European Management Review (2010) 7, 16–29

palgrave-journals.com/emr/

Women directors' contribution to board decision-making and strategic involvement: The role of equality perception

Sabina Nielsen[1], Morten Huse[2]

[1]Department of International Economics and Management, Copenhagen Business School, Frederiksberg, Denmark and University of Technology, Sydney, Australia; [2]BI Norwegian School of Management, Oslo, Norway and Tor Vergata University, Rome, Italy

Correspondence:
Sabina Nielsen, Department of International Economics and Management, Copenhagen Business School, Porcelanshaven 24a, Frederiksberg 2000, Denmark.
Tel: +4538152524;
Fax: +4538152400;
E-mail: sta.int@cbs.dk

Abstract
In times of vivid debates about the role of women on corporate boards, this article investigates the contribution of women directors to board decision-making and strategic involvement. Based on survey data from multiple respondents in 120 Norwegian firms, we find that women directors influence board strategic involvement through their contribution to board decision-making, which in turn depends on women directors' professional experiences and the different values they bring along. Drawing upon stereotype threat theory, we further find that perception of women as unequal board members may limit their potential contribution to board decision-making.
European Management Review (2010) **7,** 16–29. doi:10.1057/emr.2009.27
Keywords: women directors; board decision-making; board strategic involvement; equality perception

Introduction

The number of women in board positions has increased significantly over the last decade (Helfat *et al*., 2006; Vinnicombe *et al*., 2008). Previous studies have examined how women directors facilitate board appointments through CEO ingratiation (Westphal and Stern, 2006) or gain influence through experience and network ties (Westphal and Milton, 2000). However, few prior studies examine how women directors exercise such influence and make an actual contribution to the work of boards (Terjesen *et al*., 2009). The few empirical studies that investigate the impact of women representation on boards generally test for a direct relationship between the ratio of women directors and corporate performance. Such studies provide mixed evidence; some find a positive relationship (Carter *et al*., 2003; Erhardt *et al*., 2003), while others find no significant or even negative relationships (Shrader *et al*., 1997; Rose, 2007). A possible explanation for the contradictory findings is the lack of attention to intermediate variables, such as board processes and board tasks that help explain the effects of board composition on corporate performance (Zahra and Pearce, 1989; Forbes and Milliken, 1999). The present study addresses this gap in research by focusing on women directors' contribution to board decision-making and ultimately board strategic involvement.

Corporate directors are regarded as a valuable source of knowledge and expertise for formulating and assessing firm strategic decisions (Zahra and Pearce, 1990; Pearce and Zahra, 1991; Judge and Zeithaml, 1992). Hence, directors are expected to make an important contribution to different phases of a firm's strategic decision-making (Rindova, 1999; Pugliese *et al*., 2009). While prior research has linked board job-related diversity (e.g. diversity in functional, educational and industry background) to firm strategy (Goodstein *et al*., 1994; Golden and Zajac, 2001), no studies have linked board gender diversity to strategic decision-making. Assuming that women bring different professional experiences than men (Hillman *et al*., 2002) as well as have different underlying values (Selby, 2000), it can be expected that this diversity will influence board decision-making. However, prior research has generally only accounted for the presence of women directors on corporate boards but not for their characteristics as well as actual behavior. In this article, we recognize that differences exist among women (Kanter, 1977) and advocate that it is not the gender *per se*, but the different values and professional experiences

that women may possess that enable them to make a difference to actual board work and influence board decision-making. Similar to Westphal and Milton (2000), we define women's contribution to board decision-making as their 'influence or impact on strategic decision-making' (p. 376) and propose that women's characteristics (e.g., values and prior professional experiences) are likely to determine such influence.

At the same time, we recognize that the actual contribution of women directors is a function not only of their characteristics, but also of the possibilities that the board offers for women to make a difference. This is a matter of equality perceptions. For instance, the presence of women directors on corporate boards is highly controversial. Some studies demonstrate that despite similar competencies women do not advance to board positions at the same rates as men (Daily *et al.*, 1999; Helfat *et al.*, 2006; Terjesen *et al.*, 2008), while others question women's ability to contribute to board tasks which are predominantly male value-oriented (Schein, 1973; Burke, 2000). Burke (2000) reports that a common assumption exists among those responsible for director selection, that women lack adequate competencies for board positions. Building on stereotype threat theory (Steele and Aronson, 1995; Steele, 1997), we argue that the perception of women directors as non-equal board members can significantly reduce the potential for women to contribute to board decision-making, regardless of their values and experiences. The fear that one's behavior will confirm an existing gender stereotype has been shown to adversely affect performance (Bergeron *et al.*, 2006). Similarly, we argue that when made salient in the context of corporate boards, gender stereotypes may limit the potential for women to exert influence and may harm women directors' contribution to the work of boards.

This article extends previous theoretical and empirical work on board gender diversity in several ways. First, we recognize that significant differences exist among women directors. Instead of investigating the effect of gender *per se*, we focus on how the different professional experiences and values of women can help increase their influence on boards and enhance decision-making. We argue that it is not the gender of women directors, but rather the unique resources individual women directors bring along, which may help them exercise their influence on the work of corporate boards. Second, we propose the construct of women directors' contribution to board decision-making as an important mediator in the relationship between board composition and board strategic involvement. Adams and Ferreira (2008: 12) assert that 'for gender diversity to have an impact on board governance, it is not sufficient that female directors behave differently than male directors. Their behaviour should also affect the working of the board'. Accordingly, we suggest that women's impact on board strategic involvement can only be discerned by investigating the extent to which they exert influence on the way the board conducts business and the issues discussed. Finally, we apply stereotype threat theory in the context of board gender diversity and emphasize the role of women equality perception in leveraging women directors' unique resources for improving board decision-making and strategic involvement.

We use multiple respondents design and multilevel methodology in order to test our hypotheses based on a survey conducted among 392 board members and CEOs from 120 Norwegian companies. Norway is a particularly interesting context to study the effects of women directors on board decision-making and effectiveness due to the recent law that requires 40% of the members of the boards of publicly listed companies to be women. The law came into force in January 2006 and companies that did not comply with the law by January 2008 were threatened to be closed down (Besl. Ot. nr 18, 2003–2004; Huse, 2007: 91–95; Hoel, 2008). Given political and social pressures to increase the number of women directors as well as the changing demographics of the workplace in general, the results of this study may have important implications for corporate boards as well as policy-makers.

Theoretical background

The consequences of diversity

Diversity is often characterized as a 'double-edged sword' or a 'mixed blessing' (Milliken and Martins, 1996; Williams and O'Reilly, 1998) as it has both positive and negative effects on team functioning and performance. The information/decision-making perspective suggests that variation in group composition leads to an increase in the skills, abilities, knowledge and information of the team as a whole. Such an increase significantly enhances decision-making as the different views and perspectives of diverse team members lead to in-depth discussion and consideration of different alternatives (Watson *et al.*, 1993). Hence, diversity leads to generation of more alternative solutions to a problem, more thorough evaluation of different options and results in superior decision-making (Williams and O'Reilly, 1998). By the same token, Nemeth (1986) argues that the quality of reasoning in majority opinions is enhanced by the consistent counterarguments presented by minority team members. Milliken and Martins (1996) refer to the positive effects of diversity on the group's ability to process information, perceive and interpret stimuli, and ultimately make decisions as cognitive consequences of diversity. In general, information/decision-making theories put forward that team diversity increases group creativity (Hoffman and Meier, 1961).

At the same time, social identification (Turner, 1982) and social categorization theories (Tajfel, 1981; Turner, 1987) suggest that diversity may have a negative influence on team dynamics and performance. According to these theories, individuals define their own identities through social comparison with others. In the process of social categorization, individuals divide group members into in-groups and out-groups based on perceived similarity/dissimilarity of others. In order to maintain high levels of self-esteem people have the tendency to positively perceive and favor in-group members (those similar to themselves) and dislike and judge out-group members (those who are dissimilar). As a consequence, team diversity results in negative affective consequences such as decreased identification with the group, lower satisfaction etc. (Milliken and Martins, 1996). Such negative effects are more pronounced for gender and race diversity, on which

social categorization usually occurs, than, for instance, functional and educational background diversity, indicating that they might be a result of deep-seated prejudices and stereotypes.

Gender stereotypes and stereotype threat theory

The extent to which gender predicts differences in leadership behavior and effectiveness is highly debated in the literature. Arguments for gender-based differences are grounded in (1) assumptions about the values, traits and skills required for effective leaders (implicit theories); and (2) assumptions about inherent differences between men and women (gender stereotypes) (Yukl, 2002). Traditional gender stereotypes state that men are more masculine (e.g., more self-reliant, aggressive, competitive, decisive) while women are more feminine (e.g., sympathetic, gentle and sensitive to the needs of others) (Powell, 1990). At the same time, the predominant belief among both men and women is that effective leaders possess values and characteristics that are typically viewed as masculine (Schein, 1973). As a result, women are evaluated as less effective leaders even if they behave in exactly the same manner as men (Eagly *et al.*, 1992).

Stereotype threat theory (Steele and Aronson, 1995; Steele, 1997) suggests that the fear that one's behavior may confirm an existing stereotype of a group with which one identifies may have a negative impact on performance. Particularly when a fixed biological characteristic, such as race or gender, is emphasized in a certain context, subsequent performance is adversely affected. Steele and Aronson suggest that 'culturally-shared stereotypes suggesting poor performance of a certain group can, when made salient in a context involving the stereotype, disrupt performance of an individual who identifies with that group' (1995). Hence, the existence of stereotypes is likely to affect the behavior of women and can actually undermine their performance (Bergeron *et al.*, 2006). Stereotype threat has previously been shown to explain the academic underperformance of women in math (Spencer *et al.*, 1999) and the academic underperformance of black students in test situations (Steele and Aronson, 1995).

Hypotheses

How do women directors differ?

One of the unanswered yet intriguing questions is whether gender stereotypes are substantiated by actual differences between women and men. Some argue that gender stereotypes are not applicable to women who pursue managerial careers (Powell, 1990). Eagly and Johnson (1990) conducted a meta-analysis of studies on gender differences in leadership and found that participative leadership was used more by women than men but no gender differences existed in the use of task-oriented behavior or supportive behavior. A subsequent meta-analysis (Eagly *et al.*, 1995) further revealed that there were no overall differences in effectiveness of male and female managers and concluded that gender *per se* is unlikely to be a predictor of leadership effectiveness. Hence, it is necessary to look beyond gender to determine what other characteristics determine women directors' individual behavior. Based on a review of the existing literature, we identified two types of characteristics through which women directors may exert influence on board decisions; namely women directors': (1) non-traditional professional experiences (Burke, 2000; Hillman *et al.*, 2002; Singh *et al.*, 2008); and (2) different values (Selby, 2000). Accordingly, we conceptualize and empirically assess how the differences in women's values and professional experiences may impact their influence on board decision-making.

Women directors' values

A substantial body of research has revealed some consequential gender differences in values and attitudes (Eagly, 2005). Research has shown that men and women differ ideologically, especially in terms of women's greater compassion (Beutel and Marini, 1995) and men's greater tolerance for ethical lapses and endorsement of morally non-traditional social policies (Eagly *et al.*, 2004). A meta-analysis by Franke *et al.* (1997) revealed that men were less likely to perceive specific business practices, such as insider trading, as unethical. Hence, women joining predominantly male groups are likely to bring along different values and attitudes which may result in higher value diversity, thus increasing the level of debate and generation of alternatives in the board room. Such differences may be crucial for the board's ability to steer corporate strategy and exert control over management as a guardian of the shareholders' interests. According to this view, Adams and Ferreira (2008) found that gender diverse boards allocate more effort and are more effective in monitoring management.

From an information-processing/decision-making perspective, diversity in values may bring a number of benefits to team decision-making (Meglino *et al.*, 1992; Harrison *et al.*, 2002). Diversity in values may help enhance board decision-making by increasing the number of alternatives considered, the quality of ideas as well as different aspects of the issues at hand. Letendre (2004) proposes the idea of 'value in diversity' and argues that women board members will bring diverse viewpoints to the boardroom and will provoke lively boardroom discussions. Boards with women members who have different values are more likely to consider counter-arguments regarding the decisions to be made. Furthermore, women directors who have different values are more likely to question the conventional wisdom and to speak up when concerned or in doubt about an issue or a particular managerial decision (Bilimoria and Huse, 1997; Huse and Solberg, 2006). Similarly, Pearce and Zahra (1991) found that boards with higher ratios of women, characterized as participative boards, were more likely to engage in debates and disagreement and were associated with higher perceived and objective firm performance. Hence, we predict that:

> **Hypothesis 1:** The difference in women directors' values is positively associated with women's contribution to board decision-making.

Women directors' backgrounds

Previous research suggests that the influence of women on the work of corporate boards may well depend on the

qualifications they bring along (Peterson and Philpot, 2007). A number of empirical studies show that women directors differ from their male counterparts in terms of their prior professional experiences as they have non-traditional backgrounds (Singh *et al*., 2008). Women directors are more likely to come from non-business backgrounds and hold more advanced degrees (Hillman *et al*., 2002). Furthermore, women directors rarely hold executive positions (Ruigrok *et al*., 2007) and those who do are seldom in a financial or an accounting function. Rather, women executives hold positions related to the 'soft' managerial issues, such as human resources, corporate social responsibility (CSR), marketing, advertisement etc. (Zelechowski and Bilimoria, 2006). Hence, women directors are likely to bring to the boardroom different backgrounds and experiences which have the potential to stimulate divergent thinking and enrich board decision-making (Burke, 1997).

According to the predictions of information-processing/decision-making theories, women directors who have different backgrounds offer unique perspectives that may help counter the conventional wisdom and increase consideration of a wider range of potential solutions (Milliken and Martins, 1996; Williams and O'Reilly, 1998). For instance, a woman with non-business background may be able to contribute to board decisions with state-of-the-art knowledge in technology developments (Selby, 2000). Furthermore, the different professional experiences of women can prompt divergent thinking not only about the primary topic of conversation but on related topics as well (Westphal and Milton, 2000). Hence, in accordance with the group diversity literature we hypothesize that:

Hypothesis 2: The difference in women directors' professional experiences is positively associated with women's contribution to board decision-making.

Equality perception

According to social categorization theory, gender is one of the major attributes on the bases of which people derive their identity. In the context of corporate boards that traditionally have been dominated by men and characterized as 'old boy's networks', women are likely to be perceived as out-group members. A commonly held assumption of board selectors is that women lack adequate human capital for board positions (Burke, 2000). This perception is likely to influence the evaluation of women's skills and abilities for a job which is traditionally perceived as male (Kanter, 1977). When women are perceived to be less suitable for the job, their level of competence in masculine sex-typed positions is questioned (Bergeron *et al*., 2006). Hence, women directors may be stereotyped as being less effective board members than men. Some evidence from corporate boards suggests that women directors feel constrained in their boardroom influence. They feel as if they don't have as much influence on critical decisions as do their male counterparts even though women may have the capabilities to make an impact on board decision-making (Bilimoria, 2000: 31). If women are perceived as unequal board members they will be given less opportunities to influence board decision-making.

Hypothesis 3a: The perception of women as unequal board members is negatively related to the contribution of women directors to board decision-making.

The social psychology literature on minority influence reveals skepticism about the extent to which demographic minorities can successfully influence group decision-making even when they bring valuable experiences and network ties (Westphal and Milton, 2000). Social barriers based on gender and ethnicity reduce the likelihood that minority viewpoints will be incorporated into group decision-making (Nemeth, 1986). Social categorization leads to stereotyping and more negative evaluation of the competences of out-group members (Miller and Brewer, 1996). Out-group bias, in turn, may lead majority directors to dismiss or devalue the input of demographic minorities (Mackie, 1987). Women directors assert that they are effective board members only if and when their colleagues listen to them (Bradshaw and Wicks, 2000). Hence, the extent to which women directors are able to make a contribution to board decision-making may depend on the presence of gender stereotype biases in the board room.

In addition, stereotype threat or the risk of confirming a negative gender stereotype may undermine women's contribution to board decision-making. Being aware of existing stereotype biases in the boardroom, women directors may be cautious about their appearance and behavior during board meetings. Hence, even when women bring along different perspectives which have the potential to enrich board decision-making, a negative perception of women as unequal board members will reduce this potential. This effect is likely to be more pronounced for diversity in women's values, as differences in values are more prone to gender-based stereotypes and biases. Hence, we hypothesize that the extent to which women's values will enhance board decision-making will be limited by the perception of women as unequal board members.

Hypothesis 3b: The relationship between the different values of women directors and women's contribution to board decision-making will be weaker when women directors are not perceived as equal board members.

Board strategic involvement

Board's strategic involvement relates to 'the board's involvement in and contribution to the articulation of the firm's mission, the development of the firm's strategy and the setting of guidelines for implementation and effective control of the chosen strategy' (Zahra and Pearce, 1989: 302). Rindova (1999) proposes that directors are experts who use the strategic problem-solving expertise they have developed in their primary occupations and provide cognitive inputs into scanning, interpretation and choice, the cognitive tasks through which strategic decision-making is carried out. Hence, in order to fulfill their strategy tasks, board members need to posses and apply their valuable knowledge and expertise.

Forbes and Milliken (1999) distinguish between the presence and *use* of skills and knowledge and argue that the board's ability to tap into the skills and knowledge available to it and then apply it to its tasks determines board

effectiveness. Specifically, 'board members must elicit and respect each others' expertise, build upon each others' contributions, and seek to combine their insights in creative, synergistic ways' (1999: 496). Accordingly, active participation of women directors in and their contribution to board decision-making may enhance board strategic involvement. We hypothesize that women directors' contribution to board decision-making may influence board strategic involvement and suggest that the higher women directors' influence on board work, the more likely is that the board will enhance firm strategy.

Hypothesis 4: Women directors' contribution to board decision-making is positively related to board strategic involvement.

Method

Data collection and sample

Our initial sample consisted of (1) all firms listed on the Oslo Stock Exchange; (2) all other publicly traded firms; and (3) private joint stock companies with more than 50 employees. The list of companies was obtained from the Dun & Bradstreet database in 2004. In October 2005, two separate survey questionnaires were distributed to the CEOs and the chairpersons of the total of 1655 sampled firms. After three rounds of postal reminders, 480 CEO questionnaires were returned, yielding a response rate of 29% which is about the average response rate (32%) reported from similar studies surveying executives (Cycyota and Harison, 2006). A total of 302 board chairpersons returned the questionnaires.

In January 2006, we asked the CEOs of the firms for which either the CEO or the board chairperson had responded to the survey to distribute separate survey questionnaires to the members of the board. After two rounds of postal reminders and one phone reminder we received a total of 452 questionnaires. The results of the Mann-Whitney U-Test and the Kolmogorov-Smirnov test indicated no statistically significant differences between respondent and non-respondent firms in terms of size and profitability. As the questions regarding women directors were only answered if there were women on the board, we received 272 useful questionnaires from board members that were used together with the 120 questionnaires of the CEOs for the same firms. Excluding the questionnaires from firms with no women directors may result in selection bias, that is, including only these firms that are likely to have pre-existing preferences for diversity, and may potentially bias the results. In order to correct for this potential selection bias, we estimated a Heckman selection model.[1] As prior research (Hillman *et al.*, 2007) demonstrates that industry type, organizational size and diversification impacts the likelihood of female representation on boards, these three variables were included in the estimation as factors expected to determine the selection of an observation. All three variables were significant with the expected signs; however, the likelihood ratio test for $p = 0$ showed that we cannot reject the null hypothesis thus suggesting that estimation without taking selection into account will not yield inconsistent results. In the Heckman selection estimation, all hypothesized effects were significant and consistent with the results obtained from the multilevel analysis.

The majority of the measures have been employed or suggested in previously published top-tier journal articles (e.g. Pearce and Zahra, 1991; Forbes and Milliken, 1999; Hillman and Dalziel, 2003). The questions regarding women directors were based on previous empirical studies on the influence of demographic board minorities (Westphal and Milton, 2000) and women on boards (Fondas and Sassalos, 2000). In order to deal with potential common method bias (Doty and Glick, 1998), we applied a number of procedural remedies recommended by Podsakoff *et al.* (2003) in the instrument development and data collection phase. First, we invested considerable time and effort in improving the scale items and reducing item ambiguity. The survey instrument was developed and refined over several years (1990–2003), based on pilot surveys, various types of qualitative studies and full scale studies of the main measures in various countries such as Sweden, the Netherlands, Belgium, Italy and Turkey. In particular, we interviewed women directors about their board experiences and utilized their responses to refine our survey questions. In addition, we conducted a series of pilot studies using the survey instrument, followed by in-depth post-survey interviews in order to ensure general correspondence between the wording and understanding of survey items. Questions that were unclear, difficult to answer, or potentially subject to bias were eliminated. All survey questions were short, specific and used simple words to avoid ambiguous and vague formulations. Survey item responses were based on a 7-point Likert scale.

Second, we protected the respondents' anonymity by assuring confidentiality of their responses in the cover letter that accompanied the survey. Finally, in order to reduce self-report biases, we obtained measures from different respondents (Podsakoff and Organ, 1986), namely the CEO, the chairperson, and other board members. Three different questionnaires were sent out, one for each type of respondent. While most of the questions were the same, some of the questions (for instance the specific questions about women directors) were targeted at board members only while others were directed at the CEO. Hence, we obtained some of the measures from the board members questionnaires, others from the CEO responses and a few measures were based on aggregation of CEO, board chairperson and board member responses.

From the statistical remedies for common method bias suggested by Podsakoff *et al.* (2003), we first used the Harman's one factor test. The factor analysis of the 26 items measuring the perception of women characteristics, women's influence, and board effectiveness exhibited six factors with eigenvalues higher than 1.0, thus suggesting that the majority of the variance between the variables could not be accounted for by one general factor (common method variance). Second, we used partial correlation adjustment (Lindell and Whitney, 2001). All significant zero-order correlation coefficients remained significant, suggesting that common method bias was not a significant problem in our study.

Variables

In order to explore the nuances presented in our hypotheses the main independent variables were self-reported single-item-measures, while other variables were made by scales or indexes (see Table 3). Self-report measures are not constructed from a random sample of items from any domain and researchers almost always create items based directly on their explication of the construct under study (Hinkin, 1995). It is possible that one 'good' item can be better than many 'bad' items when evaluated on criteria of reliability and validity (Gardner *et al*., 1998; Nielsen and Nielsen, 2009). Empirically, it has been illustrated that where issues of response bias are paramount (such as is the case with board work, gender and values), it might be more appropriate to develop one (or a few) elaborate questionnaire items (e.g., Russell *et al*., 1989). Accordingly, the *difference in women directors' professional experiences* was assessed by asking the respondents about the extent to which women directors' professional experiences differed from those of male directors. The *women's different values* variable was measured with a single item assessing the difference in (perceived) values between female and male members of the board. Similarly, *women equality perception* was measured with one item assessing the degree to which women on the actual board are perceived as less valuable board members.

While most prior studies have focused on actual diversity, recent research has started to consider the effects of perceived dissimilarity between group members (Cunningham, 2007). Arguments brought forward by Turner (1987) and Riordan (2000) suggest that it is the perception of differences, not necessarily the actual differences themselves, that leads to subsequent attitudes and behaviors. Similarly, Lawrence (1997) argues that perceptions rather than reality influence work attitudes and involvement. Social categorization theory stresses that categorization processes occur on the basis of individual perceptions of similarity or dissimilarity with others. In the context of board research, Westphal and Milton (2000) note that it is important to distinguish between demographic differences (e.g. gender) and *perceived* similarity/dissimilarity between board members along other characteristics when discussing the potential influence of minorities on group decision-making. Consistently, we measure the perceived differences in women directors' values and professional experiences and how they influence women directors' contribution to board decision-making.

Women's contribution to board decision-making was measured with three items similar to the measures used by Westphal and Milton (2000). Specifically, the questions reflected the extent to which (1) women are equally active in discussions compared to men; (2) women have influenced the way the board conducts business; and (3) women have influenced which issues are considered by the board. The three items loaded to one factor with an eigenvalue of 1.22 and Cronbach's alpha of 0.69.

The dependent variable, *board strategic involvement* was measured in line with previous board studies (e.g. Zahra and Pearce, 1990; Pearce and Zahra, 1991; Judge and Zeithaml, 1992) using six different items regarding the board's evaluation of firm strategy in terms of (1) corporate social responsibility; (2) organization and human resources; (3) product quality; (4) health, environment and safety; as well as the boards contribution to firm long-term strategy by (5) suggesting long-term strategy; and (6) making long-term strategic decisions. The six items loaded onto the same factor with an eigenvalue of 2.56 and Cronbach's alpha of 0.80.

As Forbes and Milliken (1999) suggested that the directors' knowledge and skills as well as job-related diversity will influence board processes and effectiveness, we controlled for both factors. The degree of *board job-related diversity* is expected to increase board strategic involvement (Finkelstein *et al*., 2008) and was previously found to have an impact on firm strategy (Goodstein *et al*., 1994); thus, it was controlled for by using three items reflecting the diversity in board members' functional, educational and industry backgrounds. *Board members' knowledge* was operationalized through a six-item measure reflecting the board's knowledge of critical aspects of the company business. As suggested by Rindova (1999), board members' knowledge and expertise is an important cognitive resource increasing board strategic involvement. Consistent with prior research on women directors, we further controlled for the *ratio of women directors* to the total number of directors as a measure of gender diversity. We also controlled for a number of variables identified by Finkelstein *et al*. (2008) as important determinants of board strategic involvement. *Firm size* was measured as the number of company employees in year 2005, transformed into its natural logarithmic function. *Board size* was measured as the number of directors serving on the board. *Outsider ratio* is a variable expressing the ratio of the outside directors to the total number of directors. As a CEO who is also a chairperson may have greater insight into board work and dynamics, we further controlled for *CEO duality*. *Industry effects* were controlled for by the use of four dummy variables: (1) finance and real estate; (2) service; (3) industry and production; and (4) others. *Prior performance* was assessed with an item reflecting the degree to which the company has been experiencing financial crises, liquidity or similar problems during the past three years. Since the gender of the leader might influence the contribution of women directors to board decision-making, we controlled for *chairperson's gender* and *CEO gender*. The *respondent's gender* may introduce some bias and was also entered as a control. Finally, we measured *female appointments* as a dummy variable reflecting whether or not a woman director was selected last time a new member was added to the board. Women who have recently joined the board may have less influence on board work and decision-making compared to long tenured women.

Method of analysis

The multiple respondent research design allowed for utilization of a multilevel methodology (Snijders and Bosker, 1999; Raudenbush and Bryk, 2002), where individual board member responses are treated as lowest level 1 and board and firm level characteristics as level 2. In multilevel analysis it is important to pay due attention to the nested structure of the data and the lack of

independence among observations in order to avoid drawing wrong conclusions about observed relationships (Robinson, 1950; Klein *et al.*, 1994). We used a hierarchical linear model (HLM), which is an extension of a multiple regression that models variance at each level. HLM is defined by its statistical parameters: regression parameters (fixed effects) and variance components (random effects). The deviance index is typically used to assess model fit. The difference in deviance for two nested models is distributed as chi-square with degrees of freedom equal to the difference in the number of parameters. We further used the method suggested by Snijders and Bosker (1999) to calculate R^2 at each level of analysis.

Our empirical model can be expressed with the following two equations:

Level 1 (individual level):

$$\begin{aligned} Y_{ij} = {} & \pi_{0j} + \pi_{1j}\,(\text{women directors different professional experiences}) \\ & + \pi_{2j}\,(\text{women directors different values}) \\ & + \pi_{3j}\,(\text{equality perception of women directors}) \\ & + \pi_{4j}\,(\text{respondents gender}) + e_i, \end{aligned}$$

where e_i is the random error at the lowest level 1; π_{0j} is the average score of board strategic involvement across all members of the board.

Level 2 (board/firm level):

$$\begin{aligned} \pi_{0jk} = {} & \beta_{00} + \beta_{01}\,(\text{women ratio}) \\ & + \beta_{02}\,(\text{chairperson gender}) \\ & + \beta_{03}\,(\text{CEO gender}) \\ & + \beta_{04}\,(\text{female appointment}) \\ & + \beta_{05}\,(\text{CEO duality}) \\ & + \beta_{06}\,(\text{outsider ratio}) \\ & + \beta_{07}\,(\text{board size}) \\ & + \beta_{08}\,(\text{board knowledge}) \\ & + \beta_{09}\,(\text{board job} - \text{related diversity}) \\ & + \beta_{10}\,(\textit{firm size}) \\ & + \beta_{11}\,(\text{firm prior performance}) \\ & + \beta_{12}\,(\text{finance industry}) \\ & + \beta_{13}\,(\text{service industry}) \\ & + \beta_{14}\,(\text{manufacturing industry}) + r_{0j} \end{aligned}$$

where r_{0j} is the random error (variance) at the board/firm level 2; β_{00} is average score of board strategic involvement across all boards in the sample.

In order to test for the mediating effect of women's contribution to board decision-making we used the Baron and Kenny's (1986) procedure. First, the dependent variable is regressed on the explanatory variables (women characteristics) and the controls. Second, the mediating variable is regressed on the explanatory variables and the controls. Finally, to test for mediating effects, the intervening variable women directors' contribution to board decision-making is subsequently added together with the explanatory variable and the controls. This procedure, however, does not account for the possible reverse causality between the mediator and the dependent variable, that is, that high strategic involvement of the board may lead to higher contribution of women directors. Therefore, we conducted a two-stage least squares (2SLS) analysis in order to account for the possible reverse causality.[2] We used CEO gender as an instrument for women directors' contribution to board decision-making as it is (1) uncorrelated with the overall board strategic involvement but (2) highly correlated with women directors' contribution to board decision-making. Our results were robust to the 2SLS procedure.

Results

The firms in our sample had an average board size of 6.8 members. The average ratio of women on the boards was 28% and the number of women directors on the board ranges between 1 and 5. In 7% of the companies the chairperson was a woman; 4% of all firms in our sample had a female CEO. Sixty percent of our board member respondents were men. In terms of women's characteristics, the board members rated the values of women to be different (3.66 average on a 7-point Likert scale). The average score of difference in professional experiences of women board members was 4.25. Women directors' contribution to board decision-making was moderate (3.81 average score). However, it seems that the perception of women as unequal board members is rather low (1.92 average score). The descriptive statistics and correlations are reported in Table 1.

We found support for hypothesis 1 suggesting that women directors' different values are positively associated with women's contribution to board decision-making ($b = 0.19$, $P < 0.001$). However, contrary to our prediction in H2, we found that women's different professional experiences are negatively related to their ability to influence board work ($b = -0.09$, $P < 0.05$). Perception of women as unequal board members had negative direct effect on women directors' contribution (H3a: $b = -0.18$, $P < 0.001$), as well as a negative moderating effect on the relationship between women directors' different values and women directors' contribution to board decision-making (H3b: $b = -0.07$, $P < 0.05$). Finally, we found support for H4, as women's contribution to board decision-making was positively related to board strategic involvement ($b = 0.12$, $P < 0.05$). All three gender dummies, gender of the respondent, gender of the CEO and gender of the chairperson were negatively significantly associated with women directors' contribution to decision-making. Board size and board job-related diversity were positively associated with board strategic involvement (Table 2).

Discussion

In times of vivid debates about the role of women on corporate boards, this article contributes to both theory and practice by delving into women directors' contribution to board decision-making and ultimately to board strategic involvement. Based on the empirical evidence collected from multiple respondents of Norwegian corporate boards it can be concluded that: (1) the impact of women board

Table 1 Descriptive statistics: means, standard deviations and correlations*

	Mean	*SD*	*Min*	*Max*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1 Board size	6.78	1.51	3	12	1.00													
2 Outsider ratio	0.72	0.17	0	1	0.25	1.00												
3 Board ownership	14.64	26.68	0	100	−0.23	−0.18	1.00											
4 Women director ratio	0.27	0.13	0	0.67	0.18	−0.06	−0.10	1.00										
5 CEO duality	0.05		0	1	−0.20	0.02	0.05	−0.11	1.00									
6 Chair gender (male)	0.93		0	1	0.28	0.19	−0.01	−0.05	−0.12	1.00								
7 Respondent gender (male)	0.58		0	1	−0.02	0.01	0.08	−0.24	0.12	−0.12	1.00							
8 Female appointment	0.77		0	1	0.10	0.02	0.09	0.30	0.13	0.11	−0.02	1.00						
9 Firm size	5.08	1.48	0	8.85	0.47	−0.17	−0.23	0.06	−0.08	0.06	0.00	−0.06	1.00					
10 Firm prior performance	2.07	1.74	1	7	−0.02	−0.05	−0.03	0.06	−0.03	0.02	−0.04	−0.08	−0.07	1.00				
11 Knowledge main activities	5.83	1.04	1	7	−0.14	−0.07	−0.02	−0.08	0.05	−0.05	−0.02	0.04	0.04		1.00			
12 Knowledge technology and know-how	5.09	1.10	1	7	−0.02	−0.09	0.07	−0.07	0.12	−0.03	0.01	0.10	0.03		0.72	1.00		
13 Knowledge products/services	5.15	1.03	1	7	−0.03	−0.03	0.09	−0.01	0.14	0.13	−0.07	0.09	0.03		0.63	0.58	1.00	
14 Knowledge customers and markets	5.31	0.95	1	7	0.00	−0.10	−0.06	−0.14	0.09	0.01	−0.03	−0.06	0.10		0.58	0.62	0.49	1.00
15 Knowledge customer preferences	4.80	1.11	1	7	−0.04	−0.06	0.03	−0.20	0.11	−0.04	0.00	−0.06	0.06		0.36	0.48	0.46	0.54
16 Knowledge threats in industry	4.82	1.02	1	7	−0.03	−0.07	0.10	−0.14	0.16	−0.07	0.02	−0.06	0.02		0.47	0.51	0.39	0.43
17 Diversity functional background	5.14	0.97	1	7	−0.07	−0.09	0.07	−0.02	0.04	−0.02	0.04	0.00	0.07	0.01	0.11	0.11	0.10	0.11
18 Diversity industrial background	4.55	1.07	1	7	0.02	−0.10	0.23	0.02	0.10	0.01	0.02	0.05	−0.03	0.02	0.00	0.10	0.10	−0.02
19 Diversity educational background	5.08	0.97	1	7	−0.05	−0.03	0.10	−0.05	0.06	−0.08	−0.03	−0.03	−0.09	0.06	0.00	0.13	0.09	0.08
20 Women different experiences	4.25	1.77	1	7	−0.17	−0.20	0.06	0.02	0.04	−0.04	0.00	0.09	−0.10	0.11	−0.03	−0.09	−0.07	−0.03
21 Women different values	3.66	1.62	1	7	−0.13	−0.17	0.09	0.00	−0.11	−0.04	−0.15	0.04	0.04	0.05	−0.03	−0.04	−0.07	−0.02
22 Women active discussions	5.18	1.72	1	7	−0.03	−0.02	−0.05	0.13	−0.03	−0.07	−0.16	0.03	−0.05	−0.04	0.01	−0.01	0.06	0.00
23 Women inequality perception	1.92	1.50	1	7	−0.06	−0.06	−0.01	−0.04	−0.01	0.07	−0.07	0.05	−0.05	0.12	0.03	0.03	0.00	0.03
24 Women influence board work	3.86	1.86	1	7	0.02	−0.05	0.07	0.16	−0.05	−0.18	−0.17	−0.03	−0.03	0.03	0.05	0.00	0.07	−0.02
25 Women influence issues	2.75	1.70	1	7	−0.08	−0.01	0.04	0.03	−0.06	−0.23	−0.19	−0.08	−0.07	0.06	0.07	0.04	0.04	0.00
26 Evaluation organization and HR	3.57	1.70	1	7	0.04	−0.03	−0.02	0.02	0.01	−0.09	−0.02	−0.02	−0.01	−0.10	0.06	0.06	−0.02	0.10
27 Evaluation product quality	4.65	1.70	1	7	0.03	0.00	0.03	0.03	0.04	−0.13	0.05	−0.12	−0.07	−0.03	0.03	0.04	0.02	0.08
28 Evaluation health and safety	4.35	1.91	1	7	0.01	−0.04	−0.05	−0.05	0.03	−0.03	0.04	−0.08	0.18	−0.07	0.12	0.09	0.05	0.14
29 Evaluation CSR	4.15	1.83	1	7	0.08	−0.07	−0.04	−0.06	0.01	0.01	0.10	−0.04	0.09	−0.10	0.09	0.04	0.04	0.11
30 Suggestions long-term strategy	5.55	1.03	1	7	0.12	−0.14	0.14	0.14	0.08	−0.07	−0.02	−0.08	0.03	−0.07	0.16	0.22	0.19	0.22
31 Decisions long-term strategy	5.68	1.03	1	7	0.06	−0.10	0.10	0.17	0.09	−0.03	−0.07	−0.03	−0.03	−0.10	0.17	0.22	0.17	0.24

Table 1 Continued

		15	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*
1	Board size																	
2	Outsider ratio																	
3	Board ownership																	
4	Women director ratio																	
5	CEO duality																	
6	Chair gender (male)																	
7	Respondent gender (male)																	
8	Female appointment																	
9	Firm size																	
10	Prior firm performance																	
11	Knowledge main activities																	
12	Knowledge technology and know-how																	
13	Knowledge products/services																	
14	Knowledge customers and markets																	
15	Knowledge customer preferences	1.00																
16	Knowledge threats in industry	0.44	1.00															
17	Diversity functional background	−0.01	0.06	1.00														
18	Diversity industrial background	0.02	0.08	0.58	1.00													
19	Diversity educational background	0.04	0.13	0.61	0.56	1.00												
20	Women different experiences	−0.11	−0.10	0.05	0.11	0.03	1.00											
21	Women different values	−0.09	−0.01	0.00	0.00	0.02	0.38	1.00										
22	Women active discussions	0.00	−0.01	0.04	−0.01	0.15	−0.09	0.07	1.00									
23	Women inequality perception	0.07	−0.02	−0.04	−0.04	−0.08	0.06	0.00	−0.33	1.00								
24	Women influence board work	−0.03	0.01	0.03	0.05	0.13	−0.01	0.21	0.40	−0.12	1.00							
25	Women influence issues	0.03	0.00	−0.04	−0.01	0.12	−0.04	0.21	0.27	0.00	0.62	1.00						
26	Evaluation organization and HR	0.05	0.03	0.07	0.10	0.13	0.02	0.06	0.04	−0.04	0.08	0.17	1.00					
27	Evaluation product quality	0.02	0.17	0.05	0.11	0.09	0.08	0.02	0.04	−0.07	0.06	0.10	0.45	1.00				
28	Evaluation health and safety	0.00	0.06	0.09	0.01	−0.01	0.01	0.00	0.06	−0.04	0.09	0.10	0.36	0.37	1.00			
29	Evaluation CSR	−0.05	0.05	0.08	0.09	0.00	−0.01	−0.04	0.07	0.02	0.03	0.10	0.38	0.36	0.68	1.00		
30	Suggestions long-term strategy	0.11	0.26	0.19	0.25	0.14	0.02	−0.09	0.01	−0.03	0.10	0.00	0.20	0.28	0.16	0.21	1.00	
31	Decisions long-term strategy	0.11	0.21	0.21	0.28	0.20	−0.04	−0.11	0.07	−0.06	0.12	0.05	0.21	0.24	0.12	0.17	0.88	1.00

*All correlations above 0.11 are significant at the $P<0.05$ level.
$N=272$.

Table 2 Results of hierarchical linear model analysis

	Women's contribution to board decision-making						*Strategic involvement*	
	Coefficient	*SE*	*Coefficient*	*SE*	*Coefficient*	*SE*	*Coefficient*	*SE*
Women different experiences			−0.09*	0.04	−0.09*	0.04	0.05	0.05
Women different values			0.19***	0.05	0.18***	0.05	0.02	0.05
Women equality perception			−0.18***	0.05	−0.19***	0.05	−0.03	0.05
Equality per. * diff. values					−0.07*	0.03		
Women directors' contribution							0.12*	0.06
Respondents gender (male)	−0.63***	0.17	−0.58***	0.17	−0.61***	0.17	0.15	0.16
Women ratio	0.70	0.90	0.70	0.81	0.71	0.80	−0.56	0.77
Chairperson gender (male)	−1.26**	0.42	−1.12**	0.37	−1.10**	0.36	0.12	0.36
CEO gender (male)	−1.81**	0.48	−1.73***	0.43	−1.81***	0.43	−0.78	0.42
Female appointment	−0.22	0.25	−0.22	0.23	−0.20	0.23	−0.38	0.22
CEO duality	−0.56	0.48	−0.37	0.43	−0.37	0.43	0.48	0.41
Outsider ratio	0.12	0.64	−0.25	0.59	−0.10	0.59	−1.07	0.56
Board size	0.10	0.09	0.13	0.08	0.12	0.08	0.17*	0.08
Board knowledge	0.07	0.14	0.02	0.13	0.04	0.13	−0.13	0.12
Board job-related diversity	0.16	0.12	0.13	0.11	0.13	0.11	0.25*	0.10
Firm size	−0.05	0.09	−0.12	0.08	−0.09	0.08	−0.01	0.07
Firm prior performance	−0.02	0.05	0.00	0.05	0.00	0.05	−0.05	0.04
Finance and real estate	0.21	0.37	0.24	0.33	0.27	0.33	−0.69*	0.31
Service	−0.25	0.31	−0.25	0.27	−0.22	0.27	−0.73*	0.30
Manufacturing	0.14	0.29	0.30	0.23	0.32	0.26	−0.74*	0.32
Intercept (grand mean)	5.57***	1.25	6.41***	1.21	6.21***	1.94	4.94***	1.22
Deviance	891.06		874.46		873.20		829.05	
N	264		263		263		261	
R^2	0.11		0.20		0.21		0.06	
Variance level 1	1.29		1.28		1.27		1.04	
Variance level 2	0.50		0.28		0.26		0.30	

Unstandardized coefficients and standard errors. *$P<0.05$, **$P<0.01$, ***$P<0.001$.

members on board decision-making depends not on their gender *per se* but rather on the prior professional experiences and particularly the values they bring along; (2) perception of women as unequal board members may limit their contribution to board decision-making; and (3) women directors' contribution to board decision-making enhances board strategic involvement. Hence, our work helps reconcile previous contradictory results of studies on the impact of women directors by shedding light on a number of factors that influence the relationship between women directors and corporate performance.

We find that the mere presence of women on corporate boards is unlikely to increase board strategic involvement. However, if women with similar (traditional) professional experiences but different values are selected, they may be able to enrich board decision-making. Yet, we also need to take into consideration deeply rooted implicit theories and stereotypes about board work as being predominantly male and especially the role of stereotype threat. These psychological mechanisms may lead to women directors being perceived as unequal board members and thus reduce the potential positive impact of women on board decision-making and strategic involvement. Hence, the key to making women directors a valuable resource for the work of boards is to select women with appropriate characteristics and create the necessary conditions for women to be able to make distinctive contributions.

The findings of this study reinforce the importance of combining different disciplines in understanding and explaining organizational phenomena. By blending board theories with insights from social psychology, we were able to conduct an in-depth exploration of the influence of women's characteristics on board decision-making and strategic involvement as well as to interpret these results in light of existing board research. We made several contributions to current discussions about the role of women directors on corporate boards. First, we find no support for the assumption that the gender composition of corporate boards can either enhance or harm the work of corporate boards. The ratio of women directors was not significantly related either to women's ability to make an actual contribution to board decision-making or to board strategic involvement. These results support previous conclusions from meta-analyses of board research that board demographics are unlikely to be meaningful predictors of board effectiveness (Dalton *et al*., 1998) and suggest that studying actual board behavior is a more promising avenue of research (Pettigrew, 1992).

Our second contribution is the identification of the conditions that are critical for women's influence on board work. Contrary to our predictions, we find that when women directors have professional experiences different from those of male board members, this may create a significant barrier for women to influence board

Table 3 Constructs and measures

Variable	*Operationalization*	
Women's different professional experiences	Women on our board have different professional experiences than men	—
Women's different values	Women on our board have different values than men	—
Women's contribution to board decision-making	(1) women are equally active in discussions compared to men; (2) women have influenced the way the board conducts business; (3) women have influenced which issues are considered by the board	Alpha 0.69
Women equality perception	Women are considered as secondary board members	—
Strategic involvement	This board is highly involved in the evaluation of: (1) product quality and customer satisfaction (2) company's organization and human resources (3) health, environment and safety in the company (4) company's responsibilities towards the natural environment and corporate social responsibility The board: (5) makes suggestions about the company's long-term strategy (6) takes decisions about the company's long-term strategy	Alpha 0.80
Board job-related diversity	Our board members represent diversity in: (a) functional background (b) industrial background (c) educational background	Alpha 0.72
Board knowledge	Our board members have extensive knowledge of: (a) the company's main activity (b) the company's critical technology and know-how (c) weaknesses of company products and services (d) developments of the company's customers, markets, products/services (e) customers' preferences and power (f) threats of new firms and new products/services	Alpha 0.87

decision-making. Scholars have previously argued that more limited job opportunities impact negatively women's progress toward the executive suite and boardroom by limiting their ability to effectively fulfill key director roles (Fondas and Sassalos, 2000) and that not having executive experiences may represent problems for women to effectively fulfill their resource-dependence and service/expertise roles (Daily *et al.*, 2000). We found that these arguments are valid; when women with non-traditional professional backgrounds are appointed to corporate boards, their lack of relevant experiences seems to limit their potential to contribute to board work. Hence, contrary to the predictions of information-processing theories, our study suggests that diversity in women directors' backgrounds is a constraint rather than a resource. Whereas overall job-related diversity of the entire board was positively related to board strategic involvement, diversity in women directors' prior professional experiences was negatively related to women's actual contribution to board work. A possible explanation for these results is that when women possess different professional experiences, this may lead to creation of fault-lines (Lau and Murninghan, 1998), bringing women in a strong minority position. Even if women may have innovative ideas and critical perception of the views of the board majority, their strong minority position may prevent them from being able to express those opinions. As a possible solution to this situation, Westphal and Milton (2000) found that when directors had minority status across multiple categories, previous experience on other boards or network ties was particularly helpful for minority directors to create a perception of similarity with the majority and thus engage effectively in board work.

We find, however, that the more different women directors' values are from those of male directors, the higher is their influence on board decision-making. A possible explanation for this relationship is that women feel strongly about their underlying values and are therefore more likely to raise their voices when issues discussed in the board are in contrast to their values. Differences in women's values are significantly associated with higher participation of women in board discussions and higher impact on issues being discussed as well as the way in

which the board conducts its business. Hence, contrary to existing qualitative evidence that even if they experienced any conflict between their own beliefs and board decisions, women do not necessarily express this conflict (Bradshaw and Wicks, 2000: 201), we find that women are likely to act upon their different values in the boardroom. Furthermore, we demonstrate that such actions are valuable in enhancing board strategic involvement. These findings provide support for results of previous research on gender differences in leadership in the context of corporate boards.

Research suggests that women have less tolerance for ethical lapses and endorsement of morally non-traditional social policies (Eagly *et al*., 2004) and are more likely to perceive specific business practices as unethical (Franke *et al*., 1997). Whereas we do not test for associations between particular women values and specific board practices, we find that when women possess different values than male directors they are likely to be more active and influential in the boardroom by having an impact not only specific board decisions but also the range of issues to be discussed, which in turn influence the board's evaluation of firm organization, HR and CSR.

Our final contribution is the consideration of women equality perception as an important factor influencing the way women contribute to board decision-making and strategic involvement. Extending discussions on women's effectiveness as leaders to their role in the boardroom, we find that when women are perceived as less valuable board members they are less likely to contribute to board decision-making. Furthermore, we find that the potential contributions of women stemming from their different values are likely to be disregarded when women are not perceived as equal board members. Understanding of such dynamics is critical to the discussions of whether or not women directors can make a difference to the work of corporate boards. If one considers only the positive cognitive effects of women characteristics without taking into consideration how women are perceived, it may be concluded that bringing in women with similar (board relevant) professional experiences and different values will enhance board decision-making. However, it is also necessary to convince the rest of the board members that women are as effective as men in their director roles in order to realize their potential. In accordance with the hypothesized gender bias, we found that male respondents are more likely to negatively evaluate women's influence on board decision-making. This is consistent with prior research suggesting that male managers in particular question the effectiveness of women leaders (Sczesny, 2003). Furthermore, we found a negative association between male CEO and chairperson and women's contribution to board decision-making, suggesting that the gender of the leader might be an important factor determining the level of influence of women directors. Having a female leader may make women directors more comfortable in expressing their opinions while at the same time male directors may show more respect for and openness towards views raised by women.

Interpreting the findings of this study in light of introduction of quotas for women directors in Norway, it must be noted that affirmative actions may create additional burden to women equality. The general perception that women are appointed for affirmative action reasons or to appease special interest groups (Daily *et al*., 2000) may increase existing prejudices and stereotypes and lead to a perception of women as less valuable board members. Furthermore, if the pool for available women directors is not large enough this may lead to appointment of female directors who lack the backgrounds necessary for competent board work, thus further reducing the potential of women directors to make valuable contributions to board decision-making.

Norway has the highest ratio of women directors in the World, thereby making it a suitable context for investigating the influence of women directors on the work of boards. Nordic countries are particularly interesting for studying the role of women directors on corporate boards since they all share a long history of social support to gender equality. While the high ratio of women directors in Norway can be attributed to the Norwegian quota law (Huse, 2007; Hoel, 2008), similar trends toward the increase in women directors among board members can be observed in Sweden, while Finland and particularly Denmark are lagging somewhat behind (Gregoric *et al*., 2009). Although none of the other Nordic countries have passed legislation pertaining to the quotas of women directors on boards yet, such discussions are often raised and the 'Norwegian experiment' is followed closely by policy makers in these countries. While it is still too early to evaluate the consequences of the quota law for the governance practices in Norway, it has led to an increase in the ratio of women directors serving on boards of other Norwegian firms not subject to the law (i.e. non-publicly listed firms). Moreover, public debate continues to flourish on this topic in both Norwegian and international media, leading to increased awareness of issues pertaining to gender equality in general and the role of women in upper echelons in particular.

One important limitation of this study that simultaneously opens avenues for future research is the fact that we measure perceptions of women directors' differences rather than actual differences between female and male directors. While prior research suggests that actual and perceived differences are highly correlated (Harrison *et al*., 2002; Cunningham, 2007) and that perceived diversity may mediate the effects of actual diversity on team processes and effectiveness, this proposition has not been tested in the context of corporate boards. Combining primary survey data on board dynamics and involvement with secondary data on women directors' characteristics may open up for intriguing future inquiries. For instance, it would be possible to assess to what extent the influence of women directors on board work is based on their actual differences from male directors or on perceptions of being different. Furthermore, future research may investigate how the addition of women directors may create fault-lines in corporate boards and the effects of these fault-lines for board dynamics and effectiveness.

Acknowledgement

Sabina Nielsen acknowledges financial support from the Marie Curie European Re-Integration Grant PERG-2008-239310.

Notes

1 We thank one of the anonymous reviewers for pointing at the potential selection bias and offering this suggestion.
2 We thank one of the anonymous reviewers for this suggestion.

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