

Women on corporate boards: key influencers or tokens?

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Abstract This paper investigates how the increasing ratio of women directors on corporate boards is associated with decision-making dynamics, specifically the perceived participation and influence of the women on the board. We test hypotheses using a sample of 458 women on Norwegian corporate boards where the ratio of women directors among board members ranges from 11 to 100%. Overall, we find that women perceive that they have a high level of information sharing, a low level of self-censorship, and a high level of influence across the different ratios of board membership held by women directors. These results support the notion of women directors as significant influencers. However, the results also show that women directors perceive that they do receive more information and engage in more informal social interaction when the ratio increases, and perceived influence does also increase when the ratio increases.

Keywords Corporate governance · Women on corporate boards · Gender diversity · Tokenism · Board dynamics

1 Introduction

The issue of women on corporate boards of directors has received considerable attention during the last decade, with studies concerning practice in a number of countries, including the United States, Canada, the United Kingdom, France,

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New Zealand, Australia, Spain, Jordan, Tunisia, Denmark, Iceland and Norway (Vinnicombe et al. 2008). A central question is whether the presence of women on a board contributes to the performance of the board, such as, for example, role performance (Wan and Ong 2005) or task performance (Huse et al. 2009), and ultimately, corporate performance (Adams and Ferreira 2009; Carter et al. 2000; Erhardt et al. 2003; Francoeur et al. 2008; Rose 2007; Singh et al. 2001).

From a resource perspective, the board members' contributions are typically based on their human capital (Barney 1991). Human capital can be defined as a combination of the human resources, i.e. the knowledge and skills embodied in people, and the outcomes of the development of these human resources, through e.g. career experience and learning, and specialisation (Hatch and Dyer 2004). As women remain a minority on corporate boards worldwide, their individual contributions must be quite significant to be detected in studies of board performance. When the Norwegian government announced a plan for a 40% gender quota rule on the boards of public limited liability companies in 2002, the stated purpose was to increase the population from which corporate boards recruit their directors, and hence contribute to improved board competence. However, there was considerable opposition to the quota rule. For instance, business leaders and employer organizations warned that a lack of women with relevant management experience would lead to the reduced performance, authority and legitimacy of Norwegian boards, resulting in the reduced competitiveness of Norwegian industry in international markets (Hoel 2008). Thus, there were strong indications that women were regarded as an out-group in the business elite context (Singh and Vinnicombe 2004; Tsui et al. 1992) and that the contribution women could make to corporate boards was in question.

As the proposed quota rule is now implemented in Norway, it is interesting to investigate whether women are fully contributing to board decisions or are still regarded as an out-group. Specifically, the effects on board dynamics and decision-making of an increased ratio of women directors as a consequence of the quota rule is an intriguing issue. Research on boards as decision-making groups indicates that internal behavioural dynamics may affect the actual impact of individual members on board performance (Forbes and Milliken 1999). More specifically, the theory of tokenism (Kanter 1977) suggests that women minorities in groups are subject to discriminating behaviour, and hence face barriers in influencing group decisions. These minority problems should, according to the theory, be alleviated when the ratio of women increases beyond the "token" limit (15%). On the other hand, recent research indicates that women who are a minority, and even sole women on a board (Konrad et al. 2008; McInerney-Lacombe et al. 2008), influence on the board, and hence should be regarded as significant influencers. Thus, the association between women ratio and women's influence on board decisions remains a largely unanswered question.

The implementation of the quota rule in Norway provides a "natural experiment" enabling us to study women's contributions to board decisions, and helps us assess whether the ratio of women indeed affects these contributions. In this paper, we analyse data collected from a sample of 458 women directors on Norwegian boards, including the boards of public limited liability companies, with a ratio of women

ranging from 11% to 100%. This allows us to analyse whether minority problems really exist for women on boards with small women ratios, and if so, whether these are alleviated in boards with greater gender balance or a majority of women.

2 Board dynamics and the contributions of women directors

A major assumption underlying research on women on corporate boards is that they bring different resources and external relationships to the board and that potentially this enhances the value of the board and may actually improve board performance (Hillman et al. 2002). Research indicates a positive relationship between firm value and females board appointments (Campbell and Vera 2008a, b; Carter et al. 2003; Francoeur et al. 2008). Moreover, a study of Canadian firms that appointed women to all-male boards, shows that these women are insiders with highly specialized skills in terms of firms-specific skills or are support specialists with specific financial or legal expertise (Dunn 2010). Thus, it seems that all-male boards recruit women to improve the specialized skills on the board. Other positive effects of women directors on corporate boards are for example that firms with female corporate directors may send positive signal to internal and external constituents (Bernardi et al. 2006; Daily and Dalton 2003), they tend to be more generous in their corporate philanthropy (Williams 2003), have more participative boards (Pearce and Zara 1991), and, for firms in the service sectors, have better reputation (Brammer et al. 2009).

However, so far there is no conclusive evidence that gender diversity affects board performance. This is complicated to study in terms of research methodology, and shows the need for a behavioural perspective to investigate how and under what conditions women contribute to board decision-making and consequently board task performance (Huse 2008). Understanding the board as a decision-making group may then enhance our understanding of how board dynamics mediate the relationship between board demographics and performance. For example, Forbes and Milliken (1999) argue that board effectiveness is dependent on two group-level criteria: board task performance, and the ability of its members to continue to work together, as evidenced by the cohesiveness of the board.

There is already some empirical evidence on the contribution of women to board task performance. In a study of the relationship between women ratio and a set of task performance criteria, Huse et al. (2009) found that the women ratio was not generally associated with board control tasks (such as corporate social responsibility, and strategic and budget control), although there was a small but significant relationship to behavioural control. On the basis of reports by firm CEOs, Nielsen and Huse (2010b) found a relationship between the women ratio and board strategic control but not operational control. The hitherto weak support for the relationship between the women ratio and the performance of board tasks in these studies is partly interpreted as an indication that women directors are not very different from men. These authors also found that if women on the board were regarded as having different *values* to the men, they were perceived as having made a positive contribution to board decision-making (Nielsen and Huse

2010a). However, if they were regarded as having dissimilar *professional experience*, their contribution to board decision-making was perceived as negative (Nielsen and Huse 2010a).

We can also interpret these somewhat inconclusive results as reflecting a bias in the perceptions of women vs. men directors on boards. For example, the gender of the respondent had an impact on the assessment of women's contributions to decision-making, with male respondents rating women's contributions significantly lower than did female respondents. Further, perceptions of women as unequal board members were significantly associated with lower ratings of their contribution to decision-making (Nielsen and Huse 2010a). These results indicate that subjective perceptions regarding women's contributions do differ. As the latter studies used the CEO (Nielsen and Huse 2010b) or the chairperson (Nielsen and Huse 2010a) as respondents, the women directors' own perceptions need to be further investigated. Some studies have also suggested that the lack of findings regarding women's contributions to board performance may be the result of women being conformists and attempting to assimilate in a male-dominated board context by suppressing any differences in opinions or attitudes (Huse et al. 2009; Rose 2007). Conversely, as mentioned, there is also some evidence that women do assert different positions, even in boards where they are the sole woman director (McInerney-Lacombe et al. 2008). Consequently, further investigation of the decision-making culture of boards is warranted, particularly the dynamics regarding participation, inclusion and involvement, i.e. the cohesiveness criterion suggested by Forbes and Milliken (1999). We suggest that the fact that women are a small minority on most boards worldwide, and that they still tend to be perceived as an out-group in the business elite setting, may pose specific challenges to individual participation and influence on decision-making on the board. In this paper, we focus on the women directors' own experiences and perceptions of participation and influence.

2.1 Theory and hypotheses

A large body of research has focused on the social barriers that potentially reduce the likelihood for minority viewpoints to be incorporated into group decisions (Hambrick et al. 1996; Nemeth 1986; O'Reilly et al. 1989; Smith et al. 1994; Westphal and Milton 2000). Researchers have also argued that the reduced influence is a problem connected to the *number* of women on the board, and that a critical mass is necessary for women to exert influence (Konrad et al. 2008). For instance, Konrad et al. (2008) found that directors who were the sole woman on a board had to struggle to be heard in board discussions, while being one of two or three women on the board dramatically changed the situation.

The effects of being a minority in a group are thoroughly discussed in Rosabeth Moss Kanter's (1977) well-known study of tokenism. Kanter (1977) studied women working within a male-dominated Fortune 500 firm to explore how the ratio of women in a group affects group processes. She defined a skewed group as having a ratio of 85:15, where the members of the majority (85% or higher) were labelled as "dominants". The remaining minority members were labelled "tokens". Kanter (1977) argued that being a token has three behavioural consequences, namely

visibility, polarization, and assimilation. *Visibility* implies that the tokens find themselves being watched all of the time, resulting in perceptions of performance pressure. In this situation, there are perceptions that even small mistakes can be fatal, and tokens feel they have to work harder to receive recognition for any individual achievements. At the same time, tokens may perceive a pressure not to out-perform dominants (Gustafson 2008), and some will choose to become socially invisible and maintain a low profile.

Polarization implies that the dominant group feels threatened or uncomfortable around tokens, and therefore they heighten their boundaries by exaggerating their commonality and exaggerating the differences of tokens. The majority may thus exclude tokens from informal networks where important socialization takes place, and as a result the tokens may experience social isolation. Finally, *assimilation* implies that the tokens are forced into stereotypical categories defined by the dominants. Tokens are then not seen as they really are. Kanter (1977) labels this role encapsulation, a process that forces tokens into limited and caricatured roles (for example, expectations as to what is “suitable behaviour” for a woman). For the tokens, stereotyping may result in perceptions of barriers to exerting influence on decisions in the group. Importantly, these three mechanisms are predictions of how the dominants behave towards tokens, as well as the subjective reactions of the tokens in terms of their own status.

The social psychological consequences of minority status in groups are also discussed within social identity theory. According to this theory, individuals construct social identities based on various characteristics, where salient demographic characteristics such as gender, race and age form a primary basis for categorization (Jackson et al. 1992). Through the social identity-forming process, the demographic minority may then be categorized as an out-group by the majority (or in-group). This categorization implies that the majority develop a coherence and confidence that reinforce their own self-esteem and self-perception (Ashforth and Mael 1989; Tajfel and Turner 1986), similar to the polarization mechanism in tokenism theory. In a board context, there is evidence that members of the in-group on a corporate board have a tendency to assess the behaviour of others in the in-group more positively compared to the same behaviour in the out-group (Singh and Vinnicombe 2004).

Nevertheless, several studies have argued that the effects of tokenism and minority status generally depend on the social context. More specifically, it has been argued that it is important to separate the effects of numerical proportion vs. gender status on token behaviour (e.g. Gustafson 2008; Yoder 1991). As women typically remain a minority in the business elite context, they could be subject to social barriers regardless of their ratio on a board because of a general low esteem resulting from gender stereotyping. On the other hand, the minority problems could be unrelated to gender, and men directors may experience similar tokenism mechanisms if they are a minority on the board. In this study, we investigate whether the increased ratio of women on a board is associated with four possible consequences of tokenism. We have two underlying assumptions in the study. First, if women directors are significant influencers, no perceived social barriers should exist, regardless of women ratio on the board. Second, if social barriers for women

minorities exist, and an increase in the women ratio alleviates these, the minority problems may be not related to gender, but rather to the women ratio itself. Thus, our hypotheses take into account that a corporate board is quite a specific context, both because the directors are recruited through a screening process, and because the board has quite well-defined tasks and roles (Forbes and Milliken 1999). This suggests that universal gender stereotyping may be less relevant in a board context.

We now elaborate upon our hypotheses by combining tokenism theory with social identity theory and the research on demographic minorities in groups. The hypotheses are grounded in the three tokenism mechanisms of visibility, polarization and assimilation, and address each woman's perceived experiences on the board. The visibility mechanism in tokenism theory predicts that tokens will avoid conflicts and controversies (Li 1994) and are careful not to outperform the dominants (Gustafson 2008). This is because to argue against the dominants can be a threat to the dominant group's self-esteem. For instance, there is empirical evidence that tokens exhibit passive and "obedient" behaviour (Li 1994), and feel they are more likely to be criticized for their mistakes (Gustafson 2008).

Consequently, there is pressure towards conformity from the majority in the group. Pressure towards conformity is a well-known group phenomenon, described by Janis (1972), among others, in his early 1970s study on the development of groupthink. Janis (1972) identified three symptoms of groupthink: overestimation of the group, close-mindedness, and pressure towards conformity. A behavioural consequence of pressure towards conformity for the minority is self-censorship, where the minority members of the group feel they have to censor opinions that deviate from the opinions of the majority. Self-censorship was proposed to be one of the explanations for the absence of women's contributions in two earlier studies (Huse et al. 2009; Rose 2007). We thus propose that on a corporate board, one consequence of visibility is that women directors who are a minority may attempt to reduce their visibility by censoring their own opinions that are controversial or that may cause conflict. We further propose that the larger the ratio of women on the board, the less pressure based on visibility will prevail, and hence perceived self-censorship will diminish or disappear. We put forward the following hypothesis.

H1: The ratio of women on a board is negatively associated with perceptions of self-censorship, such that the higher the ratio of women, the lower will be perceptions of self-censorship reported by individual women.

The second mechanism in tokenism, polarization, suggests the contrasting of the dominants with the tokens. This has consequences for the exclusion of tokens from communication and informal networks in the majority group. Furthermore, research on demographic minorities indicates that demographic differences lower social cohesion in a group. The minority is then isolated from the rest of the group, and thus perceive that there are barriers to information as well as social isolation (Hambrick et al. 1996; Nemeth 1986; O'Reilly et al. 1989; Smith et al. 1994; Van der Walt and Ingley 2003). In a corporate board setting, the polarization mechanism may have two behavioural consequences. First, the dominants may be less inclined

to share information with the minority members, and second, they may exclude the tokens from social interaction outside the boardroom.

In evidence, a recent meta-study concludes that information sharing is an important condition for team performance across all types of moderating factors (Mesmer-Magnus and DeChurch 2009), and we suggest that this is also the case for a board of directors. However, earlier work has shown that group members are less willing to share information with individuals they perceive to be different from themselves (e.g. Devine 1999). The meta-study of Mesmer-Magnus and DeChurch (2009) also confirmed that information sharing is higher in homogeneous than in heterogeneous groups. Thus, we propose that on a board with a minority of women, the polarization mechanism will make the in-group more reluctant to share information with the out-group. Consequently, the women minority members may report that they do not receive sufficient information or that information is being withheld. This effect will decrease when the ratio of women increases, as information sharing will improve. Hence, we propose the following hypothesis.

H2: The ratio of women on a board is positively associated with perceptions of information sharing from the rest of the board, such that the larger the ratio of women, the greater will be the perceptions of information sharing reported by individual women.

The polarization mechanism is also predicted, according to both tokenism and social identity theory, to contribute to the social exclusion of tokens. Thus, the consequences of polarization are such that the tokens feel isolated and excluded from networks where informal socialization takes place (Gustafson 2008). For example, for a corporate board, informal discussion and socializing with the other board members outside formal meetings are important activities (Parker 2007; Stevenson and Radin 2009). However, women may find it difficult to fully participate in this social interaction with other board members if they are a minority, because they perceive themselves as an out-group (Huse and Solberg 2006). Accordingly, the polarisation mechanism has the consequence that token women are not aware of or do not participate in informal social interaction outside the boardroom. As the ratio of women increases, we suggest that they will feel less excluded and perceive to engage in social interaction to a greater extent. Hence, we propose the following hypothesis.

H3: The ratio of women on a board is positively associated with perceptions of social interaction with other board members outside the boardroom, such that the larger the ratio of women, the greater will be the perceptions of informal social interaction outside the boardroom reported by individual women.

The third mechanism in tokenism, assimilation, implies that tokens are forced into stereotypical categories defined for them by the dominants (Li 1994), in this case expectations about traditional gender roles for a woman. Stereotypical prejudices may also have consequences in that the minority's arguments are weighted less in board decisions (Miller and Brewer 1996; Westphal and Milton 2000). Furthermore, it has been shown that the in-group can give the out-group poor evaluations and has negative perceptions based on stereotypes (Tsui et al. 1992).

As a consequence, it has been suggested that women may have greater difficulty in obtaining important developmental assignments (Gustafson 2008; Lyness and Thompson 2000), and hence face higher barriers to career advancement. If there is a stereotyping effect towards women minorities on boards, anecdotal evidence suggests that this could be manifested in an underestimation of women directors' contributions compared to their male counterparts. There was the concern among several executives in large companies in Norway before the quota rule was implemented that the lack of women with relevant prior management experience in business would weaken the competence of boards, and it appeared to be a general opinion in the media that due to lack of relevant background or career experience, women would not be able to contribute fully on the boards (Hoel 2008; Milne 2009). Thus, it may be that there are expectations that women directors may be less competent and experienced. We suggest that if this is indeed the case, the male majority will give less credence to the arguments of the women minority directors, and these will perceive difficulties in being heard, so that they have limited influence on board decisions. This effect is proposed to decrease when the ratio of women increases, as more women in the group will weaken stereotyping perceptions, according to tokenism theory. We propose the following hypothesis.

H4: The ratio of women on a board is positively associated with their perceptions of their influence on the board, such that the larger the ratio of women, the greater will be the perceptions of influence reported by individual women.

3 Research design and methodology

3.1 Sample

The data were collected by a web-based survey, with a questionnaire sent to 1,260 women. The potential respondents were contacted through the Female Future Program of the Confederation of Norwegian Enterprises (193 women), and through a similar database of 1,067 women compiled by Innovation Norway. Completed questionnaires were received from 524 respondents, i.e. a response rate of 48.5%. Of the 524 respondents, 66 did not hold board positions at the time of the survey and were therefore excluded. The final sample on which the analyses are based thus consists of 458 respondents, of whom 112 held the chair of their board. Several of the women responded that they held more than one board post, and they were asked to relate their responses to the board on which they had served the longest. Thus, the data collected from respondents holding several board positions are based on the one board on which they had the longest experience.

In Norway, less than 1% of corporations are public limited companies, comprising a total of 348 companies in 2009. The average ratio of women on the boards of these companies was 40.2% in 2009 (Statistics Norway 2009). These are the companies to which the quota rule applies, and they are generally large firms. In our sample, 6.3% of the respondents responded that they were on public limited company boards ($N = 29$), 62.2% that they were on ordinary limited company

boards ($N = 285$), and 31.0% on boards of other types of organisations ($N = 144$). We included the type of firm as a control variable to help determine whether the respondents in public limited companies systematically differ from other respondents, as these are the companies to which the quota rule applies.

The female ratio in our sample ranges from 0.11 to 1.00 with a mean of 0.44, and there are no significant differences in the mean women ratio across the different firm categories (42.45 in public limited companies, 43.79 in ordinary limited companies, and 44.42 in other companies). As boards without women are excluded from our sample, the average women ratio is larger in our sample than in the population of firms in Norway. For example, the average ratio of women on boards of ordinary limited companies was 16.9% in 2009 (Statistics Norway 2009). In terms of age and education, 14% of the women in the sample are in their thirties, 44% in their forties, 35% in their fifties, and 6% are in their sixties or older. Furthermore, 8% have graduated at secondary school, 27% hold an undergraduate university degree, and 65% hold a postgraduate university degree.

3.2 Dependent variables

The measures are partly based on the QPS Nordic instrument (Dallner et al. 2000) designed to measure a wide range of job-related psychological and social factors, and modified to be relevant for our setting. As we wanted to apply measures that were directly relevant for women's perceptions of their experiences on boards, we developed several of the measures specifically for this study.

The dependent variables were measured using a five point Likert-type response format. *Perceived self-censorship* was measured via three questions in the questionnaire, indicating the degree to which the respondents reported refraining from asserting different positions on the board. One of the questions was reversed (indicating the degree to which they actually asserted different positions), and as this item had a weak correlation with the other two questions, it was removed from the analysis. The final variable for perceived self-censorship is therefore based on two questions. *Information sharing* was measured by three questions, indicating the degree to which the respondent perceived that they had received all necessary information. *Perceived social interaction* was measured with three questions, indicating the degree to which the board members, including the respondent, socialized outside the boardroom. *Perceived influence* was measured using three questions, indicating the degree to which each respondent perceived that her opinions and propositions were approved in board decisions.

3.3 Independent variables

Women ratio was measured as the ratio of women to the total number of board members on the focal board, based on the numbers reported by the respondents in the questionnaire. Thus, women ratio is an individual measure of the proportion to which each respondent belongs. In earlier research on tokenism, and in accordance with Kanter's (1977) original work, tokens have been defined as belonging to a 15%

minority. As none of our respondents belonged to a minority of only 15%, we used 17% as the cut-off between tokens and non-tokens in our sample. However, most of the boards in our sample have eight members or less (98%, mean size is 5.58), and a token will thus represent a lone woman on the board. As being a singleton represents a special case of tokenism (Konrad et al. 2008), we also employed a cut-off of 25%. Thus, we used three different measures of the women ratio: namely, a ratio of 17:83 ($N = 33/425$), a ratio of 25:75 ($N = 104/354$) and a continuous ratio variable ranging from 0.11 to 1.00, labelled “Women Ratio”.

3.4 Control variables

We included five variables to control for other factors that may affect the results. We measured board size (the number of board members, including employee-elected members), and included three individual variables as controls (age, education, and board experience, measured as number of years as a director on the focal board). Moreover, we included the type of firm as a control variable, recoded as a dummy variable taking a value of one for a public limited company (PLC) and zero otherwise, labelled listing status. We did this because it is to public limited companies that the quota legislation applies. The questionnaire was pre-tested on a group of ten women with board experience, but not included in the sample. Tables 1 and 2 lists the measures.

4 Results

The data were analysed in several phases. First, a confirmatory factor analysis (principal component analysis with varimax rotation) was performed on the scale items for the four dependent variables to determine item retention. The result from the factor analysis showed a satisfactory factor pattern, as all items had a factor loading of 0.6 or higher, and a cross-loading of less than 0.35 (Kuvaas 2008). Table 1 details the factor analysis.

The correlation matrix, including means and standard deviations of the variables, are reported in Table 2. Inspection of the variable properties in this table shows, first, that none of the correlations are extremely strong so multicollinearity is not suspected. We did further tests for multicollinearity in the regression analyses, and all showed satisfactory results. Table 2 also shows that the mean for perceived influence is very high (4.33 on the five-point scale), and that the mean for perceived self-censorship is very low (1.27 on the five-point scale). This shows that on average, the women perceive themselves as highly influential on the board, which is in preliminary support of the significant influencer school of thought. A skewness analysis showed that self-censorship is negatively skewed (skewness of 1.7); however, the large sample size implies that standard errors should be normally distributed, and thus this should not represent a validity threat. All variables are thus considered to have satisfactory properties for regression analysis.

Table 1 Factor analysis of dependent variables

Questionnaire items	1	2	3	4
<i>Perceived self-censorship (H1)—Alpha: 0.66</i>				
Do you sometimes express other than your true opinions, to comply with the majority?	0.012	−0.105	−0.075	0.875
1 = Very seldom or never, 5 = Very often or always				
Did you ever refrain from expressing you true opinion, to avoid discussion?	−0.005	−0.182	−0.120	0.844
1 = Very seldom or never, 5 = Very often or always				
<i>Perceived information sharing (H2)—Alpha: 0.70</i>				
Have you experienced that information was withheld from you?(r)	−0.009	0.169	0.780	0.000
1 = Very often/always, 5 = Very seldom/never)				
Have you experienced to have been given too little information to be able to make up your mind on a topic?(r)	0.067	0.009	0.765	−0.111
1 = Very often/always, 5 = Very seldom/never)				
In my experience, the other board members share all relevant information with me	0.043	0.336	0.677	−0.126
1 = Completely disagree, 5 = Completely agree				
<i>Perceived social interaction (H3)—Alpha: 0.84</i>				
I socialize with other board members outside the boardroom 1 = Completely disagree, 5 = Completely agree	0.881	0.070	−0.010	0.024
Female board members socialize outside the boardroom 1 = Completely disagree, 5 = Completely agree	0.869	−0.071	0.045	0.016
Both male and female board members socialize outside the boardroom 1 = Completely disagree, 5 = Completely agree	0.853	0.105	0.066	−0.037
<i>Perceived influence (H4)—Alpha: 0.77</i>				
My propositions are approved when decisions are made 1 = Completely disagree, 5 = Completely agree	1 0.158	0.813	0.024	−0.209
I experience that my opinions are taken seriously by the board 1 = Completely disagree, 5 = Completely agree	0.033	0.799	0.244	−0.037
It is easy to obtain support for my views and propositions 1 = Completely disagree, 5 = Completely agree	1 −0.071	0.775	0.184	−0.112
Eigenvalue	2.78	2.21	1.22	1.09
Percentage of variance	22.96	20.61	15.63	13.79

Principal component, Varimax rotation, Kaiser's normalization, *r* = reverse scored item

4.1 Contributions of women on the board

The overall picture, based on the means in the correlation matrix, indicates that, as stated above, women on boards perceive good opportunities for contributing to board decisions, perceiving a high level of influence on the decisions of the board

Table 2 Descriptive statistics and correlations for dependent, independent, and control variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Perceived self-censorship	1.27	0.45	–										
2. Perceived information sharing	4.13	0.68	–0.30**	–									
3. Perceived social interaction	2.56	1.26	–0.01	0.12*	–								
4. Perceived influence	4.33	0.57	–0.32**	0.48**	0.15**	–							
5. Women ratio (Dummy split 17:83%)	0.93	0.26	–0.01	0.07	0.13**	0.15**	–						
6. Women ratio (Dummy split 25:75%)	0.77	0.42	0.00	0.03	0.16**	0.08†	0.50**	–					
7. Women ratio (continuous)	0.43	0.20	–0.05	0.14*	0.23**	0.16**	0.39**	0.64**	–				
8. Board size	5.58	2.20	0.09†	–0.16**	–0.15**	–0.13**	–0.14**	0.06	–0.18**	–			
9. Age of woman directors			0.05	0.07	–0.15**	0.03	0.07	0.05	–0.06	0.02	–		
10. Board experience	4.02	3.80	0.01	0.05	0.18**	0.03	0.04	0.01	0.06	–0.15**	0.26**	–	
11. Education of woman directors			0.02	–0.08†	0.15**	–0.01	–0.05	–0.06	–0.06	0.08†	–0.10*	–0.20**	–
12. Listing status (Dummy PLC = 1; O = others)	0.06	0.24	–0.08	–0.08	–0.09	–0.06	0.04	0.10*	–0.02	0.10*	0.05	–0.10*	0.13**

† $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$

Self-censorship: information sharing; social interaction; perceived influence: 1 = min; 5 = max

Dummies for women ratio: Split 17%: 1 \geq 17%, 0 = 0–17%; Split 25%: 1 \geq 25%, 0 = 0–25%

Board size = Number of board members

Age (1 = born in or after 1980; 2 = born 1970–1979; 3 = born 1960–1969; 4 = born 1950–1959; 5 = born 1940–1949)

Experience = Number of years as a member of the focal board

Education of woman directors (1 = secondary school, 2 = undergraduate university degree (1–3 years), 3 = postgraduate university degree (more than 3 years))

Listing status (Dummy: 1 = Public Limited Companies; 0 = others)

(mean = 4.33 on the five point scale). They also report practising very little self-censorship (mean = 1.27). These findings suggest that women directors, when they have divergent views on the board, actually express these views and actively engage in discussion (Forbes and Milliken 1999; Ong and Wan 2008). In addition, the board members to a great degree share information with each other (mean = 4.13). This clearly indicates that the women in our sample perceive that they have the opportunity to contribute to board decisions by openly sharing their views, readily obtain access to important information, and ultimately influence board decisions. Thus, overall, the women directors do not perceive that there are major social barriers to participation. It would appear, however, that board members informally socialize only to a limited extent outside the boardroom (mean = 2.56). Based on our data, we do not know whether this differs for male and female board members, and therefore cannot conclude whether there is a gender effect.

4.2 The relationship between the ratio of women and their contribution

The hypotheses about the relationship between the women ratio and the contributions of women to board decisions were tested using multiple regression analysis in four sequences, one for each dependent variable (perceived self-censorship, perceived information sharing, perceived social interaction and perceived influence). For each dependent variable, we undertook three separate analyses, corresponding to the three different measures of the women ratio, such that the variable women ratio is the 17:83 token ratio in Model 1 coded as a dummy variable (where a ratio of zero to 17% is zero, otherwise one), the 25:75 ratio in Model 2 coded as a dummy variable (where a ratio of zero to 25% is zero, otherwise one), and the continuous ratio in Model 3. We included the four control variables in all of the analyses. The estimated results are shown in Table 3.

Hypothesis 1 predicted that the women ratio would be related to perceived self-censorship for all three models. The results for perceived self-censorship in Table 3 show that the women ratio is unrelated to the respondents' perceptions of self-censorship in any of the models. Thus, the women in our sample report that they practise very little self-censorship, regardless of the women ratio on the board. In support of these findings, qualitative studies of the behaviour of women directors have also found that on many boards, women directors, more so than men, are prepared to push the "tough issues" in board discussions. This was also the case on boards with only one woman director, and this was reported by both men and women directors in two recent studies (Konrad et al. 2008; McInerney-Lacombe et al. 2008). Huse et al. (2009) also found that the women ratio was generally unrelated to more creative discussions in boards, but if the women had different types of backgrounds than the men, they actually contributed to more creative discussions, also indicating that women directors do not comply with the pressures of conformity. Overall, these arguments support the notion of women as significant influencers, not as tokens, i.e. women directors do not feel affected by the visibility mechanism in tokenism theory, and this does not vary according to their minority or majority status on the board. In addition, the women on public limited company boards appeared to practise less self-censorship than women on the other types of

Table 3 Multiple regressions for effects of women ratio

Equation	Model 1 17% tokens (<i>N</i> = 33/425) β	Model 2 25% tokens (<i>N</i> = 104/354) β	Model 3 Continuous ratio β
Self-censorship			
Board size	0.10*	0.09 [†]	0.09 [†]
Age	0.04	0.04	0.04
Education	−0.02	−0.02	−0.02
Experience	0.00	0.00	0.00
Listing status (PLC)	−0.09 [†]	−0.09 [†]	−0.09 [†]
Women ratio	0.01	0.00	−0.02
Adjusted <i>R</i> ²	0.00	0.00	0.00
<i>F</i>	1.32	1.32	1.35
Information sharing			
Board size	−0.15**	−0.15**	−0.13**
Age	0.07	0.08	0.08
Education	−0.06	−0.06	−0.05
Experience	−0.01	−0.01	−0.02
Listing status (PLC)	−0.06	−0.06	−0.06
Women ratio	0.04	0.04	0.12*
Adjusted <i>R</i> ²	0.03	0.03	0.04
<i>F</i>	3.06**	3.02**	4.01**
Social interaction			
Board size	−0.09 [†]	−0.12*	−0.07
Age	−0.21**	−0.21**	−0.19**
Education	−0.10**	−0.10*	−0.10*
Experience	0.20**	0.20**	0.19**
Listing status (PLC)	−0.04	−0.05	−0.04
Women ratio	0.11*	0.18**	0.17**
Adjusted <i>R</i> ²	0.10	0.12	0.12
<i>F</i>	9.42**	11.22**	10.88**
Perceived influence			
Board size	−0.11*	−0.13**	−0.10*
Age	0.03	0.03	0.04
Education	0.02	0.02	0.02
Experience	0.00	0.01	0.00
Listing status (PLC)	−0.06	−0.06	−0.05
Woman ratio	0.13**	0.09**	0.14**
Adjusted <i>R</i> ²	0.02	0.02	0.03
<i>F</i>	2.81*	2.22*	2.95*

[†] $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$, Max VIF = 1.15

β = standardized beta values, *R*² adjusted *R* square, *PLC* public limited companies

boards (although this relationship was weak). As the public limited company boards are the “quota boards”, these findings indicate that the women who are appointed to a board according to this rule are not subjected to greater tokenism in the form of visibility than other women directors.

In terms of the relationship between the women ratio and the women’s perceptions of information sharing, the results are only partially supportive of Hypothesis 2. In evidence, there are no differences in perceived information sharing between women with minority status of a 17 or 25% group and the rest of the respondents (Models 1 and 2). However, the women ratio is positively related to perceived information sharing when applying the continuous model of ratio (Model 3). Thus, the larger the women ratio the more likely women perceive that information is shared. As information sharing is an essentially social process, it may be that women share more information with each other than men do with women, and that a larger number of women are required for this to occur. Thus, some degree of polarization could be in effect in that women and men share more information among their own gender than with the opposite gender. However, as this mechanism may be similar for men and women, it is probably not a gender effect of women being tokens.

Hypothesis 3 about the relationship between women ratio and perceived social interaction was supported in all three models. The degree to which the respondents perceive that they engage in social interaction with the other board members outside board meetings increases with an increased ratio of women for all levels of the women ratio. As building social networks with other directors of both gender can contribute to the creation of social status and further mitigate out-group biases (Westphal and Milton 2000), an increased women ratio may further integrate women informally on boards and reduce the level of polarization between men and women on the board.

Hypothesis 4 about the relationship between the women ratio and perceived influence is also supported, although the observed pattern varies somewhat across the three models. Minority status is more strongly related to perceived influence in the 17% (or less) group (Model 1) than in the 25% group (Model 2), and the relationship in Model 3 is similarly as strong as in Model 1. In Model 1, the woman director is in most boards a lone woman, while in Model 2 she is still a minority member, but not a lone woman. Because the minority in Model 1 is quite small (close to the “token limit” of 17%) compared to Model 2, this may indicate that having more than one woman on a board is a critical limit for perceived influence to increase for each woman on the board. This is in accordance with the critical mass argument. For example, Konrad et al. (2008) reported that women directors who were the sole woman on a board had to struggle hard to be heard in board discussions, while being one of two or three women dramatically changed this situation. In general, perceived influence increases with the number of women on a board (Model 3). This indicates that each woman perceives that she has more influence when the ratio of women increases. Consequently, the assimilation mechanism predicted in tokenism theory may to some degree be relevant for lone women on a board, but disappears as the women ratio increases.

The results for the control variables indicate that firm category is not significantly related to the main variables in our models, although the relationship between firm category and perceived self-censorship is almost significant, and public limited companies are associated with lower perceived self-censorship. In contrast, board size appears to be important. We find that the larger the board size, the higher the level of perceived self-censorship and the lower the level of perceived information sharing, social interaction, and perceived influence. Age, education and years of experience on the board are related only to perceived social interaction.

5 Summary and implications

This study examines to what degree women perceive that they contribute to the decisions on corporate boards, and to what extent this perceived contribution of each woman increases when the ratio of women increases on the board. Overall, we find that women perceive contributions of high levels of perceived influence and information sharing on the board, and low levels of perceived self-censorship. These results are not in accordance with the predictions of tokenism theory, but are more aligned with critical mass arguments and we may conclude that women directors on average are significant influencers. Our respondents do not report to be subject to substantial social barriers in general, but there are variations, and some of these are related to women ratio (except from the perceptions of self-censorship).

We found that the higher the ratio of women, the greater the level of perceived influence, perceived social interaction outside the boardroom, and to some degree, perceived information sharing. Thus, it appears that some of the mechanisms predicted in tokenism theory apply to women who are a minority on corporate boards, and some does not. Also, it could be that these mechanisms are related to ratio and not to gender per se. Thus, when the ratio of women increases, the social barriers that may exist for the minority women seem to disappear. However, our interpretation of the results of our analyses is that on average, women directors do not perceive themselves as tokens, but that a larger ratio of women is beneficial to participation and influence for the women.

The results should be interpreted with some caution as the study is based on the respondents' perceptions only. We do not know, for instance, whether these are shared by their male counterparts in the boardroom. For example, women who perceive themselves as having a large influence on decisions may not be perceived as influential by the men directors, or the chairperson. Influence is difficult to measure objectively, and comparing the perceptions of influence of different groups as well as detecting actual effects on board decision outcomes would be an intriguing issue for further investigation. In another study of women's contributions on boards in Norway (conducted before the quota rule was implemented), Nielsen and Huse (2010a, b) found that strongest in relation to the contributions of women directors, was the respondent's gender (the respondent was the CEO).

Further, social barriers as they are described in literature on tokenism and group minorities are predicted to affect both the majority and minority parts of the group, and as our study was limited to the women directors, important aspects of these

theories are left unexplored. The majority or in-group behaviours would be very interesting to investigate further, specifically the dynamics existing between the out-group and the in-group in boards of directors. Further, it would be fascinating to compare the similarities and differences in minority experiences between men and women. For example, if men have higher social status than women in a specific cultural context, this may have consequences for the token dynamics based on the social power of the tokens. In a study of nursing students, the male tokens were not more socially isolated than their numerically more dominant female counterparts (Fairhurst and Snavelly 1983). Thus, will men also be treated as an out-group when they are a minority on a board, or would this not happen because they have higher social status in the business elite? Consequently, future studies should investigate whether the effect of being a token or minority on a board differs for men and women.

A further limitation is that our study is conducted in Norway, which is a special context across several dimensions. First, the social and economic status of men and women probably varies across different countries, and so does women's presence in leadership positions. Norway is a country with a generally high degree of female participation in the workforce and political life with strong gender equality values. For example, in his study of cultural values in different countries, Geert Hofstede (1984) found that Norway scores very low on the masculine value index, unlike, say, Japan and Austria. Furthermore, Norway has a high ratio of women on corporate boards and may therefore be considered as an extreme case. Third, Norwegian boards have a single board system, similar to the US but unlike e.g. Germany and Austria which have a two-tier system; and unlike the US, Norwegian boards have mandated labour representation, which may impact the tasks and the power of the boards (Bohinc 2010). Consequently, our results cannot be easily generalized to other countries, and so it would be interesting to compare the experiences of Norwegian women directors on boards with comparable women in other countries, specifically addressing whether gender status in society at large is reflected in the boardroom. Finally, in this study, we were not able to distinguish between executive and non-executive directors in our study, neither between chairpersons nor CEOs among our respondents. As non-executives are supposed to have independent monitoring roles on the board, and also during recent years are found to increasingly provide advice and counselling to executive directors (Bezemer et al. 2007), it may be that women directors who are non-executives may perceive themselves to have more influence than executives. Further, we would expect the women who are chairpersons to perceive fewer social barriers and have more influence than the other directors.

Whether an individual is a minority on a board is more complex than just the gender dimension. We did include education, years of experience on the focal board and age as control variables in our study. Nonetheless, more in-depth study of the effects of other individual attributes are warranted, including race, formal education, social background, values, preferences, and attitudes. More particularly, Huse et al. (2009) found that professional background had a stronger effect on board discussions than gender, and so the relative importance of background diversity vs. gender diversity on board performance is a critical issue for corporate

governance research. Further, to what extent do different minority dimensions interact with each other, and what dimension is most important in different settings? This question is important because minority status may vary across situations and time depending on the social context (Westphal and Milton 2000).

In this study, our main focus is on the women ratio in boards. An important scholarly debate is whether it is the number or the ratio of women that is important in ensuring that gender diversity actually has an impact on board performance. Being a lone woman implies a high probability of being a token, while being one of two women improves the situation, where tokenism still exists, but in other forms (Konrad et al. 2008). Being one of three or more women has been considered to be a critical mass where being a woman is normalized, and gender is less of a barrier against acceptance and communication. As Norwegian companies are on average smaller than, e.g. in the US and other large European countries, the boards in our sample are relatively small, with 98% having fewer than eight members. Board size was significantly related to other main variables in our study. In future studies, larger variation in board sizes could be included to further investigate the differences in the impact of number vs. the ratio of women on board processes. Is it that three women are sufficient to be a critical mass on boards of, say, 12 members, or is there a limit with regard to how large the board can be to make three members a critical mass?

A general conclusion from our study is that women generally respond that they contribute to board decisions, and that the women ratio is positively related to the perceptions of women directors in relation to information sharing, social interaction and influence. We believe that board effectiveness is dependent on the ability to access and utilize all available resources on the board, including women. Thus, our results help inform policymakers that an increased women ratio may enable the board to better profit from the benefits of women's resources.

That said, whether a quota rule is the preferred policy for improved gender balance in boards remains an open question. For example, one question raised in the media before the quota rule was implemented in Norway was whether the lack of suitably qualified women in the business elite would weaken the competence of corporate boards (Milne 2009). The appointment of women directors who are less-qualified in the traditional sense, could imply that these women would then not represent a contribution to board performance. It should thus be interesting for policymakers to note that we found no significant differences between women directors in "quota boards" and the rest of our sample regarding the outcome variables. While the relatively low proportion of quota boards in our sample (6.3%) requires cautious interpretation of these results, it does suggest that a quota rule does not substantially affect the position or status of the women directors on these boards, a concern expressed by several women in early discussion of the rule. Accordingly, a quota rule could be an effective policy in rapidly increasing the contributions of women to corporate boards.

However, both the business world and policymakers are sceptical of the quota rule. A women ratio of 40% also represents a substantial increase in the current average ratio for most countries. Our results, showing that perceived social interaction and perceived influence are significantly larger among non-tokens than

tokens, indicate that any increase in the women ratio beyond 15% may be effective in pursuing the political objective of the increased influence of women on boards. However, lone women on boards may encounter substantial social barriers to influence, and policies other than quota rules that could increase the women ratio may also be effective if the political objective is to increase women's contributions to boards. Particularly, after considering the debate on the lack of women with relevant background and experience in the business elite, policies that target search, screening and selection activities in the recruitment processes for board positions may enhance the discovery of hidden resources among women presently overlooked.

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