

Beyond tokenism: How strategic leaders influence more meaningful gender diversity on boards of directors

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Abstract:

Research Summary: We employ an exploratory approach to understand what differentiates boards that retain limited, potentially tokenistic, gender diversity (i.e., a single female director), and boards that more genuinely diversify their composition by appointing additional female directors. Previous studies have speculated that strategic leaders responsible for board appointments may influence this occurrence. Using longitudinal data on U.S. firms, we find that more female top managers and having the sole female director serve on the nominating committee increase the likelihood of additional female director appointments. Boards and nominating committees with younger members amplify these effects, respectively. We use interviews with board members and professional corporate governance consultants to discuss the probable causal mechanisms that underpin these relationships, highlighting novel theoretical insights related to gatekeeping and social psychology. **Managerial Summary:** We explore what compels firms to appoint additional female directors after the first one, as only one female director could be considered a token. Using data on U.S. firms, we find that more female top managers and having the sole female director serve on the nominating committee make firms more likely to appoint additional female directors. These likelihoods are highest when younger directors make up the board at large and/or nominating committee. Chief executive officers can be change agents for gender diversity in their organizations by hiring female top managers and pushing for better representation of women on boards. Likewise, younger directors appear to enhance board gender diversity. These findings can inform the director selection process.

Keywords: board gender diversity | board of directors | director selection process | nominating committee | top management teams

Orhun Guldiken and Mark R. Mallon contributed equally to this study.

Article:

1 INTRODUCTION

Board gender diversity has been a topic of increasing interest to scholars, policy makers, organizations, and the media for decades (e.g., Kesner, 1988; Post & Byron, 2015; PwC Report, 2017; Reingold, 2016; Terjesen, Sealy, & Singh, 2009). In a recent survey of corporate directors in the United States, gender diversity topped the list of what brings new ways of thinking into the boardroom (PwC Report, 2017). Further, growing evidence suggests that board gender diversity is associated with a number of desirable organizational outcomes, such as avoidance of securities fraud (Cumming, Leung, & Rui, 2015), more vigilant monitoring of the top management team (TMT; Adams & Ferreira, 2009), more ethical firm behavior (Nekhili & Gatfaoui, 2013), and higher accounting-based performance and stock market returns (Abdullah, Ismail, & Nachum, 2016; Post & Byron, 2015).

Many U.S. firms today have one female director (Catalyst, 2017), but progress toward greater gender diversity has stalled (2020 Women on Boards, 2017). Having only one woman on the board is problematic for at least two reasons. First, appointing the first female director to the board sometimes represents tokenism in response to strong institutional pressures instead of a sincere attempt to increase diversity of thought within the boardroom (Konrad, Kramer, & Erkut, 2008). Notably, a renowned board gender diversity expert was quoted in a recent media report as saying in regards to one female director, “One is definitely not enough... One is a token” (Carpenter, 2018). Second, studies have shown that many of the benefits of a more gender-diverse board are realized only when female directors move beyond a single representative (Jia & Zhang, 2013; Torchia, Calabro, & Huse, 2011). Hence, an explanation of why some boards go beyond a potentially tokenistic single female director can help firms achieve a more meaningful level of board gender diversity and thereby experience the concomitant outcomes.

Because regulatory bodies and stakeholders often focus on decrying “the lack of legitimacy of homophilous (e.g., all-male) boards” (Perrault, 2015, p. 148), institutional pressures likely compel firms to add the first female director (Konrad et al., 2008; Perrault, 2015). However, once these institutional demands have been appeased, additional appointments provide diminishing legitimacy gains. Indeed, the likelihood of appointing a female director to a vacant board seat drops significantly when one female director is already on the board (Farrell & Hersch, 2005). When it comes to adding more women to the board after the first one, although institutional pressures do not disappear completely, internal dynamics related to strategic leaders charged with board appointments are likely to be more salient (Konrad et al., 2008). In particular, some have speculated that board gender inequality may be related to female underrepresentation on the TMT and board committees (Larcker & Tayan, 2011)—two groups affecting the director selection process (Carter & Lorsch, 2004; Leblanc & Gillies, 2005).

Yet, the literature on the antecedents of board gender diversity has largely neglected the role of strategic leaders, as many studies have focused more on broader organizational factors, such as firm size, risk exposure, and diversification (e.g., Hillman, Shropshire, & Cannella, 2007), as

well as institutional explanations at the national level (e.g., Terjesen, Aguilera, & Lorenz, 2015). As a result, despite the prominence of strategic leaders in choosing who will serve on the board (Carter & Lorsch, 2004; Larcker & Tayan, 2011; Leblanc & Gillies, 2005), very little is known about how these leaders affect board gender diversity. Moreover, many studies on board gender diversity are descriptive and lack theory (Terjesen et al., 2009).

Accordingly, in this study we take an exploratory approach to address the research question: How do strategic leaders affect female director appointments beyond the potentially tokenistic first one? Such an approach “is appropriate when existing theory provides a useful frame for a baseline argument but is not robust enough for precise hypotheses” (Bettis, Gambardella, Helfat, & Mitchell, 2014, p. 950), and it has been used in other studies of gender diversity at the strategic leadership level due to the lack of theoretical foundations to guide more specific predictions (e.g., Dwivedi, Joshi, & Misangyi, 2018; Lyngsie & Foss, 2017). We first engage in a quantitative analysis to identify empirical patterns related to additional female director appointments beyond the first one. Specifically, we examine longitudinal data on boards of publicly listed U.S. firms from 2008 to 2014, using the “possibility principle” to select only firms that could possibly have appointed additional female directors. Even though no statistical method can establish causality, this research design “can help scholars avoid errors and maximize leverage for making valid causal inferences” (Mahoney & Goertz, 2004, p. 653). Consistent with the notion that strategic leaders matter for achieving more meaningful levels of board gender diversity, our findings show that more females on the TMT and having the sole female director serve on the nominating committee increase the likelihood of additional female director appointments. Additionally, nominating committees with younger members amplify the positive effect of a female nominating committee member, and boards at large with younger members amplify the positive effect of female top managers.

We then present evidence gathered from interviews with experienced directors and professional corporate governance consultants, which is used to glean finer-grained insights into the mechanisms underlying the quantitative patterns and the process of appointing additional female directors. The interview data suggest that a higher representation of women on the TMT indicates the chief executive officer's (CEO's) preference for gender diversity. When the CEO values gender diversity, the TMT will reflect such a preference, and the CEO will likely lobby for female director candidates. Further, the inclusion of a female on the nominating committee can disrupt past practices of director recruitment and selection. Younger board and committee members may use their power to strengthen these effects due to their tendency to have more exposure to female strategic leaders than older members who spent most of their careers at times when female strategic leaders were much less prevalent. Based on these insights, we illuminate gatekeeping and social psychology perspectives as possible theoretical explanations of increased levels of board gender diversity.

Our study contributes to the literature on board gender diversity by exploring how internal dynamics at the strategic leadership level influence female director appointments beyond the first one (Gabaldon, Anca, De Cabo, & Gimeno, 2016). Our exploratory analyses and subsequent elaboration of likely underlying theoretical mechanisms move the literature forward by guiding future research in a stream where theoretical foundations are often weak (Terjesen et al., 2009). Further, the focus of prior studies has been on the *outcomes* of increased levels of board gender

diversity, such as innovation and corporate philanthropy (e.g., Jia & Zhang, 2013; Konrad et al., 2008; Torchia et al., 2011). Studies that have examined antecedents have attempted to explain the proportion of women on the board of directors at a given point in time or the existence of one woman on the board of directors (e.g., De Cabo, Gimeno, & Nieto, 2012; Kesner, 1988). Consequently, the drivers underpinning the *change* from one female director to greater board gender diversity remain unclear. This gap is noteworthy, as the many benefits of increased levels of board gender diversity may not be realized if there is only a single female director on the board (Post & Byron, 2015). Finally, our study provides useful insights to practitioners. After demonstrating the effects of strategic leaders on additional female director appointments, we discuss how managers can leverage this knowledge to implement policies and practices aimed at improving female representation on corporate boards.

2 METHODS

2.1 Sample

Our sample was drawn from firms on the S&P 1500. Specifically, we used BoardEx to extract data related to board characteristics and supplemented it with data on TMTs and firm characteristics from the Bloomberg database. Data from the U.S. Bureau of Labor Statistics were used for one industry variable, as described below. Even though the passage of the Sarbanes-Oxley Act in 2002 mandated more transparent corporate governance practices (Larcker & Tayan, 2011), data on board gender characteristics were largely unavailable until around 2008. We therefore sampled the years 2008–2014 and constructed a panel dataset spanning these years. Consistent with our motivations for this study, among all firm-years for which data were available in the BoardEx database during the sampling period, the average number of female directors was 0.78, with *SD* of 0.95. Thus, most firms during the examined time period only had one female director, and firms that appointed an additional female director(s) became among the most gender diverse.

Given our interest in explaining the decision to add more female members to the board when there is already one female director, we followed Krause and Semadeni (2013) and based our sampling on Mahoney and Goertz's (2004) "possibility principle." This principle states that "comparisons between subjects that experienced a particular outcome and subjects that did not experience the outcome can only be made if the subjects that did not experience the outcome of interest could possibly have done so" (Krause & Semadeni, 2013, p. 813). Firm-years in which companies were not in a position to go beyond one female director (i.e., firms with no female director or firms that already had more than one) were not retained for analysis because they could not have experienced the outcome of interest. Firms that appointed additional female directors during the sampling period were removed from the sample after the year in which the appointment was made. This procedure reduced sample size but allowed us to capture the event of female director appointments beyond the first one and thus have more confidence in the potential for causality (Krause & Semadeni, 2013). After matching firm data from the two primary sources, and following the possibility principle, we obtained an unbalanced panel of 184 firms and 747 firm-year observations (some firms were included for multiple years if they retained only one female director). The average number of firm-years per firm was 3.9. Sixteen

industries were represented, with a mix of manufacturers, natural resource extraction/production firms, and service providers.

2.2 Measures

2.2.1 *Dependent variable*

In line with the possibility principle, our dependent variable was coded as a 1 if a firm in a given year had one female director and appointed at least one more. If the firm had one female director but did not add more in a given year, it was coded as a 0. Hence, the dependent variable is dichotomous and, as we will explain in more detail below, the effects of explanatory variables are probabilistic in nature (Hair, Anderson, Babin, & Black, 2010). Within our sample of firms that already had one female director, 7.36% of firm-years exhibited the appointment of additional female directors, representing 55 unique firms.

2.2.2 *Explanatory variables*

Our choice of primary explanatory variables was guided by previous research surrounding new director appointments, which focuses on the influence of the TMT and the nominating committee. The search for a new director is typically triggered by the retirement of an existing member, a need to add more skills to the board, and/or a recommendation from the firm's strategic leaders (Clune, Hermanson, Tompkins, & Ye, 2014). Such recommendations often originate from TMTs, indicating their informal influence over the director selection process (Leblanc & Gillies, 2005; Westphal & Zajac, 1995; Zhu & Westphal, 2014). For example, Clune et al. (2014, p. 750) found that “there is continuing recognition of CEO influence in the director nomination process.” As a result, “many directors have ties to management” (Clune et al., 2014, p. 752). Thus, an investigation of the TMT is warranted in order to understand female director appointments beyond the first one.

In terms of the specific TMT influence on board gender diversity, “boards may lack female directors because women are underrepresented at the senior executive level” (Larcker & Tayan, 2011, p. 158). Although the TMT may exert informal pressure on the board to appoint female directors, if the TMT is dominated by males, then female director appointments may be less likely because TMT members tend to recommend director candidates who are demographically similar to themselves (Westphal & Zajac, 1995). It therefore seems probable that female representation on the TMT (or lack thereof) can affect the appointment of female directors. Accordingly, we followed previous literature (e.g., Hambrick, Cho, & Chen, 1996) and used the number of female officers above the rank of vice president (CEO, chief financial officer, senior vice president, etc.) in the firm, denoted as *female top managers* in our models. Firms in our sample had an average of less than one female top manager, with 53% having none. Thus, using the proportion was not ideal due to the distribution of the data. Indeed, in large U.S. firms women are still a minority in TMTs (Catalyst, 2017; Reingold, 2016), making their proportion a potentially misleading indicator of their influence on our outcome of interest. For instance, the proportion of one female top manager in a firm that has many TMT members would be artificially low, whereas the proportion of one female top manager in a firm that has fewer TMT members would be artificially high. Furthermore, strategic leadership studies that focus on

minority members commonly use the specific number rather than a proportion because the number matters for achieving critical mass and thereby having a noticeable effect (e.g., Carter, D'Souza, Simkins, & Simpson, 2010; Nekhili & Gatfaoui, 2013).

In addition to the informal influence of CEOs and other TMT members, nominating committees have the formal power to recommend potential directors to the board, and all publicly traded firms in the United States are required to have a nominating committee following the Sarbanes-Oxley Act of 2002 (Carter & Lorsch, 2004; Larcker & Tayan, 2011). Although the search for potential directors can occur due to retirements or recommendations, nominating committees also review the composition of the board annually to ensure required skillsets are present and may seek out new directors to fill any gaps (Clune et al., 2014).

Despite the increasingly prominent role of nominating committees in the director selection process due to the Sarbanes-Oxley Act, the informal influence of TMT members “can be high when process formality [of the nominating committee] is low or high” (Clune et al., 2014, p. 778). In other words, neither TMT members nor nominating committees dominate the director selection process; rather, these influences coexist. As with the TMT, a lack of gender diversity on nominating committees has been suggested as an impediment to increased levels of board gender diversity (e.g., Seierstad, 2016), as this group creates the pool of potential director candidates and then decides which one will be voted on by the board at large. It seems reasonable that all-male committees would be more likely to choose male board candidates than committees with a woman because committee members often recruit candidates based on their social networks (Clune et al., 2014). “Relying only on the former [personal networks], particularly when a board is composed primarily of men, risks perpetuating the same slates of male candidates” (Huber, 2018). Therefore, we investigated the effects of having a *female on the nominating committee*. If the sole female director also served on a firm's nominating committee, it was coded as a 1, and a 0 if not.

In addition to the gender makeup of TMTs and nominating committees, the age of the individuals in these groups may also play a role in director selection. Older directors tend to be male and have mostly male professional networks because they spent the bulk of their careers during times when female strategic leaders were uncommon (Singh & Vinnicombe, 2004). “Not only are they [boards] dominated by males, but the males that are on boards ... are people to whom the whole female gender movement is new” because they are mostly older (Green, 2018). Conversely, younger individuals are more likely to have worked with female strategic leaders (e.g., Donnelly et al., 2016). Hence, it is possible that older boards could be less receptive to female director candidates recommended by TMT members. Likewise, older nominating committee members could possibly mitigate the influence of a female director on the nominating committee, particularly because the female director is only one voice in a committee usually comprised of at least three members.

We therefore included variables for *board age* and *nominating committee age*, calculated as the average age (in years) of all directors on the board at large and nominating committee, respectively, consistent with prior studies (e.g., Ferris, Jagannathan, & Pritchard, 2003). Even though the nominating committee is a subset of the board at large, the formal responsibility of nominating directors for election by shareholders falls to the nominating committee (Carter &

Lorsch, 2004; Larcker & Tayan, 2011). Thus, it seemed reasonable to capture the age of both groups separately, as the dynamics within each group might differ. CEOs and TMTs typically bring their director nominations to the board at large, whereas dynamics within the nominating committee tend to stay within that group. After the nominating committee decides to nominate a director for election by shareholders, approval by the board at large is almost guaranteed (Akyol & Cohen, 2013), suggesting limited interference from the board at large in the workings of nominating committees. All told, dynamics within the nominating committee likely stay within that committee, whereas the board at large debates recommendations from CEOs and other TMT members, suggesting the potential for different effects depending on the average age of each group.

2.2.3 Control variables

We included a number of control variables that have been shown to affect board gender diversity. Given that industry factors might influence firms to have one female director and therefore be included in our sampling based on the possibility principle, there exists a possibility of sample selection bias. We calculated the influence of industry factors using a two-stage Heckman procedure (Heckman, 1979). First, we drew a larger sample of firms from BoardEx to include both firms that had one female director as well as those that had none. Consistent with previous research, we operationalized industry factors that might affect board gender diversity using the average percentage of females on boards (using BoardEx data) and the average percentage of female executives within each firm's industry (using data from the Bureau of Labor Statistics; Hillman et al., 2007). Next, we ran a probit model using these two variables to predict whether a firm had one female director or not. We calculated the *inverse Mills ratio* from this model for each firm and inserted this variable into the model predicting the move from one female director to more than one, therefore accounting for potential bias in the coefficients related to sample selection (Shaver, 1998). The effects of the industry variables were not statistically different from zero when predicting our dependent variable and including them alongside the inverse Mills ratios in the model did not substantively affect the results.

At the firm level, we controlled for *firm size* (Hillman et al., 2007), using the natural logarithm of the firm's assets, as larger firms may be more visible to stakeholders. We controlled for *CEO duality* to account for management power over the board (Nekhili & Gatfaoui, 2013; Zajac & Westphal, 1996), coded as a 1 when the CEO also chaired the board, and a 0 when not. Because a powerful CEO might seek to appoint demographically similar board members (Westphal & Zajac, 1995), we controlled for whether there was a *female CEO* using a dummy variable wherein 1 indicated a female CEO, and 0 a male CEO. Only 17 firm-years and six unique firms had a female CEO. We also controlled for *CEO tenure* by measuring the number of years the current CEO had held the position (Dwivedi et al., 2018). To account for the fact that larger TMTs may have more capacity to have female members, we controlled for *TMT size* using the total number of officers above the rank of vice president (Hambrick et al., 1996). *Firm performance* was included in models by using the percentage of return on assets (adjusted based on the industry average) to account for potential financial pressures to change board composition (Hillman et al., 2007). We also controlled for the firm's degree of unrelated diversification using the entropy measure (Palepu, 1985) to indicate the possible need for diverse director skills or knowledge (Hillman et al., 2007). At the board level, we controlled for *board independence* to

account for board power relative to management (Haynes & Hillman, 2010; Zajac & Westphal, 1996), measured as the percentage of independent directors on the board (Nekhili & Gatfaoui, 2013); *board size*, measured as the number of individuals serving on the board (Hillman et al., 2007), to account for board capacity to appoint new directors; and *interlocking female directors*, measured as the number of female directors on the boards of firms that were interlocked with the focal firm, to account for the fact that governance practices like gender diversity may flow through firm networks (Shipilov, Greve, & Rowley, 2010).

Descriptive statistics of all variables for the sampled firms are shown in Table 1. Consistent with our assertion that institutional factors will matter less for female director appointments beyond the first one, the two variables representing industry factors were not significantly correlated with the appointment of additional female directors. However, the number of female top managers and having the sole female director on the nominating committee were significantly correlated with appointing additional female directors, consistent with our argument that strategic leadership attributes likely matter when firms go beyond a single female director. Additionally, with one exception, predictor variables were not highly correlated with each other, and the maximum variance inflation factor was 1.98 (average = 1.31), indicating multicollinearity was not a major concern (Hair et al., 2010). However, as one might expect, board age and nominating committee age were significantly correlated ($r = 0.71$). Accordingly, as we discuss below, we used board age when testing how age influences the effects of female top managers, and nominating committee age when testing how age influences the effects of a female director on the nominating committee, though including the average age of the board at large in the latter model did not substantively affect the results.

2.3 Analytical technique

The binary nature of our dependent variable and longitudinal structure of our data necessitated an appropriate analytical technique. We used generalized estimating equations, which is a technique designed to handle a variety of nonscale dependent variables, such as binary ones, especially for time-series data (Ballinger, 2004). To specify the generalized estimating equations, we used Stata. After defining the time-series data based on which group (firm) each observation belongs to, a link function is set to specify the distribution of the dependent variable. Because our dependent variable was binary and based on the possibility principle, we specified a binomial logit function. Finally, the correlation structure of the data is inputted so the software correctly estimates models that account for the correlations of within-group observations. We specified an autoregressive correlation structure, which is appropriate for repeated time-series measures from the same subjects (in this case, firms; Ballinger, 2004).

Table 1. Descriptive statistics

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Additional female director (s) appointed ^a	0.07	0.26	1.00															
2. Industry female directors ^b	9.43	3.27	-0.05	1.00														
3. Industry female executives ^b	13.80	6.62	-0.04	0.08	1.00													
4. Firm size	6.87	1.78	0.13	-0.14	-0.13	1.00												
5. Firm performance ^b	3.33	17.99	0.03	-0.02	-0.05	0.27	1.00											
6. Unrelated diversification	0.09	0.20	-0.05	-0.01	-0.16	0.19	0.00	1.00										
7. CEO duality ^a	0.50	0.50	0.03	-0.02	-0.13	0.14	0.15	0.08	1.00									
8. CEO tenure	9.08	7.84	-0.04	-0.08	0.06	0.16	0.15	0.13	0.31	1.00								
9. Female CEO ^a	0.02	0.15	-0.01	0.12	0.01	-0.04	-0.03	-0.06	0.01	-0.06	1.00							
10. TMT size	6.68	2.81	0.08	-0.20	0.00	0.38	0.09	0.06	0.04	0.06	0.10	1.00						
11. Board size	7.36	2.25	0.28	-0.10	-0.14	0.46	0.09	0.08	0.05	-0.07	-0.05	0.32	1.00					
12. Board independence ^b	77.84	11.51	0.09	-0.08	0.02	0.11	0.01	-0.09	-0.11	-0.24	-0.01	0.13	0.29	1.00				
13. Interlocking female directors	5.25	5.92	0.19	0.02	0.00	0.52	0.05	0.01	0.06	-0.04	0.03	0.13	0.41	0.13	1.00			
14. Board age	61.02	4.16	-0.03	-0.04	-0.20	0.22	0.18	0.06	0.09	0.23	-0.01	0.18	0.17	0.14	0.09	1.00		
15. Nominating committee age	62.39	5.10	-0.05	-0.08	-0.07	0.28	0.17	0.08	0.04	0.17	0.01	0.20	0.19	0.14	0.16	0.71	1.00	
16. Female top managers	0.78	1.07	0.13	0.07	0.20	0.10	0.00	-0.07	-0.06	-0.05	0.22	0.50	0.16	0.02	0.07	0.08	0.11	1.00
17. Female on nominating committee ^a	0.67	0.47	0.11	-0.12	-0.12	-0.12	-0.01	0.01	0.00	-0.09	-0.18	-0.05	-0.03	0.07	-0.09	-0.09	-0.22	-0.09

Note: Coefficients in bold are significant at .05 level or lower (two-tailed).

^a Binary indicator (0/1).

^b Measured as a percentage (0–100). *N* = 747 firm-years.

Table 2. Generalized estimating equations predicting appointment of additional female directors

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	-3.19 (2.43) [.19]	-3.40 (2.50) [.17]	-4.67 (2.55) [.07]	-8.66 (1.68) [.00]	-9.41 (1.71) [.00]
Inverse Mills ratio	0.74 (0.82) [.37]	1.17 (0.85) [.17]	0.83 (0.85) [.33]	0.87 (0.85) [.31]	1.12 (0.86) [.19]
Firm size	0.02 (0.12) [.86]	0.03 (0.12) [.77]	0.12 (0.12) [.36]	0.12 (0.13) [.33]	0.11 (0.12) [.40]
Firm performance	0.00 (0.01) [.70]	0.00 (0.01) [.73]	0.00 (0.01) [.85]	0.00 (0.01) [.81]	0.01 (0.01) [.62]
Unrelated diversification	-1.80 (1.01) [.08]	-1.73 (1.03) [.09]	-1.74 (1.00) [.08]	-1.87 (1.02) [.07]	-1.56 (1.02) [.13]
CEO duality	-0.09 (0.32) [.78]	0.11 (0.32) [.72]	0.02 (0.32) [.94]	0.00 (0.32) [.99]	-0.05 (0.32) [.87]
CEO tenure	0.00 (0.02) [.89]	0.01(0.02) [.76]	0.01 (0.02) [.57]	0.01 (0.02) [.56]	0.01 (0.02) [.65]
Female CEO	0.31 (1.08) [.78]	0.01 (1.08) [.99]	0.91 (1.12) [.42]	0.88 (1.12) [.43]	0.96 (1.13) [.39]
TMT size	0.00 (0.05) [.93]	-0.12 (0.07) [.07]	-0.14 (0.07) [.03]	-0.13 (0.07) [.06]	-0.13 (0.07) [.06]
Board size	0.33 (0.07) [.00]	0.34 (0.07) [.00]	0.34 (0.07) [.00]	0.34 (0.07) [.00]	0.34 (0.07) [.00]
Board independence	0.01 (0.02) [.38]	0.02 (0.02) [.25]	0.01 (0.02) [.47]	0.01 (0.02) [.46]	0.01 (0.02) [.40]
Interlocking female directors	0.04 (0.03) [.09]	0.04 (0.03) [.14]	0.05 (0.03) [.09]	0.04 (0.03) [.14]	0.05 (0.03) [.07]
Board age	-0.07 (0.04) [.07]	-0.08 (0.04) [.06]	-0.07 (0.04) [.09]	-0.06 (0.04) [.12]	
Female top managers		0.47 (0.15) [.00]	0.52 (0.16) [.00]	0.55 (0.16) [.00]	0.53 (0.16) [.00]
Female on nominating committee			1.50 (0.47) [.00]	1.47 (0.47) [.00]	1.47 (0.51) [.00]
Female top managers × board age				-0.04 (0.03) [.24]	
Nominating committee age					-0.01 (0.08) [.88]
Female on nominating committee × nominating committee age					-0.10 (0.09) [.27]
Wald χ^2	55.24 [.00]	59.82 [.00]	64.91 [.00]	65.29 [.00]	67.14 [.00]
<i>N</i> (firm-years)	747	747	747	747	747

Note: Two-tailed tests. Unstandardized coefficients are shown representing changes in the log odds of the dependent variable's occurring. Standard errors are displayed in parentheses. *p*-Values are in brackets. Values are truncated to two decimal places.

Abbreviations: CEO, chief executive officer; TMT, top management team.

3 QUANTITATIVE FINDINGS

Results of the generalized estimating equations are displayed in Table 2. Model 1 shows an analysis with only control variables. The unstandardized coefficient of female top managers was positive when it was added in Model 2 ($\beta = .47$; $SE = 0.15$; $p = .00$). This coefficient means that for every female top manager, there is an increase of 0.47 in the log odds of appointing additional female directors. The 95% confidence interval (0.17–0.78) for this coefficient did not include zero, meaning there is a very low probability of a null effect. The likelihood of the observed effect being due to chance was less than 1%. The log odds coefficient of 0.47 corresponds to an odds ratio of 1.6. Odds ratios indicate the change in likelihood of a dependent variable resulting from a one-unit increase in the independent variable, with 1.00 meaning no change in likelihood, numbers greater than 1.00 meaning a positive change in likelihood, and numbers less than 1.00 meaning a negative change in likelihood. Hence, the odds ratio of 1.6 indicates that each female top manager makes the average firm 1.6 times more likely to appoint additional female directors. This value is substantial compared to predictors found in previous studies of board gender diversity (e.g., Hillman et al., 2007), implying that the number of female top managers is an important driver of board gender diversity beyond the first female director.

Having the sole female director serve on the nominating committee also positively influenced additional female director appointments. The log odds coefficient of 1.50 was positive for the variable indicating the female director served on the nominating committee when it was added in Model 3 ($SE = 0.47$; $p = .00$), and the 95% confidence interval (0.58–2.42) did not include a possibility of a null effect. The likelihood of the observed effect being due to chance was less than 1%. Converted to an odds ratio, having the sole female director serve on the nominating committee makes the average firm 4.41 times more likely to appoint additional female directors. Consequently, the effect size is quite large.

Finally, in Model 1, board age had a slight negative effect ($\beta = -.07$; $SE = 0.04$; $p = .07$), indicating it generally reduces the likelihood of appointing additional female directors. To understand how, we tested for moderation effects. We interacted *board age* with *female top managers* in Model 4. Because the locus of dynamics regarding a female nominating committee member would likely be within the nominating committee, we interacted *nominating committee age* and *female director on the nominating committee* in Model 5. When testing moderation effects, variables in interaction terms were centered around the mean (Aiken & West, 1991).

The interaction between *female top managers* and *board age* was negative when added in Model 4, indicating that a younger (older) board may amplify (dampen) the effect of female top managers ($\beta = -.04$; $SE = 0.03$; $p = .24$). However, the 95% confidence interval (–0.10 to 0.3) included zero, indicating the possibility of a null effect. Similarly, when added in Model 5, the interaction of *female director on the nominating committee* and *nominating committee age* was negative, indicating that younger (older) nominating committees may amplify (dampen) the effect of a female nominating committee member ($\beta = -.10$; $SE = 0.09$; $p = .27$). However, the 95% confidence interval (–0.27 to 0.08) included zero, indicating the possibility of a null effect. That said, assessing the effects embedded in these interactions is not straightforward due to the binary nature of the dependent variable. According to Zelner (2009, p. 1336), “the nonlinearity of logit and probit models means that the relationship between a change in the value of an

independent variable and the estimated change in the probability of a positive outcome cannot be directly discerned from the variable's coefficient.” To investigate these interaction effects more accurately, we used the method developed by King, Tomz, and Wittenberg (2000) and Zolner (2009) for interpreting interaction effects on nonlinear dependent variables. This method simulates a given model 1,000 times and then graphically shows the change in the predicted probability of the outcome's occurrence measured against changes in the independent variable, as well as the ranges of data in the moderating variable where the moderation effect is statistically different from zero using 95% confidence intervals.

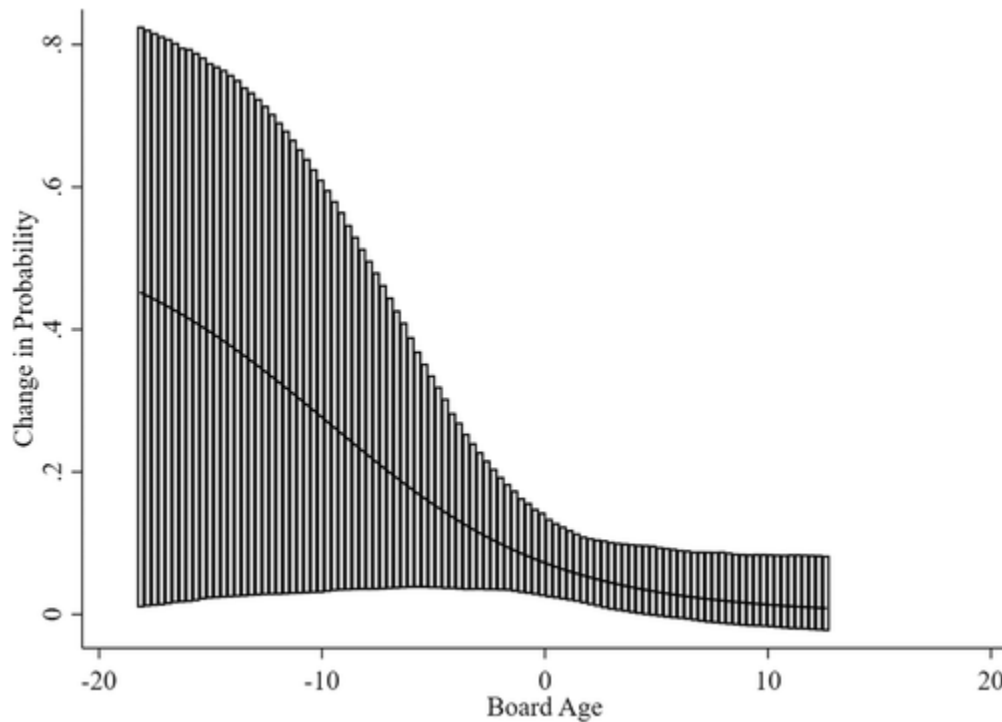


Figure 1. Effect of increasing number of female top managers and board age on appointment of additional female directors. *Note:* The vertical axis represents the change in probability of appointing additional female directors when the number of female top managers increases from 0 to 2 (1 *SD* below and above the mean, respectively). The horizontal axis represents how this change in probability varies according to the age of the board, centered around the mean. Vertical bars represent 95% confidence intervals

The simulated interaction effects are graphed in Figures 1 and 2. Figure 1 shows the change in probability of appointing additional female directors when the number of female top managers increases from zero to two (approximately 1 *SD* below and above the mean, respectively), graphed across the range of possible values for board age (mean centered) to interpret the interaction. Vertical bars along the trend line indicate the 95% confidence intervals to assess the possibility of a null effect of a change from zero to two female top managers at different values of board age. Although the interaction effect of female top managers and board age in our previous model had the possibility a null effect, Figure 1 shows that this moderation effect *is* significantly different from zero for values of board age below and including the mean, as well as up to about 1 *SD* (4 years) above the mean in board age. That is, at these values, the 95% confidence interval does not overlap with zero, whereas after a substantially above-average

level of board age has been reached, the effect is no longer statistically different from zero, and differences in board age no longer matter. Hence, the effect of female top managers on additional female director appointments is more pronounced among younger boards. If board age is beyond common levels (more than approximately 1 *SD* above the mean), the effect of female top managers is not statistically different from zero.

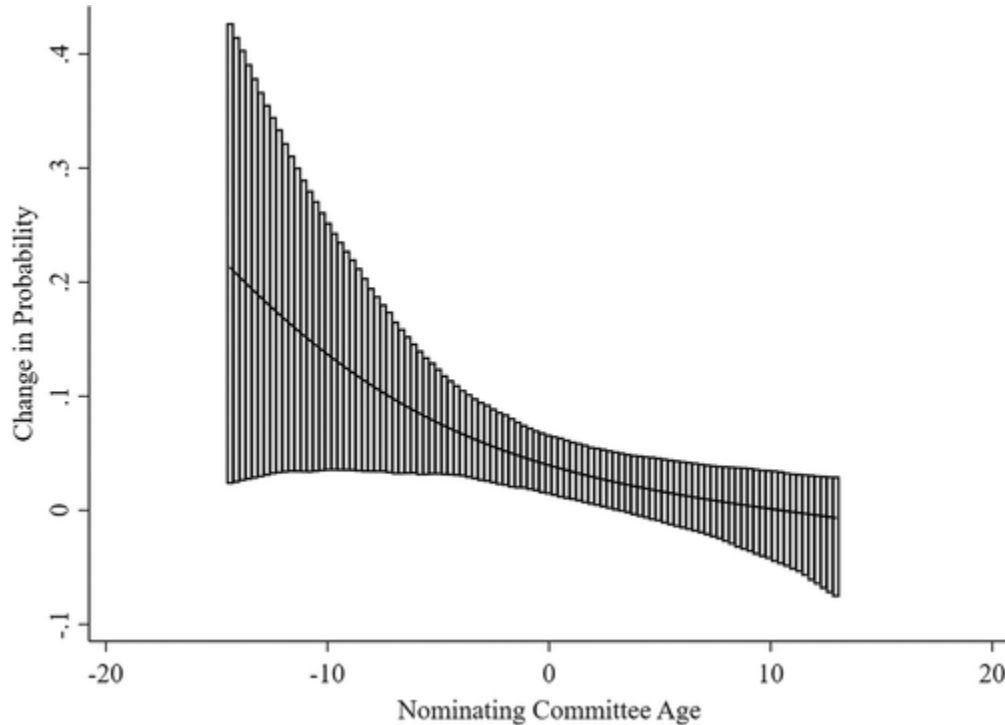


Figure 2. Effect of female director on the nominating committee and nominating committee age on appointment of additional female directors. *Note:* The vertical axis represents the change in probability of appointing additional female directors when firms went from no female on the nominating committee to having a female on the nominating committee. The horizontal axis represents how this change in probability varies according to the age of the nominating committee, centered around the mean. Vertical bars represent 95% confidence intervals

The simulated interaction of a female nominating committee member and nominating committee age is shown in Figure 2. Here, the graph depicts the change in probability of appointing additional female directors when the sole female director serves on the nominating committee (as opposed to not having the female director serve on the committee), graphed across the range of values for nominating committee age (mean centered). The pattern is similar to that found in Figure 1. The effect is statistically different from zero at the 95% level for most of the range of nominating committee age, except for high levels starting approximately 1 *SD* (5 years) above the mean. After this point, the effect of a female member of the nominating committee is not statistically different from zero at any value of nominating committee age.

3.1 Additional analyses

It is possible that individuals who affect director appointments may exert more influence when they have greater power (e.g., Carter & Lorsch, 2004). Accordingly, to understand more fully the

role of CEOs and TMTs in the female director selection process, we interacted the number of female top managers with CEO tenure, one of the most widely used indicators of CEO power (Finkelstein, Hambrick, & Cannella, 2009). We also examined the interactions between the number of female top managers and several other indicators of CEO power, including CEO duality, the CEO's tenure vis-à-vis directors' tenure, and CEO stock ownership, as well as with the average tenure and stock ownership of the TMT as a whole. However, we did not detect any noteworthy patterns.

Likewise, we ran additional tests to understand the role of power of female nominating committee members in the female director selection process. First, we included a dummy variable indicating whether the female on the nominating committee was also the chair. The effect is shown in Table S1 but reveals no effect statistically different from zero. We also interacted the variable of *female director on the nominating committee* with a measure of her tenure on the board (in years). The interaction effect had a coefficient of 0.34 with a *SE* of 0.21 and a *p*-value of .10, indicating a potential moderation effect (shown in Table S1). We used the simulation procedure described above to determine the ranges where this interaction effect is statistically different from zero (shown in Figure S1). Although the change in probabilities is small, female directors on the nominating committee appear to exert greater influence on the appointment of additional female directors as their time on the board increases, but this influence peaks around the mean value of tenure and then tends to decrease (the effect of a female committee member remains positive at all levels of tenure). However, missing data on tenure reduced sample size, especially for firms with younger boards (where the effects of a female nominating committee member are strongest). Hence the left side of this graph may be less accurate, and the moderating effects of female director tenure ought to be interpreted with caution.

Finally, we ran a model predicting the appointment of the first female director to the board (shown in Table S2). For this analysis, we used a different sample of firms based on the possibility principle. This sample was drawn from the same time period as our main sample and consisted of 874 firm-years and 212 unique firms with *no* female directors. The model predicted the event of appointing the first female director. Those firms that did so would then have been dropped from this sample starting the year after the appointment but would be included in the sample for our main analyses above, starting with the year the first female director joined the board. Consistent with our expectation that institutional factors will be more salient for the first female director appointment, the variables indicating the percentages of industry female directors ($\beta = .12$; $SE = 0.05$; $p = .01$) and industry female executives ($\beta = .06$; $SE = 0.02$; $p = .01$) had positive effects in this model, whereas the inverse Mills ratios capturing these pressures when predicting additional female appointments (Table 2) was not statistically different from zero ($\beta = .74$; $SE = 0.82$; $p = .37$). Similarly, firm size positively influenced the likelihood of appointing the first female director ($\beta = .22$; $SE = 0.12$; $p = .06$), whereas it did not appear to influence appointing female directors beyond the first one. Conversely, the strategic leadership characteristics in our main analyses—number of female top managers and board age—were not statistically different from zero ($\beta = .06$; $SE = 0.18$; $p = .73$ and $\beta = .01$; $SE = 0.03$; $p = .64$, respectively) in the model predicting the first female director appointment (female director on the nominating committee was not included as there can be no female on the committee if there is none on the board). These results lend additional credence to our argument that institutional

factors will matter more for the first female director appointment, whereas strategic leaders' characteristics will matter more for subsequent appointments.

4 INTERPRETING THE FINDINGS

4.1 Insights from expert interviews

To understand further the appointment of additional female directors beyond the first one, after conducting our quantitative analyses we conducted interviews with a geographically diverse set of 10 current corporate directors (six women and four men) with collective experience on 21 boards in the United States, all of which were publicly traded except for one mutual insurance company. These boards spanned 12 industries, eight of which were the same as those represented in our quantitative sample, or closely related. However, no interviewees served on the boards of firms within our quantitative sample. We also interviewed two professional corporate governance consultants (one woman and one man) who have extensive experience working with corporate boards. Interviewees were contacted based on professional or networked relationships with the authors, and interviews proceeded until a point of saturation was reached, in that no new insights emerged from additional interviews. The goal of these interviews was to substantiate the speculated importance of our chosen explanatory variables and explore potential causal mechanisms underpinning the observed quantitative results.

The questions focused on the process of director selection, especially the dynamics surrounding the appointment of female directors beyond the first one. In line with prior studies of director selection (e.g., Clune et al., 2014), the interviewees noted two distinct pathways of director selection: One wherein the nominating committee screens candidates before bringing a final choice to the board at large, and one wherein TMT members—typically the CEO—bring a recommendation to the board at large. For example, several directors indicated that they were directly recruited by the CEO due to a previous professional relationship.

Notably, several female interviewees indicated that when they were the first female on the board, their gender was a “bonus,” and one interviewee described a Fortune 500 firm that added women to an all-male board due to strong pressure from institutional investors. On the other hand, when there was already a woman on the board, interviewees focused on internal dynamics, such as skillsets and fit. Additionally, several interviewees noted that there is an important qualitative difference between having one female director and more than one due to the difficulties of being in the minority of a group. For example, one interviewee stated: “One woman in the room is really a very challenging minority position to put somebody in. I think having more than one is the important way to go if you want to hear that voice. I don't think you have gender diversity on a board when you have one female and eleven men.”

In terms of adding more women to the board beyond the first one, our interviewees indicated that the CEO can play a considerable role, as “the CEO lobbies for candidates and often has voting power.” If the CEO values gender diversity, then “you see it in their [top] management team,” and the CEO will also push for gender diversity on the board. “The CEO hires the TMT, so the composition of the team actually reflects the CEO's explicit or implicit preference for gender diversity. The more women you find on their team, the more likely it is that the CEO has a

gender-balanced approach, so they will be more likely to lobby or vote for women directors.” That is, because the CEO has substantial influence in hiring the rest of the TMT (Kotter, 1982), a higher number of women on the TMT shows that the CEO puts greater emphasis on gender diversity. Thus, the positive effect of female top managers on additional female director appointments observed in our quantitative results appears to be driven by the CEO's preference for gender diversity throughout the organization, as the CEO is the member of the TMT with the most influence over director appointments.

Several interviewees noted that when directors are selected through the nominating committee, having a female on the committee changes the dynamics by making the search for director candidates “more robust” and “broader.” This can entail ensuring that there are more females on the initial list of candidates, or as one director put it, “at the beginning of the funnel. When you're casting the net for candidates, a female representative on the nominating committee really pushes for good representation of female candidates.” Another interviewee mentioned that if the initial list of candidates contains only male candidates, a female on the nominating committee might be “way more focused [than the men] on why there aren't any women on the list,” and then seek to add some. Research has shown that having only one woman in a candidate pool means that there is a statistically insignificant chance of her being selected for the position, whereas having just two improves the odds substantially (Johnson, Hekman, & Chan, 2016). Hence, the observed positive effect of a female on the nominating committee likely occurs because the female member instigates the nominating committee to consider more women when searching for director candidates, resulting in better odds of actually appointing a woman. With an all-male committee, members might fall back on their male-dominated personal networks.

Our interview data also shed light on the role of age in the appointment of additional female directors. Interviewees noted that older individuals in corporations (usually men) can have implicit biases against adding more women to the board, so age becomes “extremely important” (according to one interviewee) when considering board gender diversity. As another of our interviewees put it, “for the older crowd, I think that there is a bit of a bias—likely unconscious—toward people that look like them and have had the same experiences as them. They tend to favor current and ex-CEOs, which by definition excludes a lot of high-quality, capable women.” Older board members may be less aware of the importance of gender diversity within organizations and unconsciously biased toward male board candidates who share their demographic attributes and experiences (Green, 2018).

Even when there is a female on the nominating committee, she might not always feel comfortable about “pushing back” on her colleagues' biases, especially considering that female directors tend to be younger and may not wish to start conflict with older or more experienced males on the committee. Conversely, according to one interviewee, “younger people are much more open to it [women serving on boards], much more comfortable with it.” Overall, the amplifying (dampening) effects of younger (older) boards and nominating committees seem to stem from differences in how gender diversity is viewed. Younger individuals may generally be more aware of the importance of gender diversity and more likely to have had exposure to female strategic leaders. Conversely, older individuals would have had less exposure to female strategic leaders and would have spent the majority of their careers during times when gender diversity was not a pressing social issue.

4.2 Potential theoretical mechanisms

The exploratory nature of our study is not amenable to providing definitive answers as to which mechanisms dominate the observed effects, but prior literature, our interviews, and our empirical analyses *do* provide some guidance toward pinpointing the underlying drivers, which we discuss next.

4.2.1 Gatekeeping

The board of directors serves two key functions: monitoring and resource provision. According to agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976), directors perform a monitoring role by ensuring that the strategic decisions taken by TMT members are aligned with the fiduciary interests of shareholders. As for resource provision, directors bring certain resources, such as knowledge, access to capital, or legitimacy to firms on whose boards they serve (Pfeffer & Salancik, 1978). As such, incumbent directors are often entrusted by owners to be gatekeepers of the appointment of new directors (Terjesen et al., 2009). Similarly, CEOs are entrusted primarily as gatekeepers of the TMT (Dwivedi et al., 2018), but as we have discussed, CEOs also frequently act as gatekeepers for the board of directors (Leblanc & Gillies, 2005; Westphal & Zajac, 1995; Zhu & Westphal, 2014). Gatekeepers are individuals or groups who control others' access to prestigious positions (Dwivedi et al., 2018); in this case, the board of directors.

Gatekeeping helps explain our quantitative findings. CEOs can act as gender-inclusive gatekeepers to help female CEOs who succeed them (Dwivedi et al., 2018). Our quantitative findings and interview data show that CEOs can also use their gatekeeping power to shape the composition of the TMT and board in a gender-inclusive fashion. In fact, one interviewee noted that "... they [CEOs] become somewhat of a gatekeeper for this [director selection] process." If gender diversity is important to the CEO, the TMT will tend to reflect such a preference, and the CEO will also be more likely to deploy his or her gatekeeping responsibilities regarding board appointments toward female director candidates. As another of our interviewees noted, if the company and CEO are "more progressive generally, you see it in their [top] management team as well as in their board." This notion is consistent with Zhang and Qu's (2016, p. 1849) argument that "if a firm has other female leaders in its upper echelon, it demonstrates that women are valued and can perform as well as men in the firm's leadership positions."

CEO power—at least when operationalized using traditional proxies—did not seem to affect the likelihood of appointment of additional females to the board. One reason for this finding might be that CEOs are, by default, powerful organizational gatekeepers, and the traditional power indicators do not change their already significant informal influence over the director selection process when it comes to supporting the appointment of female directors. Yet another aspect to consider could be the nature of CEOs' influence. The informal manner by which CEOs influence director selection suggests such influence could be idiosyncratic. For instance, as an interviewee noted, some CEOs barge into the boardroom and vehemently announce who they want to see on the board, while others may leverage different—and often quite subtle—sources of power (Finkelstein et al., 2009), which traditional proxies may have failed to capture. Although the

CEO can be an important channel of director selection because he or she may suggest candidates, the board at large votes on the CEO's choice of candidate before presenting the candidate to shareholders, making all directors gatekeepers of this process as well. Older men on boards may be more likely to view lobbying from the CEO in favor of additional female directors as political and use their gatekeeping power to resist these efforts.

Directors on the nominating committee are also important gatekeepers for board appointments. Given the apparent latent bias in favor of male director candidates, the inclusion of a female on the nominating committee could disrupt past gatekeeping practices of favoring male board candidates when vacancies arise. As several of our interviewees indicated, female nominating committee members change the director selection dynamics within the nominating committee by ensuring a broader search that includes more female candidates. According to a corporate governance consultant who routinely runs director workshops, a “disproportionate number” of women take part in director training events, so they learn the best practices of corporate governance (such as the importance of diversity), and “they're more aware of the role of the nominating committee vis-à-vis board succession planning.” During the director selection process, “a female committee member is likely to suggest female colleagues and ensure that candidates include a reasonable gender balance.” Thus, when the sole female director serves on the nominating committee, she likely becomes an important gatekeeper for potential additional female directors by ensuring a robust search for director candidates that includes a sufficient number of women.

Having a female director as chair of the nominating committee did not seem to affect the likelihood of appointing additional female directors. However, female directors' tenure on the board seemed to positively moderate their influence (to a modest degree) when they served on the nominating committee (see Table S1). As with the CEO, informal power may therefore also play a role within the nominating committee. However, a female director might find it difficult to broach gender diversity when surrounded by mostly older men, who might use their gatekeeping power to favor male candidates. It could be that as female directors accumulate more board tenure (up to a point), they are in a better position to steer the director selection process toward at least including, if not selecting, female candidates. In sum, the aforementioned evidence leads us to believe that gatekeeping mechanisms can explain the observed positive effects of female top managers (as an expression of CEO preference for gender diversity) and female nominating committee members on additional female director appointments. However, gatekeeping offers limited insights into *why* younger and older boards/nominating committees would differ significantly in how gatekeeping power is used. Given the suggestions that people of different ages have different experiences affecting their views of gender diversity (e.g., Green, 2018; Singh & Vinnicombe, 2004), we turn to social psychology for potential explanations.

4.2.2 Social psychology

Under the social psychology umbrella, social categorization has often been applied to studies of gender diversity in upper echelons (e.g., Lyngsie & Foss, 2017; Westphal & Zajac, 1995; Zhu & Westphal, 2014). At its core, social categorization theory argues that individuals have a strong tendency to see themselves as belonging to social groups based on categorizations such as gender, age, and race, and that belonging to a social group facilitates individuals' ability to make

sense of their environment by minimizing uncertainty and the need to process information (Tajfel, 1982). As a result, individuals tend to view those in their perceived group(s) more favorably than those outside their perceived group(s). Social categorization dynamics could reveal why younger boards and nominating committees amplify the effects of female top managers and female nominating committee members, respectively, whereas these effects do not hold for higher average ages in each group. Because women make up a much larger proportion of younger directors (those under 50) than older directors (PwC Report, 2018), younger individuals on boards and nominating committees may view (typically younger) female board candidates as part of their “group” of younger people and therefore be predisposed toward appointing them to the board. This helps explain why another interviewee mentioned that younger directors seemed more “open” to and “comfortable” with appointing female directors. Conversely, older, male directors would not view them as part of their group, and therefore prefer older candidates, who tend to be male. As one interviewee noted, older male directors tend to favor people with similar appearances and life experiences. Indeed, their professional networks are often dominated by other older men (Singh & Vinnicombe, 2004), providing a convenient pool from which to draw director candidates.

Social categorization is not a theory of change per se, but intergroup contact theory is a related lens that seeks to explain how prejudices between different groups of people are reduced (Pettigrew, 1998; Pettigrew & Tropp, 2006). Given that biases against women has been identified as a barrier to board gender diversity (Gabaldon et al., 2016), such a lens is useful in understanding why such biases might change. A key insight of intergroup contact theory is that if individuals have biases toward a certain group of people, these biases can be lessened through exposure to individuals from that group (Pettigrew & Tropp, 2006). Applied to our context, this perspective helps explain why individuals of different ages would affect CEOs' and female nominating committee members' influence on additional female director appointments. As discussed, female directors generally tend to be younger (PwC Report, 2018), pointing to increased representation of female corporate leaders in more recent times. Thus, younger male directors and committee members are much more likely to already have significant exposure to women leaders in the workplace because they started their careers at times when females were increasingly becoming leaders in corporations, and they are therefore more likely to view women as equal to men in terms of their career abilities (e.g., Donnelly et al., 2016). As a result, they may be more likely to use their gatekeeping power to support the appointment of additional female directors, which is particularly important considering that men almost always make up the majority of corporate boards. Conversely, older male board members tend to have limited exposure to female corporate leaders (Singh & Vinnicombe, 2004), and therefore fewer opportunities for any unconscious bias to abate.

It is possible that social psychology could also explain the positive main effects of female top managers and female nominating committee members. For example, women in these groups may push for greater representation of other women whom they consider as part of their group. Alternatively, some studies have suggested that gender-based group categorizations break down once one or more members of the out-group are present (Hogg & Terry, 2000; Lyngsie & Foss, 2017; Zhang & Qu, 2016). If women on the board or nominating committee have equal status and qualifications as men and cooperate to work toward common goals, then biases should decrease (Allport, 1954), somewhat paradoxically reducing the importance of categorizations as

more out-group members are present. This is an interesting insight that future researchers could explore in the context of gender composition in upper echelons. However, because our interview data did not indicate such dynamics, we believe gatekeeping provides a more compelling explanation of the main effects in our study, explicating the processes and channels of *how* additional female director appointments occur, in that CEOs and nominating committees are vested with informal and formal responsibility for board appointments. On the other hand, a social psychology perspective reveals *why* particular gatekeepers may have the attitudes they do about gender diversity, which then influences how they deploy their gatekeeping powers.

5 IMPLICATIONS AND CONCLUSION

5.1 Implications for research

This study entails several implications for research on board gender diversity. Whereas previous research has focused on the *outcomes* of increased levels of board gender diversity (e.g., Jia & Zhang, 2013; Konrad et al., 2008; Torchia et al., 2011), our study reveals important *antecedents* of achieving increased levels of board gender diversity. An understanding of what leads to meaningful levels of gender diversity on boards is required if firms are to increase female director representation and experience the resulting outcomes. In general, our findings and discussion of possible drivers suggest a theory of “the right people in the right places in the organization” with regards to how firms can improve board gender diversity. That is, gatekeeping explains that the “right places” in the organization are the CEO/TMT and the nominating committee, as these are the most important channels through which director selection occurs. The “right people” (those who would be likely to advance gender diversity) are CEOs who prioritize gender diversity (as reflected by females in the TMT), females on the nominating committee, and younger directors on the board and nominating committee, because they are more likely to support additional female director appointments brought forth by the CEO or nominating committee, respectively.

Unlike earlier studies that painted an opportunistic picture of CEOs' role in the director selection process (Westphal & Zajac, 1995), our findings show that CEOs can be important change agents for organizational gender diversity. To further unpack this aspect of CEOs, we need more qualitative or otherwise fine-grained studies that investigate the *how* of CEO influence on board gender diversity. For example, an investigation of specific tactics that CEOs use to convince directors to support female board candidates would be a fruitful inquiry within the director selection literature.

Likewise, little is known about the dynamics within nominating committees during the director selection process (for one of the few in-depth studies, see Clune et al., 2014). Recent evidence shows that female directors are less likely than men to be appointed to key committees (Knippen, Shen, & Zhu, 2019). Yet, our empirical results show that having a female on the nominating committee has the single largest effect on increasing board gender diversity. Thus, a key contribution of this study is the demonstration of the importance of gender representation on the nominating committee for improving board gender diversity. Whereas external pressure directed at increasing board gender diversity may have limited effects (Knippen et al., 2019), pressure to put an existing female director on the nominating committee might indirectly improve board

gender diversity. However, with older committees, it may be difficult for female nominating committee members to persuade others on the committee to select female director candidates. Because younger nominating committees amplify the effect of having a woman on the committee, external pressure to recruit younger directors to serve on the board and nominating committee could indirectly have a stronger effect on improving board gender diversity than direct external pressure to appoint female directors.

Finally, given the paucity of theory within this stream of literature (Terjesen et al., 2009), our study also suggests that board gender diversity research can progress by investigating gatekeeping and social psychology dynamics within the strategic leadership of the firm, and particularly within groups influencing the director selection process. Although institutional theory provides an explanation for the appointment of the first female director (Hillman et al., 2007; Konrad et al., 2008), institutional pressures do not seem to matter much when it comes to appointing additional female directors. A recent study concluded that external pressure to improve a firm's board gender diversity has a limited effect on improving board gender diversity (Knippen et al., 2019). Our study suggests that CEOs, female top managers, and female nominating committee members may be more effective mechanisms to improve board gender diversity, especially among younger directors. Consequently, research of meaningful levels of board gender diversity ought to look inside the firm rather than outside.

5.2 Practical implications

Our results also have important implications for practitioners. Whereas some studies point to female director appointments primarily as a reaction to external pressures (e.g., Knippen et al., 2019), our study illustrates active steps that managers and others can take to improve board gender diversity. CEOs can be change agents by actively hiring more female top managers and lobbying in favor of female board candidates. In firms with only one female director, board chairs should consider assigning the sole female director to the nominating committee. To enhance board gender diversity outcomes, younger directors should also be recruited to serve on the board at large and/or the nominating committee. A further recommendation would be to encourage gender-inclusive leadership on the part of the CEO and gender diversity on the TMT, such as by requiring CEOs to disclose and justify the gender makeup of the TMT in annual reports.

6 LIMITATIONS AND CONCLUSION

Our study is subject to certain limitations that could provide additional fruitful directions for future studies. First, because nominating committees are not always mandatory for firms located in other countries (Abdullah et al., 2016), the data for our study came from U.S. firms. Consequently, we acknowledge that this could limit the generalizability of our findings to firms located in other countries. Future research would benefit from exploring the implications of female strategic leaders in non-U.S. firms (Bazel-Shoham, Lee, Rivera, & Shoham, 2017; Koveshnikov, Tienari, & Piekkari, 2019). Second, although we paired insights from our interviews with quantitative data, we did not interview individuals within the firms in our quantitative sample. Fortunately, our sources were very knowledgeable about our phenomenon of interest. With the knowledge that male CEOs and female nominating committee members

affect additional female director appointments, future research could investigate what differentiates male CEOs who prioritize gender diversity versus those that do not, as well as the processes of increasing gender diversity. Qualitative research designs could be applied to understand the interpersonal dynamics of how CEOs and female nominating committee members lobby for female directors. For example, are there certain skills or personality traits that make such gatekeepers more persuasive? Additionally, because of the important ramifications of the nominating committee in the female director selection process, more in-depth studies of committee assignments are needed. Despite these limitations, our findings suggest that strategic leaders influencing the director selection process act as gatekeepers in achieving more meaningful levels board gender diversity. This study advances our understanding of why some boards remain limited in their gender diversity, while others make important strides to improve it.

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APPENDIX: Additional Analyses

Table A1
Generalized estimating equation predicting the effects of selected female director power indicators on the appointment of additional female directors

Constant	-3.06 (2.67) [0.25]
Industry norms	1.04 (0.91) [0.26]
Firm size	0.14 (0.14) [0.30]
Firm performance	0.01 (0.01) [0.64]
Unrelated diversification	-1.07 (0.99) [0.28]
CEO duality	-0.02 (0.34) [0.95]
CEO tenure	0.01 (0.03) [0.56]
Female CEO	1.23 (1.27) [0.33]
TMT size	-0.19 (0.07) [0.01]
Board size	0.41 (0.08) [0.00]
Board independence	0.01 (0.02) [0.67]
Interlocking female directors	0.05 (0.03) [0.12]
Board age	-0.08 (0.04) [0.07]
Female top managers	0.54 (0.18) [0.00]
Female on nominating committee	0.75 (0.68) [0.27]
Female chair of nominating committee	-0.26 (1.21) [0.83]
Female director tenure	-0.43 (0.21) [0.04]
Female on nominating committee X female director tenure	0.34 (0.21) [0.10]
<i>Wald Chi²</i>	64.12 [0.00]
<i>N</i> (Firm-years)	726

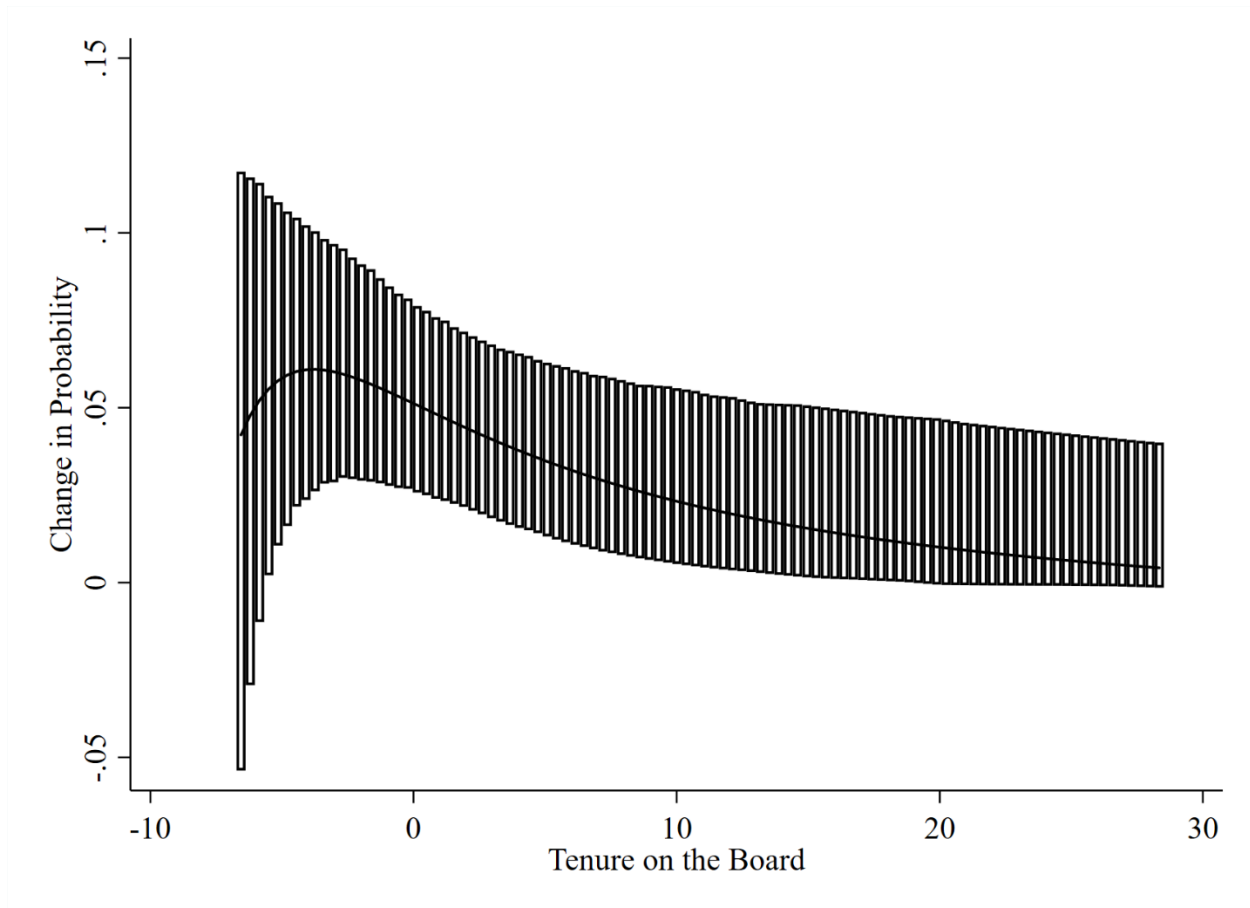
Note: Two-tailed tests. Unstandardized coefficients are shown representing changes in the log odds of the dependent variable's occurring. Standard errors are displayed in parentheses. P-values are in brackets. Values are truncated to two decimal places.

Table A2**Generalized estimating equation predicting first female director appointment**

Constant	-8.26 (2.19) [0.00]
Industry female directors	0.12 (0.05) [0.01]
Industry female executives	0.06 (0.02) [0.01]
Firm size	0.22 (0.12) [0.06]
Firm performance	0.00 (0.01) [0.78]
Unrelated diversification	0.59 (0.73) [0.42]
CEO duality	0.19 (0.29) [0.51]
CEO tenure	0.00 (0.02) [0.90]
Female CEO	3.22 (1.28) [0.01]
TMT size	0.01 (0.06) [0.82]
Board size	0.17 (0.07) [0.02]
Board independence	0.00 (0.01) [0.88]
Interlocking female directors	0.07 (0.04) [0.08]
Board age	0.01 (0.03) [0.64]
Female top managers	0.06 (0.18) [0.73]
<i>Wald Chi²</i>	49.93 [0.00]
<i>N</i> (Firm-years)	874

Note: Two-tailed tests. Unstandardized coefficients are shown representing changes in the log odds of the dependent variable's occurring. Standard errors are displayed in parentheses. P-values are in brackets. Values are truncated to two decimal places,

Figure A1
Effect of female director on the nominating committee and female director tenure on the appointment of additional female directors



Note: The vertical axis represents the change in probability of appointing additional female directors when firms went from no female on the nominating committee to having a female on the nominating committee. The horizontal axis represents how this change in probability varies according to the board tenure of the female nominating committee member, centered around the mean. Vertical bars represent 95% confidence intervals.