



# Women's Underrepresentation in Corporate Power in Norway and US: Beyond In-group Favoritism<sup>1</sup>

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## ABSTRACT

Despite increasing gender-equality in many areas, corporate power is still strongly male-dominated. Prevailing research often relies on the cognitive, demand-side mechanism of in-group favoritism based on single-country studies to produce generalized explanations of men's dominance in top management and to recommend remedies, such as gender quotas on boards. However, existing research findings are mixed. We contribute to the research field by analyzing original data from 457 large companies in Norway and the US, examining associations of the gender-composition on boards and in the actual Executive Committees. The predictions of in-group favoritism are partly supported in the US, but largely not supported for Norwegian companies with gender-balanced boards due to quotas. We argue that in-group favoritism is an incomplete explanation. We call for research examining the organizational and societal processes curtailing the supply of qualified women for top-executive positions, across national and regulatory contexts and organizational levels.

## KEYWORDS

*Boards / Career / Gender / Inequalities / In-group favoritism / Management / Norway / Professions / Quotas / Work and occupations / US*

## Introduction

In many rich capitalist democracies, women hold close to half of the nation's jobs and have on average, education levels that meet or exceed those of men.<sup>1</sup> Yet, women remain starkly under-represented at the pinnacle of corporate power. Men's numerical domination of executive positions and corporate boards in large companies is a subject of intense discussion by scholars and policy makers in many nations. This attention has mostly been directed towards the lack of women on corporate boards (e.g., Gabaldon et al. 2016; Terjesen et al. 2009). However, the lack of gender-balance in top-executive positions has also been addressed (e.g., Bertrand et al. 2019; Cook & Glass 2014; Humbert et al. 2018).

Men's near monopoly on corporate power has important consequences. These include the underutilization of the competencies of half the population, gender gaps in power, wages and wealth, and the reinforcement of societal understandings of competent executive leadership as near exclusively male.

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In order to explain the relationship between women's underrepresentation on boards of directors and among top-executives, the literature on gender and top management commonly draws on the cognitive process of in-group favoritism (sometimes called homophily) as the prevailing mechanism (Cook & Glass 2014; Elsaid & Ursel 2011; Kogut et al. 2014; Stainback et al. 2016; Wang & Kelan 2013). This mechanism relies on the social identity theory of group behavior (Tajfel & Turner 1986), which posits that individuals use social and demographic criteria to cognitively distinguish themselves from those seen as different, while associating with those seen as in-group members. These studies argue that men, who dominate boards of directors and other leadership positions, will favor other men and disfavor women in awarding top-executive positions.

The literature also draws on in-group favoritism to recommend remedies, arguing that more women among top decision-makers, especially board directors, will also increase women's representation in executive management (Cook & Glass 2014; Elsaid & Ursel 2011; Skaggs et al. 2012; Stainback et al. 2016). Inspired by this perspective, 10 European countries, with Norway as the first, have implemented gender quotas on corporate boards to increase women's presence in corporate power (Mensi-Klarbach & Seierstad 2020). Further, scholars and policy makers expect that countries with a quota securing a more balanced gender-composition of corporate boards will see a reduction of male in-group favoritism and an increase in the number of women promoted into CEO and other top-executive positions (Matsa & Miller 2011; Wang & Kelan 2013).

Yet, findings are mixed in existing research. Matsa and Miller (2011), Cook and Glass (2014), and Wang and Kelan (2013) find that the gender composition of the board matters for increasing the representation of women in top leadership, and they endorse gender quotas. In contrast, Bertrand et al.'s (2019) study of the Norwegian quota reform finds that the quota does not increase the number of women among the five top earners. Gupta and Raman's (2014) study of US firms finds that the expected positive association between gender-diversity of boards and executive-management only holds when one of the woman board directors is appointed CEO of the firm.

We contribute to the research field and the understandings of these mixed findings both theoretically and empirically. Theoretically, we emphasize societal and organizational structures potentially constraining women's careers as an alternative process that may operate alongside in-group favoritism. Line (operational) positions are often prerequisites for moving up into CEO positions or onto corporate boards (Joy 2008; Smith & Parrotta 2018) and are found to be particularly time- and travel-intensive positions (Halrynjo 2015). We argue that organizational segregation of women out of line (operational) positions combined with societal structures where family responsibilities are unevenly distributed may limit women's opportunities to compete for CEO and board positions. If these structural conditions continue to make an uneven playing field in the competition for top line jobs, board quotas alone will be an insufficient remedy to the problem of male domination of corporate power.

Empirically, we contribute through analyzing the first binational study of this topic and the first to use data on the actual gender-composition of the Executive Committee (EC) reporting to the CEO, including the different gender representations in line- and staff (support)-positions. Earlier studies have explored the relation between women board directors and women executive officers using official register data (e.g., Bertrand et al. 2019; Matsa & Miller 2011). An advantage with this approach is the opportunity to

measure change in the same company over time. However, these data also have limitations. They do not identify the actual EC but instead use the ‘five top-executives’ ranked by Standard and Poor (Matsa & Miller 2011) or ‘top five earners’ (Bertrand et al. 2019) as a proxy for the EC. Yet, the actual EC is often twice that size. Other studies have manually collected information over time, but limited the data to CEO-transitions (Cook & Glass 2014; Gupta & Raman 2014; Wang & Kelan 2013). Thus, crucial information on the gender-composition of the EC and gendered division of line versus staff positions is missing both in registry data and in previous manually collected samples.

In contrast, our original data set of the 457 largest companies (including publicly listed and privately held firms) in Norway and the US is the first binational study on this topic and the first to use data on the actual gender-composition of the EC reporting to the CEO. We also measure the share of women on the EC working in line positions, which is generally required for CEO- and board-promotions (Joy 2008) – in contrast to staff positions, not seen as equally qualifying. Our data is cross-sectional, so we cannot follow companies over time. Instead, we analyze associations across national and regulatory contexts. Our analyses benefit from the fact that Norway was the first country in the world to introduce corporate board quotas requiring 40% of women among stakeholder representatives on the boards of listed companies (fully enacted in 2008). Our data set was compiled 8 years later, allowing sufficient time to compare the associations between the gender-composition of boards and executive line and executive staff leadership in Norway firms bound by the quota, Norway firms not bound, and in US firms, also not bound by a quota.

To preview our results, we find that the support for predictions consistent with in-group favoritism vary by executive level and with the national and regulatory context. We do see some predicted positive associations between the gender-composition of the board and top-executive positions, including line positions. However, we find either no relationship or a *negative* relationship between Norwegian companies under quota regulation and the actual gender-balance on boards and presence of women in top-executive positions. Although there are several arguments in favor of gender quotas on boards, after 8 years, the recommended remedy against in-group favoritism is not associated with a higher proportion of women in executive ranks in the large companies analyzed here. Empirically, we point to the importance of studying the gender-composition of the actual executive positions across different countries and contexts. Theoretically, we argue that since the empirical patterns are not consistent across regulatory regimes, the prevailing emphasis on in-group favoritism limits the explanation of male dominance to a cognitive, demand-side mechanism. Further, our findings of same-gender associations, unrelated to the board quota, could be explained by gendered in-group favoritism but could equally be explained by organizational and societal structures that tend to favor men’s careers. We call for more research on structural processes potentially curtailing the supply of qualified women for executive management in organizations and societies – within and across societal contexts.

## **Cognitive explanations: In-group favoritism in the gender and top management literature**

Much of the literature studying the relation between gender-diversity on boards and in executive positions has adopted in-group favoritism as a ubiquitous cognitive



mechanism to explain the reproduction of male domination of top business positions. Studies of the US show associations between companies with a higher proportion of women on boards of directors and women in management (Skaggs et al. 2012), women on the board and women CEOs (Elsaid & Ursel 2011; Matsa & Miller 2011), and the proportion of women among the five highest paid executives (Matsa & Miller 2011) and less workplace gender segregation (Stainback et al. 2016). Further, studies of the US (Cook & Glass 2014) and Norway (Wang & Kelan 2013) show associations between companies with women board chairs and women CEOs. All these studies reference in-group favoritism as an important mechanism.

Importantly, these studies do not explicitly investigate or measure in-group favoritism. Rather, they adopt this mechanism from the social identity-literature positing that individuals are motivated to attain or preserve positive social identity by the differentiation and favorable evaluation of their in-group, compared to out-groups. Social identity theory sees in-group favoritism as a ubiquitous, cognitive process that unfolds when individuals interact, even when groups are minimally defined and decisions are made anonymously (Tajfel & Turner 1986). Social identity theory is formally gender-neutral, claiming that each demographic group (such as men and women) will prefer members of their own group.

Stainback et al. (2016) use in-group preferencing and out-group exclusion to theoretically account for how women are kept out of 'male' higher-status jobs in the US. In a study of managers in large Swedish companies, Stafsudd (2006) argues that male homophily is the most probable cause of the dearth of women at the top of large companies and that this process will be self-perpetuating without the infusion of a critical mass of women into decision-making positions. Other studies also argue that more women among powerful decision-makers will increase women's opportunities for being hired, mentored, and retained (Gorman 2005; Stainback et al. 2016). In line with these arguments, the gender quota for boards of directors is predicted to lead to spillovers of more women in executive positions (Matsa & Miller 2011; Wang & Kelan 2013).

A few studies in the literature on gender and top management have explored factors constraining not just the demand for but also the supply of women in executive leadership. Bilimoria (2006) interprets her finding of an association between women on boards and in executive management in terms of self-selection. She argues that the mere presence of women board directors signals to employees that women are recognized in this corporation, thus offering a competitive edge to the organization in recruiting and retaining mid-level and high-level managerial women, who are generally in short supply.

## Structural explanations

Women's underrepresentation in business organizations more generally has also been explained by gendered societal structures, which offer alternatives to the prevailing same-gender favoritism. These structures include the gender-division of paid work and family-work and the accompanying status-based expectations that the ideal worker is expected to be unreservedly devoted to work, while the ideal mother is expected to invest similarly intense levels of devotion to her children (Blair-Loy 2003; Blair-Loy & Cech 2017; Ridgeway & Correll 2006).

Many women face tougher work-family negotiations than men. Regardless of gender-equal ideals and career orientation, women – are more likely than men to take on the lion's share of family caregiving both in the US (Jacobs & Gerson 2004) and in the Nordic countries (Halrynjo & Lyng 2009; Rafnsdóttir & Júlíusdóttir 2018). The gendered division of labor favors the careers of executives who are not the primary caregiver, mostly men. Although corporations may have gender-neutral rules for advancement, they may nonetheless be gendered organizations with informal cultures marginalizing women (Wharton & Blair-Loy 2003; Blair-Loy & Cech 2017; Gorman & Kmec 2009) and advancement policies that reward fast-track careers more typical for men than for women (Acker 2006). Based on formal and informal organizational policies, the timing of building an executive career occurs during managers' age of about 30 to 40 (Halrynjo 2015), which are also the chief childbearing years for professional women. Even highly career-oriented women, who subcontract out childcare to family members or paid helpers, are expected to take on the burden of managing the caregivers and taking over when the family's needs exceed that which can be delegated to others (Blair-Loy 2003). US-studies show how the normative assumption of mothers as less committed and less competent workers hinders mother's careers — as the role of primary caretaker is culturally associated with reduced performance capacity for tasks outside the realm of childcare (Correll et al. 2007; Ridgeway & Correll 2006).

These societal and organizational structures help segregate women into the more predictable and family-friendly staff positions in firms (such as Human Resources, Communications, or General Counsel) and out of operational line positions. The top line positions, such as business heads and regional presidents, generally require long days, business travel, and geographical relocation, and are thus particularly unfriendly for those with responsibilities to children and to a partner's career. Business head positions are prerequisites for being promoted to COO (Chief Operational Officer) and CEO (Joy 2008). Further, recent CEO or COO experience is generally required for being appointed to boards (Block & Gerstner 2016; Smith & Parrotta 2018). Thus, the paucity of women in line roles is particularly critical (20-first.com 2014; Institute for Social Research 2018).

In many countries, the few women who have made it onto executive committees tend to be concentrated in staff positions (20-first.com 2014). Yet staff experience is generally not regarded as a qualification for advancement to CEO-positions. If the overrepresentation of women into the more family-friendly staff positions occur at earlier career stages, active and systematic recruitment policies starting at the middle management level, as emphasized by Nordic top-managers (Axelsdóttir & Halrynjo 2018), may be a more effective remedy for increasing gender-balance at the top of the executive ladder than gender quotas for corporate boards.

The association between the share of women (or men) on the board and in executive positions could be explained by bottom-up mechanism, as well as the top-down mechanisms predicted by in-group favoritism: Gupta and Raman's (2014) study of US firms finds that the expected positive association between gender-diversity of boards and executive-management only holds when one of the woman board directors is appointed CEO of the firm. Thus, they argue that the gender-spillover from the board to the executive suite is mainly a consequence of increased supply of qualified candidates, not a general reduction of gender biased favoritism. In contrast, Norwegian companies bound by the quota, facing the limited supply of women in senior operational/line positions, have broadened the appointments of woman board members beyond active CEO/COOs or other business heads/line-positions (Nielsen & Huse 2010). Although the broader recruitments work well



for the boards, the lack of high level line and operational experience may reduce the probability among woman board directors to receive future CEO appointments.

## Hypotheses

We draw on two theoretical mechanisms, in-group favoritism and societal and organizational structures, to motivate our hypotheses for associations between the proportions of women on boards and women in top management positions.

If gender-based, in-group favoritism is a primary mechanism, we would expect positive associations between women's share of board seats, women board chairs and women's share of executive positions within a company. (Conversely, we would also expect associations between men's share of board seats, men chairs, and men's share of EC positions.) Wang and Kelan (2013) argue that a large share of women on boards could reverse the traditional outcomes of in-group favoritism, as women board members could systematically favor women executives and discriminate against men. Cook and Glass (2014) and Matsa and Miller (2011) also draw on in-group favoritism arguing that efforts promoting women on boards will reduce the likelihood of women leaders being viewed as outsiders and thus allowing women greater access to top-positions.

The in-group favoritism literature would expect higher proportions of one gender on the board to be associated with higher proportions of the same gender in executive management. However, in most instances, a positive same-gender association would mean a higher proportion of *men* on the board, as well as in executive positions. Thus, in addition to the in-group favoritism explanations, a positive same-gender-correlation would *also* be consistent with an explanation of societal and organizational structures, shaping different conditions for men and women in the competition for executive positions and board seats.

H1: We expect our main independent variables –

- 1) higher proportion of women on boards
- 2) woman chair
- 3) woman CEO

to be associated with:

- a. a greater likelihood that the CEO position is filled by a woman
- b. a higher proportion of women on the EC
- c. a higher proportion of women in line positions

In order to help distinguish in-group favoritism from structural explanations, we compare companies with and without longstanding gender-balance on their boards. If a critical mass of women in decision-making positions is the key to overcoming male homophily (Kanter 1977; Stafsudd 2006), we would expect strong positive associations between the presence of companies with gender-balanced boards and the proportion of women in executive leadership. Matsa and Miller (2011) argue that policies aimed at increasing female representation on boards, such as the quota adopted in Norway,

will help increase the representation of women in executive management, because men-helping-men homophily would be countered by a women-helping-women homophily.

In our binational population of large firms, gender-balanced boards with at least 40% women are only present in companies regulated by the Norwegian quota. The Norwegian Gender Balanced Scorecard (Institute for Social Research 2018) shows that approximately half of the CEOs (54%) in the 200 largest companies in Norway have had the current position for less than five years. Thus, the succession rate of CEOs is quite high, allowing for several appointments of new CEOs after the full implementation of the gender quota for boards in 2008–2009. In sum, the literature implies that if in-group favoritism is the main mechanism explaining the lack of gender-balance in top management, the representation of women should be particularly strong among companies regulated by the board quota and having at least 40% women on the board.

However, if organizational and societal structures are shaping different career structures for men and women, a quota securing a minimum of 40% of women on the board will remove the symptom (lack of gender-balance on the board) but not the underlying pattern of a dearth of women in corporate leadership. The quota is a top-down policy, under which board members without executive business-head experience could be selected (Nielsen & Huse 2010). If the underlying pattern is related to structures curtailing the supply of women with executive business-head experience, this top-down policy will not change it. This leads us to our second hypothesis:

H2: If the primary mechanism is not in-group favoritism, but societal and organizational structures shaping substantially different conditions for men and women in the competition for executive positions and board seats, we expect that:

A minimum 40% of women on the board (due to gender quota for boards) will *not* be associated with:

- a. a greater likelihood that the CEO position is filled by a woman
- b. a higher proportion of women on the EC
- c. a higher proportion of women in line positions.

Our data are cross-sectional. Our empirical analyses will examine whether the empirical associations predicted by the theoretical frameworks of in-group favoritism and structural explanations are present.

## National and regulatory contexts

We compare Norway – a social democratic, ‘woman-friendly’ welfare state, – and the US – a liberal market economy. In both countries, women have higher levels of education than men do, and have reached near-parity in labor force participation (World Economic Forum 2020).<sup>2</sup> Yet, the countries differ in important ways. Norway is consistently ranked as one of most gender equal countries in the world, and has the longest history of a gender quota on corporate boards. In contrast, the US has no federal laws that explicitly promote gender-balance on corporate boards.



As a response to the dearth of women in top-managerial positions, Norway was the first country to adopt gender quotas for corporate boards.<sup>3</sup> In 2003, the Norwegian parliament made the boards of public limited companies (PLC), inter-municipal companies and state-owned companies subject to legislative gender quotas. Large cooperative companies and municipal companies were respectively included in 2008 and 2009 (Teigen 2012). Private-limited companies in Norway are not bound by the quota.

## Data and methods

In each country, we used public lists of the largest companies and directories of board members. In contrast to other studies, which draw on proxies for the executive committee, such as the five highest paid executives (Bertrand et al. 2019), or only analyze CEOs (Cook & Glass 2014; Wang & Kelan 2013), we carefully constructed a dataset consisting of *all* members of the EC in each company and their job titles. The average size of the EC (including the CEO) in the US is 11 and in Norway is 8. Thus, we are capturing more individuals and a more nuanced picture of the gender-composition of top leadership in each country than in earlier studies.

In the US, corporate governance has traditionally been a one-tier system, in which the CEO and sometimes also other executives, sit on the board of directors. In contrast, the Norwegian Code of Practice for Corporate Governance states that the CEO in publicly listed companies cannot act as a board member and recommends against any other executive personnel serving on the board.<sup>4</sup> Our statistical models control for overlap among these bodies.

## Sample of large companies

In order to construct a bi-nationally comparable dataset we followed the same procedure as far as possible for each country. For the US companies, we started with the 200 largest publicly traded companies on the *Fortune Magazine* 2016 list and the 100 largest privately held on the *Forbes Magazine* 2015 list of America's Largest Private Companies with annual revenue of at least 2 Billion (a total of 216 companies on the *Forbes* 2015 list). For Norway, we started with the 300 largest companies by total revenue drawn from the DN500 list<sup>5</sup> of 2015, as this list includes both publicly listed and privately held companies. From the magazine lists, we obtained values for the company name, revenue, whether it was publicly traded (listed) and the CEO's name and gender.

Next, we followed Glass and Cook (2014) and used the company website as a primary data source for constructing a list of members of the EC. The EC is defined as the CEO and the group of executives who report directly to the CEO. We drew their names and job titles from the company website. We used names, photos, and pronoun usage to assign each EC-member a gender category. The coder-assigned gender categories are men/male and woman/female. We did not come across an executive who appeared to us to have a non-binary gender presentation.

The executive data were collected in 2015–2016 in the US and in 2016 in Norway. When websites were incomplete, in the US we supplemented the data with information available on Bloomberg's company profile dataset, LexisNexis, and Business Insights:



Global. For Norway, we supplemented with Bloomberg and annual reports. We also contacted the companies directly. Most, but not all, companies answered our requests.

After removing companies not passing our criteria of at least four EC-members and adequate information and deleting duplicate companies, we had a US sample of 186 publicly traded and 71 privately held companies, totaling 257. In addition to the common criteria of available information and at least four members of the EC, we added three extra criteria for the Norwegian sample as the Norwegian DN500-list includes a broad range of enterprises: The companies must have a board registered in the Register of Business Enterprises (Brønnøysundregisteret), headquarters located in Norway, and for-profit goals. Health trusts and other state-owned public enterprises with non-profit goals are excluded. Together, these criteria reduced the original Norwegian sample from 300 to 200 companies.

Our primary data source for the US Boards was the ISS (formerly Risk Metrics) Directors subscription database of 2013, measured two years before the roster of company executives was compiled. We supplemented and crosschecked the Board rosters from company websites, the Corporate Affiliations tool on LexisNexis Academic and Bloomberg's company profile. For Norwegian boards, we draw on information from the DN500 list of 2015 and Register of Business Enterprises, one year before the collection of the company executives. We used first names, and when ambiguous, did Google searches for board members' photos, and pronoun usage to assign each EC-member a gender category. We did not come across a board member who appeared to us to have a non-binary gender presentation.

In both countries, we coded EC-members' job titles into line/operational position versus staff/support/other positions. Line roles are positions with profit and loss responsibility, such as Country Head, Business Unit Head, etc. Although strictly speaking a staff role, the CFO (Chief Financial Officer) position is considered a line/operational role in our selection. This is due to the fact that the CFO position is a strategic core function, closely connected to profit and loss responsibility.

Staff-roles provide a support function to executive management. Typical staff-roles include HR, Communications, Legal, etc. When categorizing job-titles, we have used information from the companies' websites, organizational charts and correspondence with the companies.

## Variables

### Outcome Variables

We investigate three outcome variables. The first is the likelihood of having a woman CEO (with male CEO as the excluded reference category). The next two outcome variables are proportions: the proportion of women on the EC (sample range 0–0.67) and the proportion of women among those holding *line* positions on the EC (sample range 0–1.0).

### Independent Variables

Our most important independent variables measuring in-group favoritism are (1) the *proportion of women on the board of directors* (sample range 0–0.67), (2) *woman chair*



(1 = yes, 0 = no), woman CEO (1 = yes, 0 = no), and (3) *actual gender-balance on the board* (1 = yes, 0 = no). According to the detailed rules for gender representation, companies with a smaller board size and those with employee representatives on the board<sup>6</sup> can lawfully avoid having a gender balanced (40% of each gender) board. In order to assess whether gender-balance among decision makers is actually associated with reduced in-group favoritism, our measure of gender-balance includes only companies bound by the quota and which actually have at least 40% of each gender. This measure ensures several years of history with gender-balanced boards. As the gender quota for corporate boards was fully implemented in Norway in 2008–2009, these companies have a high probability for at least seven or eight years of a gender-balanced board.

## Controls

An important control variable is whether the CEO, or other executives, also serve on the board of directors. For the models in Table 3 and 4 we use a binary variable indicating whether the CEO also serves on the board (1 = yes, 0 = no). For the models in Table 5–8, we use the percentage of overlap between members of the EC and the board (range 0–100). Following Gupta and Raman (2014), we control for the size of the board, and add a control for the size of the EC, when relevant. Overlap and group-size is included in all models.

Further, in our last model (model 4), we include the firm-related controls – stock-market listed, industry and revenue – in addition to country. Whether the company is publicly listed on the stock exchange is included to check whether our findings may be explained by different corporate governance structures (1 = yes, 0 = no). As all listed companies in Norway are bound by the quota, we do not control for listed in Norway-only models (4b) in order to avoid multicollinearity, with a minimum of 40% women on the board, our indicator for the quota.

As the context for women's leadership may be shaped by industry, we control for industry measured by the ten GICS (Global Industry Classification Standard) code in 2016. None of these ten codes were individually significant. To create more parsimonious models, we grouped the industries into two categories, 'new' industries (health care, information technology, telecommunication services, and financials) and 'traditional' industries (energy, materials, consumer staples, consumer discretionary, industrials, and utilities). 'New' is coded 1, while 'traditional' is the excluded reference category.

Our models also control for company-size using indicators for revenue. We use log USD for the single-country US models, Log Norwegian Krone for the single-country Norway models, and a within-country revenue ranking for the combined models. Finally, we control for country (1 = US; Norway is the excluded reference category). Table 1 presents descriptive data on the control variables in the sample.

## Analytic strategy

The results section first presents characteristics of the companies in the sample. Next, we present descriptive results (means, chi-squares, and t-tests of significant differences in the means) of the proportion of women in corporate leadership positions. To examine our hypotheses, we present a set of logistic regression models on the likelihood of a company

having a woman CEO (Tables 3 and 4). We then present a set of OLS-regression models on the proportion of women in the EC (Tables 5 and 6) and the proportion of women in line-positions on the EC (Tables 7 and 8). Given our cross-sectional data, we focus on assessing whether associations are consistent with the theoretical mechanisms of same-gender favoritism and with the alternative structural explanation.

Following convention, we describe our data set as a ‘sample’. We might also think of it as a near-complete population of the largest Norwegian and US companies, for which we could gather sufficient data. Our results describe the processes within this population, and we do not generalize statistically beyond this population. Given this, and the relatively small N, our tables indicate with different symbols statistically significant coefficients, ranging from  $p < 0.1$  to  $p < 0.001$ .

## Results

### Descriptive results

Table 1 presents our first set of descriptive results. Norwegian companies have more women on their boards (27.7%) than do US companies (18.1%). However, all the Norwegian companies with gender-balanced boards are bound by the quota.

**Table 1** Gender diversity at the top in Norwegian and US companies

	US	Norway	Difference	Norway: Gender- balanced board	Norway: Not gender- balanced board	Difference
Women on the board (WOB), Mean (SD)	18.1% (9.9)	27.7% (18.3)	9.7%***	45.7% (5.4)	21.7% (17.1)	24.0%***
Woman Chair	4.3%	11.5%	7.2%**	12.0%	11.3%	0.7%
Woman CEO	6.6%	7.5%	0.9%	2.0%	9.3%	7.3%*
Women on the EC (excl. CEO), Mean (SD)	19.2% (13.6)	21.5% (16.2)	2.3%	21.4% (16.2)	21.6% (16.2)	0.2%
Women in line positions, Mean (SD)	22.3% (20.9)	15.2% (19.8)	7.1%***	18.2% (22.7)	14.2% (18.7)	4.0%
<b>Companies, N</b>	<b>257</b>	<b>200</b>		<b>50</b>	<b>150</b>	

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Norway has more women board-chairs than the US (11.5% vs. 4.3%). Norwegian companies have a marginally larger proportion of women on the EC (21.5% vs. 19.2%). Yet, when we examine women in line positions, US companies have a significantly larger proportion of women in line positions (22.3% in the US vs. 15.2% in Norway). In contrast to the prediction of in-group favoritism, the Norwegian firms with gender-balanced boards have a much lower likelihood of a woman CEO, compared to non-balanced companies (2% vs. 9%).

Table 2 presents descriptive statistics on company characteristics, which we will control for in our regression models. The first two columns distinguish between US and



**Table 2** Characteristics of companies by country and, for Norway, by gender-balance on board

	US	All Norway	Difference	Norway: Gender-balanced board	Norway: Not gender-balanced board	Difference
Companies with overlap between Board and EC, N (%)	225 (87.5%)	33 (16.5%)	75.0%***	0	33 (16.7%)	16.7%***
Companies with CEO on Board, N (%)	214 (83.3%)	25 (12.5%)	70.8%***	0	25 (16.7%)	16.7%***
Percentage total overlap between Board and EC, including CEO, Mean (SD)	13.4 (14.3)	3.0 (8.3)	10.4%***	0	4.0 (9.4)	4.0%***
Stock Listed companies, N (%)	186 (72.4%)	62 (31.0%)	41.4%***	39 (78.0%)	23 (15.3%)	62.7%***
Revenue in Millions, Mean (S.D.)	41192 USD (51529.5)	13505 NOK (46259.0)/ 1662 USD (5692.1) <sup>a</sup>	39530USD*** <sup>a</sup>	249345 NOK (88444.3)	9696 NOK (15068.8)	15239 NOK***
EC size, Mean (S.D.)	11.3(5.4)	8.3 (2.8)	3.0***	8.2 (2.6)	8.3 (2.9)	0.1
Board size, Mean (S.D.)	10.7 (3.2)	7.2 (2.1)	3.6***	7.8 (1.9)	7.0 (2.1)	0.8*
Industries (GICS-CODE), N (%)						
'Traditional' (Energy, Materials, Consumer Staples, Consumer Discretionary, Industrials, Utilities)	175 (68.1%)	163 (81.5%)	13.4%***	34 (68%)	129 (86%)	18.0%*
'New' (Health Care, Information Technology, Telecommunication Services, Financials)	82 (31.9%)	37 (18.5%)	13.4%***	16 (32%)	21 (14%)	18.0%*
<b>Companies, N</b>	<b>257</b>	<b>200</b>		<b>50</b>	<b>150</b>	

p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

<sup>a</sup>Revenues in NOK were converted into USD based on exchange rate 1USD = 8.1269 NOK



Norwegian companies. The third and fourth column presents means separately for the 50 Norwegian *companies bound by the gender quota with actual gender-balance on their boards* and for the 150 other Norwegian companies. There were no companies with actual gender-balance on their boards among the US companies or among the Norwegian companies not bound by the quota.

The majority of the US sample companies are publicly listed on the stock exchange, while the majority of Norwegian sample companies are not. The US companies are much larger in terms of revenue<sup>7</sup> and also somewhat larger in terms of EC and board size. Most of the companies in both countries represent 'Traditional' industries (Energy, Materials, Consumer Staples, Consumer Discretionary, Industrials, Utilities). Although a minority, 'new' industries (Health Care, Information Technology, Telecommunication Services, Financials) are more common in the US than in Norway. The one-tier system companies with overlap between the board and the EC are much more common in the US than in Norway. The overlap is mostly due to the CEO also serving on the board, thus the percentage of the total overlap between members of the EC and board is low.

All publicly listed companies are bound by the quota in Norway. However, due to differences in board size and employee representations, not all quota-bound companies in our sample do actually have a gender-balanced board (minimum 40% women). In Norway, the companies with gender-balanced boards have higher average revenue. The companies with gender-balanced boards also have larger board-size and are more often in a traditional industry.

## Multivariate results

Our first hypothesis predicts a positive association between the same gender on the board and in executive positions. The models in Table 3 (combined sample) and Table 4 (US and Norway separately) examine the association between women on the board and the likelihood of a woman CEO.

The first two independent variables, *percentage of women on the board and woman chair*, are associated with a higher likelihood of having a woman CEO, across the combined sample and each country alone (although the coefficient for woman chair is no longer significant in the Norway models 3b and 4b). The board appoints the CEO, and so, these findings support the predictions of in-group favoritism.

Tables 5 and 6 present the association between the proportion of women on the board and the proportion of women on the EC, exclusive of the CEO. This association is positive and statistically significant in all models in the combined sample (Table 5) and the US sample (Table 6). However, for Norway, the association between the percentages of women on the board and women on the EC is not statistically significant (Table 6, models 2b and 3b). Yet, woman chair and woman CEO do remain marginally significant after controls. These results provide some support for Hypothesis 1.

Woman chair is positive and significantly associated with woman CEO in the combined sample and the US sample (Tables 3 and 4, models 3a and 4a), supporting in-group favoritism. Yet, after controls, this association is not present for Norway (models 3b and 4b). Further, in the US sample, having a woman chair seems to be strongly



**Table 3** Logistic regressions. CEO gender, combined sample

<b>Dependent variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Women CEO</b>	<b>Perc WOB</b>	<b>+ Woman chair</b>	<b>+ min 40% WOB</b>	<b>+ Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.04 (0.01)**	0.03 (0.02)+	0.04 (0.02)**	0.04 (0.02)**
<b>Woman Chair</b>		2.24 (0.47)***	2.11 (0.47)***	2.17 (0.49)***
<b>Min 40% WOB</b>			-2.36 (1.10)*	-2.03 (1.13)+
<b>Controls</b>				
Listed on the Stock Exchange				-1.00 (0.53)+
Ranked revenue				0.003 (0.003)
New Industries				0.28 (0.45)
Country US				0.42 (0.71)
Overlap board/CEO	0.57 (0.46)	0.53 (0.47)	0.28 (0.50)	0.26 (0.58)
Board size	-0.002 (0.07)	0.04 (0.07)	0.03 (0.07)	0.03 (0.07)
<b>Constant</b>	-3.98 (0.76)***	-4.29 (0.80)***	-4.24 (0.80)***	-4.39 (0.78)***
<b>N</b>	457	457	457	457
<b>-2 LL<sup>a</sup></b>	221.79	200.96	193.51	189.63

+ p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

negatively associated with women on the EC (Table 6, models 2a and 4a). A closer look at the data reveals that among the 11 companies with a woman chair; the average percentage of women on the EC is only 13.5, compared to 19.4 percent on the EC for the 246 companies with a male chair.

The next set of models finds that higher percentages of women on the board and having a woman CEO are associated with a higher share of women in line positions (Tables 7 and 8), supporting hypothesis 1 and consistent with in-group favoritisms. Nevertheless, the findings of same-gender association also indicate a positive association between men, either explained by male homophily or by societal and organizational structures making it easier for men to compete – for executive – as well as board positions.

However, when we examine hypothesis 2, the outcome of actually having a minimum of 40% women (the suggested remedy against in-group favoritism), we do not find the predicted positive association with a woman CEO. On the contrary, a gender-balanced board has a *negative* and significant association with having a woman CEO [Table 3, model 3 (combined sample) and Table 4, model 3b and 4b (Norway sample)]. Having a gender-balanced board is further not significantly associated with more women on the EC (Table 6, models 3b and 4b) or in line positions (Tables 7 and 8, models 3b and 4b).

Most of the organizational controls are not statistically significant. However, companies listed on the stock exchange are marginally less likely than privately held companies to have a woman CEO in the combined sample (Table 3, model 4). ‘New industries’ have a

**Table 4** Logistic regressions. CEO gender, US and Norway separately

<b>Dependent variable:</b>	<b>1a US</b>	<b>1b Norway</b>	<b>2a US</b>	<b>2b Norway</b>	<b>3b Norway</b>	<b>4a US</b>	<b>4b Norway</b>
<b>Woman CEO</b>	<b>Perc WOB</b>	<b>Perc WOB</b>	<b>+ Woman chair</b>	<b>+ Woman chair</b>	<b>+ Min 40% WOB</b>	<b>+ Controls</b>	<b>+ Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.78 (0.03)**	0.03 (0.02)+	0.06 (0.03)+	0.02 (0.02)	0.04 (0.02)*	0.06 (0.03)+	0.04 (0.02)+
<b>Woman Chair</b>			3.41 (0.74)***	1.32 (0.66)*	1.02 (0.70)	3.36 (0.75)***	0.93 (0.72)
<b>Min 40% WOB</b>					-2.29 (1.10)*		-2.55 (1.13)*
<b>Controls</b>							
Listed on the Stock Exchange						-0.02 (0.94)	-
Revenue							
Log USD						-0.10 (0.41)	
Log NOK							-0.21 (0.33)
New Industries						-0.42 (0.70)	1.36 (0.64)*
Overlap board/CEO	-0.16 (0.68)	1.31 (0.78)+	0.20 (0.80)	1.13 (0.80)	0.87 (0.81)	0.25 (0.81)	0.92 (0.82)
Board size	-0.02 (0.09)	0.07 (0.14)	-0.01 (0.11)	0.12 (0.14)	0.01 (0.14)	0.005 (0.10)	0.10 (0.17)
<b>Constant</b>	-4.00 (1.21)***	-4.27 (1.20)***	-4.30 (1.44)**	-4.54 (1.24)***	-4.47 (1.2)***	-3.47 (3.7)	-1.34 (4.85)
<b>N</b>	257	200	257	200	200	257	200
<b>-2 LL</b>	116.62	100.96	94.92	97.37	90.57	94.33	85.65

+ p &lt; 0.10; \*p &lt; 0.05; \*\*p &lt; 0.01; \*\*\*p &lt; 0.001.



**Table 5** OLS-regressions: Women on EC (exclusive of CEO). Combined sample

<b>Dependent variable:</b> <b>Percentage of women on EC</b>	<b>1</b> <b>Perc WOB</b>	<b>2</b> <b>+ Woman chair &amp; Woman CEO</b>	<b>3</b> <b>+ Min 40% WOB</b>	<b>4</b> <b>+ Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.20 (0.5)***	0.18 (0.05)***	0.25 (0.06)***	0.02 (0.06)***
<b>Woman Chair</b>		0.42 (2.81)	-0.02 (2.80)	-0.07 (2.81)
<b>Woman CEO</b>		5.14 (2.81)+	4.33 (2.83)	4.01 (2.84)
<b>Min 40% WOB</b>			-5.58 (2.71)*	-5.52 (2.90)+
<b>Controls</b>				
Listed on the Stock Exchange				-1.39 (1.88)
Ranked revenue				-0.01 (0.01)
New Industries				1.49 (1.60)
Country US				-1.09 (2.21)
Overlap board/CEO	-0.05 (0.06)	-0.06 (0.06)	-0.06 (0.06)	-0.06 (0.06)
Board size	0.18 (0.23)	0.19 (0.23)	0.11 (0.23)	0.27 (0.27)
EC size	-0.01 (0.16)	-0.03 (0.16)	-0.06 (0.16)	-0.009 (0.16)
<b>Constant</b>	14.65 (2.50)***	14.77 (2.50)***	15.10 (2.50)***	15.01 (2.61)***
<b>N</b>	457	457	457	457
<b>Adjusted R<sup>2</sup></b>	0.04	0.05	0.05	0.07

+ p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.





**Table 6** OLS-regressions: Women on EC (exclusive of CEO), US and Norway separately

<b>Dependent variable: Women CEO</b>	<b>1a US Perc WOB</b>	<b>1b Norway Perc WOB</b>	<b>2a US + Woman chair &amp; Woman CEO</b>	<b>2b Norway + Woman chair &amp; Woman CEO</b>	<b>3b Norway + min 40% WOB</b>	<b>4a US + Controls</b>	<b>4B Norway + Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.37 (0.09)***	0.14 (0.07)*	0.40 (0.09)***	0.09 (0.07)	0.12 (0.09)	0.41 (0.09)***	0.12 (0.09)
<b>Woman Chair</b>			-12.09 (4.61)**	6.94 (3.71)+	6.49 (3.75)+	-11.99 (4.64)**	6.32 (3.78)+
<b>Woman CEO</b>			4.36 (3.76)	9.00 (4.34)*	8.22 (4.44)+	4.27 (3.77)	7.76 (4.52)+
<b>Min 40% WOB</b>					-2.81 (3.26)		-3.13 (3.34)
<b>Controls</b>							
Listed on the Stock Exchange						1.74 (2.49)	
Revenue							
Log USD						-1.14 (1.01)	
Log NOK							-0.08 (1.21)
New Industries						0.08 (1.82)	1.82 (3.03)
Overlap board/CEO	-0.05 (0.06)	0.07 (0.15)	-0.04 (0.06)	0.05 (0.15)	0.04 (0.15)	-0.04 (0.07)	0.04 (0.15)
Board size	0.17 (0.27)	0.40 (0.62)	0.15 (0.27)	0.55 (0.61)	0.50 (0.61)	0.22 (0.28)	0.49 (0.64)
EC size	-0.03 (0.17)	-0.19 (0.42)	-0.03 (0.17)	-0.21 (0.41)	-0.22 (0.41)	-0.04 (0.17)	-0.23 (0.43)
<b>Constant</b>	11.70 (3.51)***	16.22 (5.21)**	11.43 (3.49)***	15.47 (5.13)**	15.51 (5.13)**	20.92 (9.19)*	16.72 (17.52)
<b>N</b>	257	200	257	200	200	257	200
<b>Adjusted R<sup>2</sup></b>	0.07	0.01	0.09	0.05	0.05	0.09	0.04

+ p &lt; 0.10; \*p &lt; 0.05; \*\*p &lt; 0.01; \*\*\*p &lt; 0.001.



**Table 7** OLS-regressions: Women in line positions: Combined sample

<b>Dependent variable: Percentage of women in line</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	<b>Perc WOB</b>	<b>+ Woman chair &amp; Woman CEO</b>	<b>+ Min 40% WOB</b>	<b>+ Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.18 (0.07)**	0.13 (0.07)+	0.17 (0.08)*	0.21 (0.08)**
<b>Woman Chair</b>		2.79 (3.89)	2.53 (3.90)	3.10 (3.85)
<b>Woman CEO</b>		13.93 (3.89)***	13.45 (3.93)***	13.79 (3.90)***
<b>Min 40% WOB</b>			-3.32 (3.77)	-1.48 (3.98)
<b>Controls</b>				
Listed on the Stock Exchange				0.64 (2.57)
Ranked revenue				-0.01 (0.02)
New Industries				2.00 (2.19)
Country US				9.31 (3.03)**
Overlap board/CEO	0.02 (0.08)	-0.003 (0.08)	-0.006 (0.08)	-0.11 (0.09)
Board size	0.88 (0.32)**	0.93 (0.31)**	0.88 (0.32)**	0.30 (0.37)
EC size	0.18 (0.22)	0.13 (0.22)	0.11 (0.22)	0.10 (0.23)
<b>Constant</b>	5.07 (3.51)	5.37 (3.46)	5.56 (3.47)	8.04 (3.57)*
<b>N</b>	457	457	457	457
<b>Adjusted R<sup>2</sup></b>	0.04	0.06	0.06	0.09

+ p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001



**Table 8** OLS-regressions: Women in line position. US and Norway, separately

<b>Dependent variable:</b> <b>Women CEO</b>	<b>1a US</b> <b>Perc WOB</b>	<b>1b Norway</b> <b>Perc WOB</b>	<b>2a US</b> <b>+ Woman chair</b> <b>&amp; Woman CEO</b>	<b>2b Norway</b> <b>+ Woman chair</b> <b>&amp; Woman CEO</b>	<b>3b Norway</b> <b>+ Min 40%</b> <b>WOB</b>	<b>4a US</b> <b>+ Controls</b>	<b>4B Norway</b> <b>+ Controls</b>
<b>Independent variables</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>	<b>B (s.e.)</b>
<b>Percentage of women on board</b>	0.28 (0.14)*	0.27 (0.08)***	0.22 (0.14)	0.21 (0.09)**	0.21 (0.10)*	0.20 (0.15)	0.21 (0.10)*
<b>Woman Chair</b>			-4.25 (7.25)	6.84 (4.40)	6.82 (4.46)	-4.30 (7.31)	6.55 (4.48)
<b>Woman CEO</b>			16.50 (5.91)**	12.91 (5.15)**	12.88 (5.28)*	16.55 (5.94)**	11.71 (5.35)*
<b>Min 40% WOB</b>					-0.14 (3.88)		-0.64 (3.96)
<b>Controls</b>							
Listed on the Stock Exchange						2.97 (3.92)	
Revenue							
Log USD						-0.54 (1.59)	
Log NOK							-1.07 (1.43)
New Industries						0.37 (2.86)	3.89 (3.59)
Overlap board/CEO	-0.15 (0.10)	0.24 (0.18)	-0.17 (0.10)+	0.21 (0.17)	0.21 (0.17)	-0.15 (0.10)	0.22 (0.17)
Board size	0.16 (0.43)	0.77 (0.73)	0.20 (0.42)	0.90 (0.73)	0.90 (0.73)	0.17 (0.44)	0.99 (0.76)
EC size	0.05 (0.26)	-0.77 (0.50)	-0.01 (0.26)	-0.79 (0.49)	-0.79 (0.49)	-0.03 (0.26)	-0.73 (0.51)
<b>Constant</b>	16.98 (5.54)**	7.76 (6.19)	17.70 (5.48)***	7.02 (6.08)	7.02 (6.10)	21.35 (14.46)	22.17 (20.75)
<b>N</b>	257	200	257	200	200	257	200
<b>Adjusted R<sup>2</sup></b>	0.02	0.08	0.05	0.10	0.10	0.04	0.10

+ p &lt; 0.10; \*p &lt; 0.05; \*\*p &lt; 0.01; \*\*\*p &lt; 0.001



higher likelihood of having a women CEO than traditional industries in Norway (Table 4, model 4b). Six of 37 companies in 'new industries' have a woman CEO, compared to nine of 163 in 'old industries'. Nonetheless, only 16 of the new industries companies have a gender-balanced board (quota-regulated) and none of these has a woman CEO.

Interestingly, women in line positions are more common in the US than in the Norwegian companies, even after controlling for all the other factors in the model (Table 7, model 4). This finding may indicate that the organizational and societal structures may be more challenging in Norway.

## Discussion and Conclusion

Women's underrepresentation at the pinnacle of corporate power has typically been explained in the literature on gender and top management as a cognitive process of in-group favoritism, with gender quotas as the recommended remedy. This theory has typically been used as a universal explanation of the male domination of corporate power but has not previously been investigated explicitly across different contexts. We have contributed to this knowledge gap by critically investigating the predictions of in-group favoritism cross-nationally, and under different regulatory regimes.

Same-gender favoritism would predict consistently positive associations between the proportion of women on boards and the proportion of women at all executive levels under study. Our models show mixed support for these predictions across outcomes and across national and regulatory contexts. We do find associations between proportionally more women on boards and a higher likelihood of having a woman CEO across all three samples, with stronger associations in the US than in Norway. Since the board appoints the CEO, these findings support the predictions of our first hypothesis in line with in-group favoritism and earlier research.

However, we find that the associations between women's representation on boards and in executive positions only occur in US companies and in Norwegian companies *not* governed by the quota. This result may be explained in part by cultural signaling (Bilimoria 2006), as companies that *voluntarily* initiate selecting more women to their board may signal a specific interest in female talent. Further, as the positive same-gender associations predicted by Hypothesis 1 in most cases indicate more *men* on both sides of the corporate top-bodies, these results could also be explained by societal and organizational structures favoring men's careers both as executives and board members.

Hypothesis 1 reasoned that if in-group favoritism among board members is a universal mechanism explaining the male dominance in top management, women's representation among CEOs, on the EC and in line positions should be particularly strong among quota-regulated companies with at least 40% women on the board. Importantly, we find no support for this. Gender-balance on the board has no statistically significant association with the proportion of women on the EC or in line positions, and it has a statistically significant and *negative* association with the chance of having a woman CEO. Although there are other utility and justice arguments for quotas, including an increased focus on merit and competencies on the boards themselves (Seierstad 2016), quotas and the long-term gender-balance they create on boards are *not* associated with more gender-balance in *executive* positions. Thus, the recommended remedy does not operate as predicted by in-group favoritism.

Our results are based on cross-sectional data and cannot identify causal mechanisms. Instead, our analyses assess whether the empirical associations predicted by the theoretical frameworks of in-group favoritism and structural explanations are present or not. To help identify the contributing effects of cognitive in-group favoritism, societal and organizational structures, and normative understandings of women's and men's roles, across national and cultural contexts, future longitudinal research should include the gender division of the actual executive committee and in executive line and support positions.

We note that our findings are consistent with Bertrand et al.'s (2019) finding that the board quota does not result in more women among the five top earners. Our results are also consistent with Gupta and Raman's (2014) findings that a higher proportion of woman board members increases the likelihood of a woman CEO only when she is recruited from the board of the company, which they argue is due to a more visible supply rather than reduced in-group favoritism. Probably, this type of internal recruitment will also require that the board member already has former experience as CEO or top business-head.

Further, our finding of no positive relationship between board quotas, and women in executive positions, support the understanding that the lack of gender-balance in executive roles is linked to societal and organizational structures favoring men's careers, thus limiting the supply of women with senior operational experience (Hypothesis 2). Research suggests that the most important qualification for being appointed to a board is to have active or recent high-level operational experience such as CEO, COO or top business head (Block & Gerstner 2016; Smith & Parrotta 2018). Our data show that women are particularly scarce in these positions. Upward mobility generally, and promotion to CEO especially, often require substantial experience leading an operational, profit and loss center of business.

Since line experience is considered a prerequisite for promotion to CEO and to being selected for corporate boards (without gender quotas), the segregation of women out of line positions could help explain the domination of men both in CEO and board positions. To get to the executive suite, managers must scale a steep, intensive career-path during the first decade of business careers. The timing of this steep career-path coincides with women's childbearing years and with socially structured gender-inequalities in couples' paid work and caregiving responsibilities, creating hurdles to women's careers, especially in line positions.

Despite the fact that Norway is consistently ranked as one of the most gender equal countries in the world (World Economic Forum 2019) while the US is ranked much lower, the US shows a higher proportion of women in the time- and travel-intensive line/operational positions in the EC, compared to Norway. Norway offers state supports, such as long paid parental leaves and public daycare, yet the gender gap in career achievement widens after childbearing, partly related to mothers' long leaves, short daycare hours and the unequal division of domestic labor (Bütikofer et al. 2018; Hardoy et al. 2017; Seierstad & Kirton 2015). While paid private childcare in the home is widely available and accepted in the US (Stone & Lovejoy 2019), it is seen as violating the ideal of involved parenthood among elite professionals in Norway (Halrynjo & Lyng 2009). In both countries, gender differences in management careers are impacted by whether one has the resource of a caregiving partner without an intensive job (Cha 2010; Halrynjo & Lyng 2009).



Although scholars and political decision-makers have emphasized cognitive demand-side explanations and solutions through increasing the share of women on the boards, many Nordic managers actually support a combination of supply- and demand-solutions, including more gender-equal division of childcare, as well as the active recruitment of women from middle management level (Axelsdóttir & Halrynjo 2018). Since in-group favoritism, and its remedy of gender quotas for boards, do not fully explain or solve the lack of gender-balance in executive offices, it is time for scholars and policy-makers to direct more attention to the interconnection of societal and organizational structures that help shape the supply of women and men for top management positions in the Nordics and in the US.

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## Notes

<sup>1</sup>[http://www3.weforum.org/docs/WEF\\_GGGR\\_2020.pdf](http://www3.weforum.org/docs/WEF_GGGR_2020.pdf)

<sup>2</sup>[http://www3.weforum.org/docs/WEF\\_GGGR\\_2020.pdf](http://www3.weforum.org/docs/WEF_GGGR_2020.pdf)

<sup>3</sup>Gender quotas for corporate boards are regulated through the Company Act legislation. A company that does not have a legal board will be subject to forced dissolution.

<sup>4</sup>Overview of the 500 largest Norwegian companies by revenue.

<sup>5</sup>If the board has two or three members; both genders must be represented, four or five members, each gender must be represented by at least two members. Six to eight members; each gender must be represented by at least three members. Nine members or more; each gender must be represented by at least 40%.

<sup>6</sup>In companies with more than 50 employees, employee representatives should constitute one-third of the board members. If there is more than one representative, both genders shall be represented. If women (or men) constitute less than 20% of the work-force, this rule does not apply. Thus, in traditional industries all employee representatives may be men.

<sup>7</sup>The average revenue of the Norwegian companies is approximately \$ 1662 Million compared to the US average of \$ 41,192 Million.

<sup>8</sup>Log-likelihood ratio.

