas.

Zahra, S. A. (1996). 'Governance, ownership, and corporate entrepreneurship: The moderating impact of industry'. *Academy of Management Journal,* **39**, 1713-1735.

Zahra, S. A. and Garvis, D. M. (2000). 'International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility'. *Journal of Business Venturing,* **15**, 469-492.

Zelechowski, D. D. and Bilimoria, D. (2001). 'Women corporate inside directors: Tokens at the top.' Unpublished manuscript, Cleveland, OH.

Zelechowski, D. D. and Bilimoria, D. (2003). 'The experience of women corporate inside directors on the boards of Fortune 1000 firms'. *Women in Management Review,* **18**, 376-381.

Zelechowski, D. D. and Bilimoria, D. (2004). 'Characteristics of women and men corporate inside directors in the U. S.' *Corporate Governance,* **12**, 337-342.

Table I. Means, standard deviations, and pairwise correlations[a]

	Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12
1	Firm performance	0.00	0.72												
2	Firm reputation	0.02	0.99	0.21***											
3	Innovation	0.01	0.05	0.17***	-0.01										
4	Racial diversity-Blau	0.17	0.14	0.11*	0.14**	0.10*									
5	Racial diversity-Proportional	0.10	0.09	0.10*	0.15**	0.09†	0.99**								
6	Gender diversity-Blau	0.21	0.11	0.03	0.06	0.09†	0.31***	0.31**							
7	Gender diversity- Proportional	0.13	0.08	0.03	0.07	0.09†	0.30**	0.31***	0.97**						
8	Firm size	1.47	0.47	0.02	0.14**	0.06	0.31**	0.31***	0.17**	0.15**					
9	International diversification	24.79	21.65	0.06	0.07	0.33***	0.03	0.02	-0.06	-0.05	0.11				
10	Product diversification	0.32	0.44	0.05	0.09†	0.00	0.04	0.03	0.02	0.00	0.18***	0.15*			
11	Liquidity	1.44	0.75	0.15**	0.08	0.29***	-0.14**	-0.14**	-0.02	-0.02	-0.10*	0.19*	0.01		
12	Firm age	56.13	46.21	0.06	0.2***	0.02	0.12*	0.11†	0.10†	0.08	0.1†	0.08	0.15**	-0.07	
13	Industry	4.01	1.72	-0.05	-0.04	-0.11*	-0.05	-0.05	0.05	0.05	0.13**	-0.38***	-0.16**	-0.01	-0.07

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

[a] N = 432 for all variables except firm reputation, firm age, and liquidity where N=326

Table II. Results of regression: Innovation on gender and racial board diversity

	Innovation				
Variables	*Model 1*	*Model 2A*	*Model 2B*	*Model 3A*	*Model 3B*
Product diversification	-0.006	-0.006	-0.006	-0.005	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Industry	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm Size	0.008†	0.007	0.007	0.005	0.005
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Liquidity	0.016*	0.016***	0.016***	0.017***	0.017***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
International diversification	0.001*	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.0001)	(0.000)	(0.0001)	(0.000)
Board gender diversity - Blau		0.040*			
		(0.018)			
Board gender diversity – Proportion			0.049*		
			(0.024)		
Board racial diversity - Blau				0.035*	
				(0.016)	
Board racial diversity - Proportion					0.052*
					(0.025)
R^2	0.145	0.154	0.153	0.155	0.153
Adjusted R^2	0.135	0.142	0.141	0.143	0.141
F-test	14.431***	12.933***	12.794***	12.974***	12.839***

Unstandardized coefficients. Two-tailed tests reported. Standard errors in parentheses.
N = 432 † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table III. Results of regression: Reputation on gender and racial board diversity

	Firm Reputation				
Variables	*Model 4*	*Model 5A*	*Model 5B*	*Model 6A*	*Model 6B*
Product diversification	0.063	0.063	0.065	0.072	0.074
	(0.118)	(0.119)	(0.119)	(0.118)	(0.118)
Industry	-0.024	-0.024	-0.024	-0.018	-0.018
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Firm size	0.290*	0.285*	0.278*	0.210†	0.209†
	(0.116)	(0.118)	(0.118)	(0.122)	(0.121)
Firm age	0.004**	0.004**	0.004**	0.004**	0.004**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Liquidity	0.138†	0.138†	0.138†	0.152*	0.152*
	(0.076)	(0.076)	(0.076)	(0.076)	(0.076)
Board gender diversity - Blau		0.116			
		(0.497)			
Board gender diversity - Proportion			0.391		
			(0.655)		
Board racial diversity - Blau				0.864*	
				(0.428)	
Board racial diversity - Proportion					1.421*
					(0.673)
R^2	0.065	0.066	0.067	0.077	0.078
Adjusted R^2	0.051	0.048	0.049	0.060	0.061
F-test	4.484**	3.735**	3.789**	4.453***	4.520***

Unstandardized coefficients. Two-tailed tests reported. Standard errors in parentheses.
N = 326 † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** < 0.001

Table IV. Results of regression: Innovation as mediator of board gender diversity-firm performance relationship

	Firm Performance						
Variables	*Model 7*	*Model 8A*	*Model 8B*	*Model 9A*	*Model 9B*	*Model 10A*	*Model 10B*
Product diversification	0.058	0.058	0.059	0.064	0.065	0.074	0.075
	(0.082)	(0.082)	(0.035)	(0.081)	(0.081)	(0.081)	(0.081)
Industry	-0.02	-0.020	-0.02	-0.014	-0.015	-0.011	-0.012
	(0.021)	(0.021)	(-0.048)	(0.021)	(0.021)	(0.021)	(0.021)
Firm Size	0.049	0.043	0.043	-0.016	-0.01	-0.025	-0.02
	(0.075)	(0.076)	(0.028)	(0.079)	(0.079)	(0.078)	(0.078)
Liquidity	0.153**	0.153**	0.153**	0.166**	0.165**	0.134**	0.133*
	(0.05)	(0.050)	(0.148)	(0.050)	(0.05)	(0.052)	(0.052)
International diversification	-0.0004	-0.0004	-0.0004	-0.0003	-0.0003	-0.002	-0.002
	(0.002)	(0.002)	(-0.008)	(0.002)	(0.002)	(0.002)	(0.002)
Board gender diversity - Blau		0.149					
		(0.310)					
Board gender diversity - Proportion			0.226				
			(0.027)				
Board racial diversity - Blau				0.682**		0.618*	
				(0.261)		(0.261)	
Board racial diversity - Proportion					1.000*		0.904*
					(0.416)		(0.416)
Innovation						1.839*	1.869*
						(0.809)	(0.809)
R^2	0.026	0.026	0.026	0.041	0.039	0.053	0.051
Adjusted R^2	0.014	0.012	0.013	0.028	0.025	0.037	0.035
F-test	2.247*	1.907†	1.919	3.036**	2.856*	3.366**	3.235**

Unstandardized coefficients. Two-tailed tests reported. Standard errors in parentheses.
N = 432 † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table V. Results of regression: Reputation as a mediator of board racial diversity-firm performance relationship

	Firm Performance				
Variables	*Model 11*	*Model 12A*	*Model 12B*	*Model 13A*	*Model 13B*
Product diversification	0.027	0.035	0.036	0.026	0.026
	(0.086)	(0.086)	(0.086)	(0.084)	(0.085)
Industry	-0.027	-0.022	-0.022	-0.019	-0.020
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Firm size	0.033	-0.039	-0.031	-0.067	-0.059
	(0.084)	(0.089)	(0.088)	(0.088)	(0.087)
Firm age	0.001	0.001	0.001	0.0001	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Liquidity	0.146**	0.158**	0.158**	0.138*	0.137*
	(0.056)	(0.055)	(0.055)	(0.055)	(0.055)
Board racial diversity - Blau		0.778*		0.663*	
		(0.311)		(0.308)	
Board racial diversity - Proportion			1.124*		0.934†
			(0.490)		(0.486)
Firm reputation				0.133**	0.134***
				(0.040)	(0.040)
R^2	0.028	0.047	0.044	0.079	0.076
Adjusted R^2	0.013	0.029	0.026	0.059	0.056
F-test	1.868	2.626*	2.453*	3.900***	3.756**

Unstandardized coefficients. Two-tailed tests reported. Standard errors in parentheses.
N = 326 † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.00$

Figure 1. Conceptual model