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# Doing more with more: Women on the board and firm employment

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## ABSTRACT

While corporations play a pivotal social role by creating employment opportunities, managers typically boost profitability during economic downturns by downsizing. Using a panel of US-listed firms from 2007–2016, we explore the impact of female representation on the board of directors (BOD) on firm-level employment. We find that firm-level employment increases while the likelihood of downsizing decreases with BOD female representation. In corroboration, the level of under-staffing, and hence its associated problems, reduces with BOD female representation. The impact of female directors on employment is stronger in the absence of tokenism, more evident during downturns and shaped by female director typology. Importantly, we find that, while over-staffing problems might emerge, overall employee productivity improves with female representation, suggesting that female directors do not sacrifice shareholder value in pursuit of employee interests. Overall, our results suggest that female directors are crucial in promoting employment in society.

## 1. Introduction

Labour is one of the highest costs of doing business, accounting for up to 40% of total operating costs in several industries (Dierynck et al., 2012; Gu, 2018). Hence, firms seeking to streamline activities, improve efficiency or surmount other transient challenges in the business environment typically freeze or cut employment, with adverse implications for society. A 2010 Gallup poll on staffing levels across US companies concluded that four in 10 U.S. workers believe their company was under-staffed.<sup>1</sup> Concerns around systemic under-staffing, low employment growth and mass layoffs are prevalent across organisations and traverse industry and country boundaries (Hudson & Shen, 2015; Poulston, 2008), yet there is a paucity of evidence about its antecedents and consequences. Given that the board of directors (BOD) is ultimately responsible for decisions that directly impact employment growth (Chen & Kao, 2020; Creek et al., 2019; Muñoz-Bullón & Sánchez-Bueno, 2011; Neckebrouck et al., 2018), our paper explores how its features, specifically BOD female representation, shape firms' employment decisions.

Research on BOD female representation has gained traction in recent years (Chen & Kao, 2020; Kirsch, 2018). While women constitute a substantial proportion of the labour force, they are under-represented in top leadership positions (Adams & Ferreira, 2009; Kirsch, 2018). Even when present, the number of women on the board is generally

too few to influence decision-making (Adams & Ferreira, 2009; Torchia et al., 2011). Several studies explore how women in boardrooms influence corporate social responsibility (CSR) performance (Bøhren & Strøm, 2010; Cumming et al., 2015; Nadeem et al., 2017; Nekhili & Gatfaoui, 2013). Besides the mixed or inconclusive findings from the literature (see Byron & Post, 2016, for a review), the measures of CSR (i.e., indices) used in prior research do not allow for inferences on the impact of female directors on employment to be drawn. Related to our work, Chen and Kao (2020) and Matsa and Miller (2013) examine how female directors impact firm performance through their influence on downsizing decisions in Taiwan and Norway, respectively. Our work extends this literature by, amongst other things, exploring how (executive and non-executive) female directors impact employment and downsizing decisions at the firm level.

Drawing from upper echelons (Hambrick & Mason, 1984) and social role (Eagly, 1987) theories, we contend that, because women possess different values from men – specifically, they tend to be more compassionate, inclusive and ethical in their decision-making (Kirsch, 2018) – they are more likely to promote employment and oppose downsizing initiatives, particularly when sufficiently represented in the boardroom. We use a panel of US-listed firms consisting of 8170 firm-year observations to test our predictions.

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<sup>1</sup> <https://news.gallup.com/poll/143480/Four-Workers-Say-Company-Understaffed.aspx>

We first explore whether firm-level employment increases while the likelihood of downsizing decreases with female representation. Here, we find that female representation is associated with higher levels of firm-level employment and a lower likelihood of a 10 to 20% reduction in the number of employees (i.e., downsizing). We show that, while female executive directors directly influence firm-level employment, non-executive female directors play a more significant role in reducing the likelihood of downsizing. We then explore the relevance of a critical mass of women on the board within this context. Consistent with our predictions, the impact of female representation on employment outcomes is more pronounced when there is a critical mass of women on the board and during periods of economic downturn.

While we argue that female representation is good for society through its positive influence on employment, this higher level of employment might (1) not address systemic under-staffing issues (Hudson & Shen, 2015; Poulston, 2008), (2) lead to a decline in employee productivity and/or (3) create other inefficiencies due to over-staffing. We conduct further analyses to rule out these possibilities. Here, we find evidence suggesting that female directors reduce under-staffing within firms. Meanwhile, we also observe a positive but weakly-significant relationship between female representation and over-staffing, consistent with arguments that female representation increases employment beyond normal levels. Importantly, we document evidence that, despite potential over-staffing problems, female directors do not generally sacrifice shareholder value by pursuing employee interests.

Our study makes several contributions to the literature. Firstly, we directly explore how board characteristics influence employment outcomes (level of firm employment, downsizing and under-staffing) and by extension, employment in society. Much of the prior research exploring firm-level determinants of employment focuses on internal features such as firm size, firm age and ownership and external networks such as political connections (Neckebrouck et al., 2018). Our study complements prior research by providing evidence on how women on the BOD impact employment decisions.

Unique to our study, we document the differing impacts of executive and non-executive female directors on employment outcomes, thus highlighting the importance of female directors at the executive and non-executive levels. Additionally, we generate new insights by showing that firms with female directors on their boards are better positioned to manage the adverse effect of credit supply shocks (financial crisis) on employment.

Our work extends prior research on the impact of gender diversity on organisational outcomes by highlighting the impact of women on employment, particularly when sufficiently represented on the board. We, for example, show that, on their own, female CEOs and board chairs have an insignificant impact on employment outcomes. Finally, while under-staffing remains a prevalent phenomenon in organisations, research on the phenomenon has, perhaps, been stifled by the lack of adequate proxies. Consistent with measures developed elsewhere (Roychowdhury, 2006; Tunyi et al., 2019, 2022), we propose a regression-based approach for measuring under-staffing. This allows us to extend prior studies (Dietzel & Coursey, 1998; Poulston, 2008) exploring the impact of under-staffing in healthcare and hospitality settings.

The rest of our paper is organised as follows: Section 2 discusses theory and sets out our hypotheses. Section 3 discusses our methodology. Section 4 discusses the results, and Section 5 presents concluding remarks.

## 2. Theory, evidence and hypotheses

### 2.1. Overview of prior evidence on female directors

Prior research suggests that women on the board improve organisational outcomes and board processes through enhanced monitoring (Bugeja et al., 2016; Gull et al., 2018) and by bringing fresh

attributes, attitudes, values and traits which men do not have (Levi et al., 2014). Consequently, their presence on the BOD is associated with enhanced organisational outcomes, including better firm performance (Green & Homroy, 2018), improved reporting quality (Gull et al., 2018), lower executive pay (Bugeja et al., 2016) and lower finance cost (Luo et al., 2018) amongst others.

An emergent stream of research adopts a stakeholder perspective of the role of female directors by exploring how women in corporate boardrooms influence ethical decision-making and CSR within firms (see Byron & Post, 2016, for a meta-analysis of the literature). However, it is difficult to draw inferences on how directors' gender influence employment outcomes (such as firm-level employment, downsizing and under-staffing) from this literature for two reasons. Firstly, the findings on the link between women on the board and CSR are generally mixed and context-dependent (Byron & Post, 2016). For example, while several studies document positive effects of female directors on CSR (e.g. Cumming et al., 2015; Nadeem et al., 2017; Nekhili & Gatfaoui, 2013), others report a negative or weak link (e.g. Bøhren & Strøm, 2010). Secondly, prior studies on gender and CSR capture CSR activity using very broad and noisy measures (predominantly KLD ratings) which reflect firms' performance across various environmental, social and governance dimensions including diversity, community, environmental protection, philanthropy and ethics, amongst others (Byron & Post, 2016).

Our work is directly related to a handful of studies that explore how directors' gender influences employment outcomes within firms (Bernardi et al., 2006; Chen & Kao, 2020; Fan et al., 2021; Liu, 2021; Matsa & Miller, 2013, 2014). We present these studies in Table 1. Summarily, these studies find that firms led by female directors are characterised by a better working environment (Bernardi et al., 2006), higher employee satisfaction (Creek et al., 2019), fewer labour law suits (Liu, 2021), higher non-monetary employee benefits (Fan et al., 2021) and a lower likelihood of downsizing (Chen & Kao, 2020; Matsa & Miller, 2013, 2014). Nonetheless, these studies are still divided on how female directors' influence on the likelihood of downsizing impacts overall performance. While Matsa and Miller (2013) find that a lower likelihood of downsizing increases labour costs with negative impacts on profitability, Chen and Kao (2020) argue that such talent retention improves firm performance. Importantly, these studies mainly address the issue of downsizing (Chen & Kao, 2020; Matsa & Miller, 2013, 2014), leaving questions around firm-level employment and the issue of under-staffing unanswered. Our study contributes to this budding literature by documenting the role of female director typology (executive versus non-executive) and critical mass in shaping a myriad of employment outcomes, including employment levels, downsizing and under-staffing.

### 2.2. Theoretical perspectives

Prior research draws from various theoretical lenses to explain the link between manager characteristics, decision-making and firm outcomes. Table 1 presents some of the theoretical frameworks that related studies have adopted. Consistent with prior research exploring how women influence stakeholder-oriented firm outcomes such as firm ethical behaviour (Chen & Kao, 2020; Dadanlar & Abebe, 2020; Liu, 2021; Post & Byron, 2015), we evoke upper echelons theory (UET). In addition, given our focus on employment outcomes, we also draw on social role theory to complement UET.

The central premise of UET is that the personal values, experiences and personalities of directors influence their interpretation of the situations they face, their decision-making and hence, organisational outcomes (Hambrick, 2007; Hambrick & Mason, 1984). UET posits that directors' cognitive frames are shaped by their prior knowledge, experiences and values. Because cognitive frames influence information-seeking and information evaluation processes, directors' prior knowledge, experiences, and values directly influence decision-making and,

**Table 1**  
Directors' gender and employment-related outcomes.

Paper	Sample	Methodology	Key findings	Theoretical lens
Bernardi et al. (2006)	500 US firms (Fortune 500) between 1999–2001	Difference of means <i>t</i> -tests	Employee perceptions of the quality of the working environment are more positive at companies with more female directors.	Contingency, social issue life cycle and signalling theories
Matsa and Miller (2013)	104 Norwegian test firms (matched to 1103 Nordic control firms)	Difference-in-Difference regression around the 2006 Norway Gender Quota law	Corporate profitability declined after the Norwegian gender quota law because of increased labour costs from fewer layoffs and higher relative employment.	No specific theoretical frame.
Matsa and Miller (2014)	4030 US private firms in 2003	Tobit regressions	Private firms owned by women are less likely to downsize their workforce. These firms operate with greater labour intensity and are less likely to hire temporary workers—labour hoarding.	No specific theoretical frame.
Creek et al. (2019)	420 firms	GLS regression models	Board diversity increases employee satisfaction as diverse boards adopt programmes that signal organisational support for employees and benevolence	Organisational support and social exchange theories
Chen and Kao (2020)	1329 Taiwanese firms between 1996–2017	Dynamic panel (mediation) analysis	Boards with more female directors engage in less corporate downsizing, and this leads to improved firm performance.	Upper echelons and psychological contract theories.
Fan et al. (2021)	7102 firm-year observations between 1992–2018	OLS regressions	Firms with female CEOs incur lower average labour cost, partly because female CEOs offer higher non-monetary employee benefits in lieu of monetary compensation.	No specific theoretical frame.
Liu (2021)	1921 US firms between 2001–2014	OLS regressions	Firms led by female CEOs experience fewer labour lawsuits, particularly coercion lawsuits alleging egregious managerial conduct such as threats and retaliation.	Gender socialisation, upper echelons and stakeholder theories
<b>Current study</b>	1308 US firms (8170 firm-year observations) between 2007–2016	Panel fixed-effects regression and random-effects probit models	Female executive directors drive employment growth while female NEDs reduce the likelihood of downsizing. Collectively, female directors are associated with lower under-staffing problems and higher employee productivity.	Upper echelons and social role theories

ultimately, corporate strategy (Byron & Post, 2016; Hambrick & Mason, 1984; Post & Byron, 2015). Based on UET, Byron and Post (2016) advance reasons why women on corporate boards are likely to enhance social performance. Firstly, women possess alternative experiences and knowledge which enable boards to more carefully consider how strategic decisions impact a wide range of stakeholders (including employees). Secondly, women tend to have a stronger moral orientation, social sensibility and ethical attitudes leading to a more powerful feeling of responsibility for others' wellbeing. Thirdly, women are likely to have different career backgrounds from men, which may also explain their different perspectives. Specifically, studies show that female directors are less likely to have a business background and are more likely to have experience in philanthropic and community service activities than males (Hillman et al., 2002). Hence, women may provide stakeholder-focused perspectives in response to issues and problems or to shape business strategy (Hillman et al., 2002).

Since the cognitive framing of the board (and hence, strategic decision-making), partly depends on the number of women on it (Byron & Post, 2016; Post & Byron, 2015), we might expect female-dominated boards to be more moral, ethical and stakeholder-conscious in their decision-making.

Prior studies on female representation on the board (such as Bernardi et al., 2009; Byron & Post, 2016; Cumming et al., 2015; Matsa & Miller, 2013; Nadeem et al., 2017; Nekhili & Gatfaoui, 2013; Post & Byron, 2015, amongst others) implicitly assume that male and female directors have integrally different cognitive frames and hence, director heterogeneity in terms of gender is likely to influence different firm outcomes. The argument around the heterogeneity in *values* (and hence, cognitive frames) across directors of different genders is particularly relevant to our theoretical framing. Hence, we draw on social role theory to strengthen our framing.

Social role theory suggests that differences in behaviour, values and traits across different genders exist and is a consequence of socially-sanctioned role expectations that are embedded in social and economic interactions (Dadanlar & Abebe, 2020; Eagly, 1987; Eagly et al., 2000). Proponents of the social role theory argue that the societal expectation of women is to have a “communal” orientation with an emphasis on showing concern for others and with a limited inclination towards selfish behaviour. On the contrary, men typically exhibit “agentic”

behaviour such as independence, assertiveness and competence (Cumming et al., 2015; Dadanlar & Abebe, 2020). Prior research, therefore, presumes that women tend to be more compassionate, inclusive and ethical in their decision-making than men (Eagly, 1987; Kirsch, 2018). Consistent with social role theory and in relation to our study, prior studies find that firms with gender-diverse boards are more likely to adopt programmes that signal organisational support for employees (e.g., generous benefits, initiatives to promote a healthy work-life balance, subsidised child care, flextime, cash-profit sharing etc.) and these programmes enhance employee satisfaction and promote retention (Creek et al., 2019).

From a human capital development perspective, pro-employment initiatives are perhaps, critical for organisational stability, cohesion, knowledge development and long term survival. Indeed, prior studies have shown that anti-employment initiatives (such as aggressive downsizing or mass employee layoffs) are associated with subsequent declines in profitability for reasons which could include the emergence of under-staffing problems, a loss of tacit knowledge, a decline in organisational cohesion and a loss of social ties resulting from the departure of staff (Chen & Kao, 2020; Guthrie & Datta, 2008; Muñoz-Bullón & Sánchez-Bueno, 2011). Conversely, from a resource-based perspective, human capital growth through new employees might introduce new knowledge and skills that firms require to retain or develop a competitive advantage within their industry (Boxall, 1996).

Drawing on the preceding arguments, we contend that female directors are more likely to be compassionate, nurturing and empathetic when making employment-related decisions. We expand on our conjectures and develop testable hypotheses below.

### 2.3. Women on the board and firm employment

Firms have an incentive to actively manage labour costs for several reasons. Firstly, the array of labour costs (including wages and salaries, employment benefits, payroll taxes, social contributions, recruitment, training and development expenditures) associated with employing, managing and retaining staff make up a substantial proportion (up to 40%) of the cost of doing business (Dierynck et al., 2012; Gu, 2018; Pinnuck & Lillis, 2007). Secondly, compared to other investments (capital expenditure), investments in employees are generally more

liquid and reversible. Hence, firms might resort to reducing investment in employees to address financial difficulties (Pinnuck & Lillis, 2007). Thirdly, liberalised labour markets in several countries have enhanced firms' flexibility in managing labour costs through dismissals and the use of short- or fixed-term contracts (Heyes & Lewis, 2015; Wang & Heyes, 2020). Taken together, firms might ignore the human side of employment and resort to "doing more with less" employees to improve financial performance.

Drawing from upper echelons and social role theoretical perspectives, we contend that women on corporate boards are likely to be more sensitive, sympathetic, tolerant, supportive and empathetic towards employment-related issues than men, resulting in higher staff retention, better job protection and improved employment outcomes within firms. As part of their corporate social responsibility strategy, firms with female directors on the board might introduce or sustain better stakeholder-oriented policies and practices (e.g., generous benefits, initiatives to promote a healthy work–life balance, subsidised child care, flexible working, cash-profit sharing etc.) which are likely to attract and retain a diverse range of employees (Byron & Post, 2016; Chen & Kao, 2020; Creek et al., 2019).

Further, we contend that female directors might play a key role in addressing systemic under-staffing problems within firms by promoting the recruitment of new employees (Hudson & Shen, 2015; Poulston, 2008). Under-staffing,<sup>2</sup> when it occurs, leads to employee exhaustion, stress and burnout and negatively impacts job satisfaction, employee turnover, productivity, customer satisfaction and overall firm performance or profitability (Poulston, 2008; Ulrich et al., 1991).

Overall, we predict that women in boardrooms are likely to positively influence firm-level employment through their support of employee-oriented initiatives. Our first testable hypothesis is therefore stated as follows;

**Hypothesis 1 (H1).** *Firm-level employment increases with BOD female representation.*

Related to our first hypothesis, we contend that one important channel through which female directors improve firm employment is by reducing the likelihood of significant employee layoffs or downsizing—a decision which is directly under the purview of the BOD (Chen & Kao, 2020; Guthrie & Datta, 2008). Downsizing has become commonplace over the last three decades as several firms have routinely adopted this strategy to cut cost and boost short term profitability (Chen & Kao, 2020; Datta et al., 2010; Guthrie & Datta, 2008). However, downsizing through significant employee layoffs negatively affects employee wellbeing, breaches the psychological contract between employers and employees, reduces employee commitment, reduces organisational cohesion and might directly create under-staffing problems within firms (Harney et al., 2018). Further, downsizing might negatively impact society by increasing unemployment and reducing social welfare. Importantly, prior research suggests that firms that engage in downsizing experience a subsequent decline in profitability (Guthrie & Datta, 2008), thus questioning the rationale for downsizing decisions.

We argue that, compared to their male peers, because female directors tend to be more self-transcendence and empathetic towards the well-being of employees as predicted by social role theory (Dadanlar & Abebe, 2020; Eagly et al., 2000), they are less likely to support downsizing initiatives at the board level. Thus, drawing on these arguments, we hypothesise that;

**Hypothesis 2 (H2).** *The likelihood of downsizing declines with BOD female representation.*

<sup>2</sup> A situation where there are too few employees to complete the required work expected of the group or fulfil essential tasks and functions of a unit (Dietzel & Coursey, 1998; Poulston, 2008).

#### 2.4. Female director typology and firm employment

So far, we have argued that women on the BOD influence employment (H1) and downsizing decisions (H2), irrespective of whether these women are insiders (executive directors) or outsiders (NEDs). However, prior research suggests that director typology (executive versus non-executive) shapes decision-making around social issues (Cabeza-García et al., 2018). For example, because of reduced pressure from competitors, broader experience and independence from top executives, non-executive (outside) directors exhibit more awareness and sensitivity to the social demands of the firm, including the protection of other stakeholders, as well as the environment (Cabeza-García et al., 2018; Hafsi & Turgut, 2013; Haniffa & Cooke, 2005; Ibrahim et al., 2003). Inside (executive) directors, on the other hand, are more likely to pursue profit and shareholder value maximisation objectives at the cost of social initiatives (Cabeza-García et al., 2018), partly because their pay or rewards might be sensitive to performance metrics that emphasise profitability and share price growth. Hence, to the extent the specific employment and downsizing decisions are motivated by CSR motives, we might find that female NEDs enhance employment growth more than their executive counterparts.

However, executive directors have direct control over the day-to-day operational management of the firm (Chen & Kao, 2020; Creek et al., 2019). Thus, we contend that female executive directors plausibly have a stronger impact on day-to-day recruitment decisions (Chen & Kao, 2020; Dadanlar & Abebe, 2020) and, consequently, the growth of employment within firms (i.e., H1) than female NEDs. On the other hand, non-executive female directors potentially play a stronger role in dissuading firms from engaging in significant workforce reductions. The rationale for this is as follows. NEDs general influence organisational decision-making by providing counsel to management, securing external resources for firm operations, monitoring management on behalf of shareholders (i.e., providing independent oversight) and also acting on behalf of employees (Creek et al., 2019; Hambrick et al., 2015). They are not responsible for day-to-day management as their remit is to constructively challenge and scrutinise strategic decision-making (downsizing proposals; proposals to reduce 10%–20% of the workforce) at the board level. This happens periodically, mainly during board meetings. Consequently, female NEDs may have a stronger impact on the likelihood of downsizing (i.e., H2).

**Hypothesis 3 (H3).** *Female director typology influences their impact on employment and downsizing decisions.*

#### 2.5. The importance of a critical mass

While we argue that women in the boardroom can influence firms to adopt more employee-friendly decisions, women are under-represented at the director level. Adams and Ferreira (2009) note that, in 2007, women held only 14.8% of board seats in Fortune 500 (US) firms. The situation is even grimmer outside the US where, in 2007, women held an estimated 8.7% (Australia), 10.6% (Canada), 0.4% (Japan) and 8.0% (Europe) of board positions (Adams & Ferreira, 2009). More recent studies suggest modest improvements over the last decade (Brieger et al., 2019; Kirsch, 2018). Kirsch (2018), for example, notes that in 2015, women made up about 20% (and 21%) of directors in the US (and European Union). In spite of these developments, research maintains that a majority of firms only have one female director – a token – on their corporate board (Brieger et al., 2019; Guldiken et al., 2019; Torchia et al., 2011). Perhaps, more troubling are suggestions that several firms engage a few female directors, not because of their potential to contribute but simply to be seen as doing so or in response to institutional pressures—Tokenism (Torchia et al., 2011).

The problem of tokenism in female representation on the board has been extensively explored in prior research. Prior evidence suggests that female representation is higher in relatively larger companies

and in companies operating in industries with higher levels of female employment (Mateos de Cabo et al., 2012; Smith & Parrotta, 2018). While some researchers argue that educational attainment, specialist competencies (bankers, lawyers, bureaucrats and public relation experts) and extensive business experience determines whether women get selected for corporate boards (Singh & Vinnicombe, 2004; Smith & Parrotta, 2018), the evidence overwhelmingly suggests that, even when women attain these professional prerequisites, their access to board roles is impeded by organisational barriers including non-transparent recruitment practices, unequal pay and lower access to career development opportunities (Bilimoria & Piderit, 1994). There is some evidence that the lack of strong networks (particularly with CEOs and other board members) partly explains female under-representation on boards (Smith & Parrotta, 2018).

Token theory (Kanter, 1977; Smith & Parrotta, 2018) explains why there is a low probability of hiring a second woman on the board following the appointment of the first. Kanter (1977) argues that the first woman on the board is purposefully appointed to represent the minority (women) rather than to contribute towards decision-making through their knowledge, competence and experience. Tokenism, or the absence of a critical mass (i.e., a minimum of three female directors or about 30% of board positions), therefore, reduces female director power (e.g., through votes) by inhibiting meaningful contribution or influence over corporate decisions (Kanter, 1977; Smith & Parrotta, 2018; Torchia et al., 2011).

Indeed, prior research suggests that women only positively affect firm outcomes when sufficiently represented on boards (Abebe & Dadanlar, 2021; Konrad et al., 2008; Kramer et al., 2006). Therefore, beyond the representation of women in boardrooms, we contend that their impact on employment might be dependent on whether there is a critical mass of female directors to democratically influence decision-making in the boardroom. Specifically, since cognitive framing of the board partly depends on how many women sit on it (Byron & Post, 2016; Post & Byron, 2015), women are likely to influence employment decisions when they represent a significant number in the boardroom. Drawing on the forgoing, therefore, we add a caveat to H1 and H2, by contending that the influence of female directors on firm-level employment and downsizing is greater when there is a critical mass of female directors. Hence, we propose the following hypotheses;

**Hypothesis 4 (H4).** *The influence of female directors on firm-level employment and the likelihood of downsizing is more pronounced when there is a critical mass of female directors on the BOD.*

### 3. Data and method

#### 3.1. Sample selection and variable definition

We test our conjectures on a sample of US firms listed on the NYSE, AMEX and NASDAQ between 2007 and 2016 (inclusive). We obtain firm financial and employment information from Compustat data files accessed through Wharton Research Data Service (WRDS). We supplement our financial data with the (Demerjian et al., 2012) measure of managerial ability, which we use as our proxy for board ability and our measure for firm corporate social responsibility performance, obtained from the KLD database. This file contains 82,848 firm-year observations from 13,244 firms. Next, we collect corporate governance data including board ownership, equity compensation, board size, the profile (name, gender, age and role) of board members, board members' networks and board members' outside board activity for the period 2007 to 2016 from Boardex database. The Boardex file contains 14,821 firm-year observations pertaining to 2598 firms. We match our firm financial (Compustat) and governance (Boardex) data using firm (CUSIPs) and time (year) identifiers. Our matched file contains 13,219 firm-year observations from 1984 firms. As standard in the literature,

we exclude heavily regulated industries, i.e., financials (sic code 6000–6999) and utilities (sic code 4900–4999) from the sample. This reduces our sample to 9909 firm-year observations from 1495 firms. Finally, we retain only observations with available data for all variables required in our main regression analysis (i.e., Eq. (1)). Our final sample consists of 8170 firm-year observations representing 1308 unique US-listed firms.

Next, we compute our main variables following the literature. Specifically, we capture variations in female representation across firm-years using the ratio of the number of women on the BOD relative to board size (Nadeem et al., 2017; Torchia et al., 2011). Our measure of female executive directors (and female NEDs) reflects the proportion of inside directors (and outside directors) that are female.

For robustness, we use two popular proxies to capture the variations in firm-level employment across firms; the ratio of total employees to total assets and the log of total assets (Chen et al., 2012; Lehto & Böckerman, 2008; Stieglitz & Setzer, 2020). Following Chen and Kao (2020), we capture downsizing – large scale reductions in the number of employees – using a dummy variable which takes a value of 1 when a firm reduces its workforce by 10% (and also by 20%) or more in any year.

#### 3.2. Empirical models

To explore the relationship between female representation and firm employment (i.e., H1), we run the following panel regression model (Eq. (1)).

$$Firm\ employment_{it} = \beta_0 + \beta_1 Female\ representation_{it} + \sum \beta_k Controls_{it} + v_i + v_t + \epsilon_{it} \quad (1)$$

The dependent variable, *Firm employment*, captures firm-level employment. The main predictor variable is *Female representation* which captures female representation on the BOD. A positive and significant  $\beta_1$  will provide evidence of a positive association between female representation and firm-level employment consistent with H1.

To explore our second hypothesis (i.e., H2), we follow Chen and Kao (2020) and estimate the following random effects probit model;

$$Prob(Downsizing_{it} = 1) = \phi(\gamma_0 + \gamma_1 Female\ representation_{it} + \sum \gamma_k Controls_{it} + v_i + v_t + \epsilon_{it}) \quad (2)$$

To test the importance of critical mass or the absence of tokenism (i.e., H4) on the relationship between female representation and firm employment (the likelihood of downsizing), we follow Torchia et al. (2011). Specifically, we re-estimate Eqs. (1) and (2) while replacing *Female representation* with measures of different levels of female representation; (1) at least one woman on the board, (2) exactly one woman on the BOD (3) exactly two women on the BOD, and (4) three or more women on the BOD (critical mass). Evidence that our results are stronger when there are more women on the board (i.e., a critical mass) will be consistent with the view that the influence of female director on firm employment (likelihood of downsizing) is more pronounced when there is a critical mass of female directors on the BOD.

Our models (Eq. (1) and (2)) control for firm and governance characteristics that may affect employment decisions and outcomes. In terms of firm characteristics, we control for profitability, Tobin's  $q$ , firm size, free cash flow, tangibility, firm age and industry competition. Firm performance (profitability, Tobin's  $q$ ) and resource availability (free cash flow) are likely to directly influence firms' ability to recruit and retain employees due to significant costs associated with hiring labour (Dierynck et al., 2012; Gu, 2018). Firm size can impact employment as larger firms, might not only require more employees but are likely to have the resources and capabilities to increase (or maintain) employment compared to their smaller counterparts (Arenke & Tunyi, 2020; Chen & Kao, 2020). Asset structure (tangibility or tangible assets) is an important determinant of firm employment as firms with more

tangible assets (property, plant and equipment) may require a larger workforce to man these assets.

Besides female representation, other corporate governance features can also impact firm employment. Therefore, to isolate the effect of female representation on the BOD, we additionally control for several other governance characteristics. For example, more independent boardrooms can affect employment decisions as independent directors may also oppose significant downsizing proposals (Areneke & Kimani, 2019; Chen & Kao, 2020). Equity compensation (options) may incentivise directors to focus on short term profitability through layoffs (Edmans et al., 2017). Similarly, larger boards, as well as busy boards, may lack effectiveness and cohesiveness which limits oversight and further empowers executive directors (Chen & Kao, 2020). Finally, among other governance features, board ownership, block holding, board ability, board experience and board tenure may improve the overall quality of governance and decision-making (Areneke & Kimani, 2019; Tunyi, 2021). Therefore, we control for firm-level corporate governance individualities, including board ownership, equity compensation, block holding, board independence, board size, CEO Chair duality, board tenure, board busyness, board networks, board ability and board age.

Firm employment can be influenced by the CSR orientation of firms. Specifically, it may be harder for some firms to sideline their responsibilities to employees because of their CSR commitments (Goergen et al., 2019). Hence, we control for firm CSR performance. Consistent with (Servaes & Tamayo, 2013), our measure of CSR performance reflects a firm's performance across four CSR dimensions, including Community, Employment, Environment and Human rights.

Finally, our models control for firm-specific (e.g., nature of the business and its industry) and year (e.g., aggregate demand) fixed effects that could also impact firm-level employment. All variable definitions are summarised in Table A.1. We winsorise our continuous variables at the 1st and 99th percentile in order to eliminate outliers. Our analysis is carried out using Stata 17.

## 4. Results and discussions

### 4.1. Descriptive statistics

Descriptive statistics of our main variables are presented in Table 2. The average (median) firm in our sample employs about six (three) staff per million \$ in total assets. Female representation on the board is generally low. On average, 12.9% of the directors on the board are female. The 25th percentile is 0%, and the 75th percentile is 20%. This suggests that female influence on the board (i.e., at least 30% board representation) is lacking in at least 75% of the firms in the sample. The proportion of female executive directors is particularly low, with only about 4% of firm executives being females. The 75th percentile of the distribution is zero, suggesting that there are no females executive directors in at least 75% of the sampled firms. Most of the women on corporate boards appear to hold non-executive positions (independent directorships). Specifically, on average, over 16% of non-executive directors are female. Panels B and C of Table 2 present descriptive statistics for our control variables. Here, the average firm has about nine board members, and about 51% of firms have a CEO who also chairs the board.

### 4.2. Trends in employment and female representation

Next, we document trends in employment by US firms and female representation on US corporate boards from 2007–2016. Fig. 1 presents the average number of employees (per million \$ in total assets) across US-listed firms from 2007 to 2016. The number of people employed by US-listed firms as a proportion of their total assets has gradually declined from about seven in 2007 to about five in 2016.

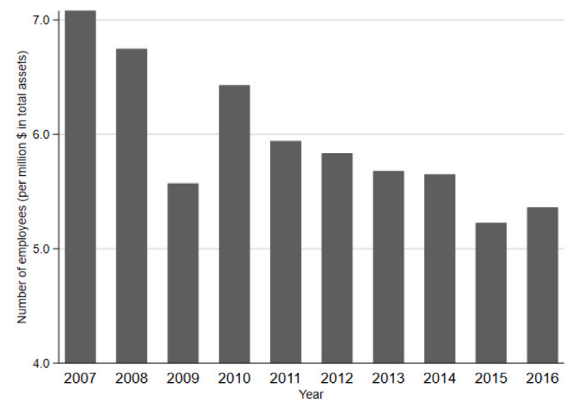


Fig. 1. Employment growth per million \$ of assets.

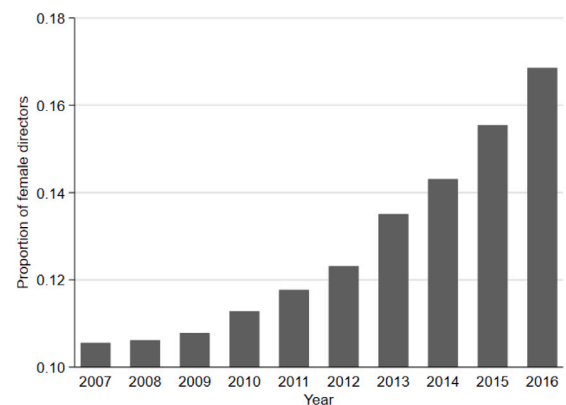


Fig. 2. Female representation in US corporate boards.

For the median firm (in terms of assets) in our sample, this implies a reduction of 2000 employees over this period. The reduction of employees has significant effects on firms, their remaining employees and society as a whole. Over the period (2007–2016), female representation on US boards of directors has increased substantially as shown in Fig. 2. In 2007, female directors constituted about 11% of corporate boards, increasing to about 17% in 2016. Despite this increase, women still make up a minority of US corporate boards, as shown in Table 2.

In Fig. 3, we explore trends in employment across two sub-samples; firms in which women are under-represented (i.e., female directors make up less than 30% of the board) and firms in which there is female influence or a critical mass of female directors (i.e., female directorships  $\geq 30\%$ ). The figure shows a significant difference between these two sub-samples. Specifically, firms with higher female representation (i.e., critical mass) appear to employ more staff per unit asset compared to their counterparts in which women are under-represented. This is consistent with our first hypothesis (H1), suggesting that the level of employment increases with female representation, holding other factors constant. It also supports our fourth hypothesis (H4) that female influence (i.e., critical mass) matters. Specifically, Fig. 3 suggests that firms with a critical mass of female directors employ more staff than their counterparts in which female directors are under-represented. Nonetheless, there is a decline in the employment trend in the former.<sup>3</sup>

<sup>3</sup> We establish that these differences are statistically significant using simple *T* tests. Specifically, across several years, firms with significant female representation appear to employ more people than their counterparts. For brevity, we do not present these results.

**Table 2**  
Descriptive statistics.

Variables	N	Mean	SD	p25	p50	p75
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Main variables</b>						
Employees to assets	8170	5.907	15.681	1.537	2.890	5.557
Total employees (Log)	8170	8.833	1.587	7.758	8.764	9.852
Under-staffing	3645	3.365	8.469	0.435	1.048	2.746
Over-staffing	3126	3.976	14.172	0.405	1.152	3.558
Staff productivity	8170	0.516	1.020	0.202	0.304	0.488
Female representation	8170	0.129	0.104	0.000	0.125	0.200
Female representation- EDs	8170	0.041	0.175	0.000	0.000	0.000
Female representation- NED	8170	0.162	0.154	0.000	0.143	0.250
<b>Panel B: Control variables—Firm financial characteristics</b>						
Profitability	8170	0.162	0.188	0.087	0.146	0.219
Tobin's Q	8170	2.015	1.199	1.267	1.673	2.341
Firm size	8170	21.588	1.528	20.465	21.416	22.529
Free cash flow	8170	0.066	0.076	0.028	0.066	0.107
Tangible assets	8170	0.245	0.214	0.085	0.174	0.338
Concentration	8170	0.272	0.200	0.134	0.215	0.341
<b>Panel C: Control variables—Corporate governance characteristics</b>						
Board ownership	8170	0.070	0.112	0.010	0.024	0.072
Equity compensation	8170	0.192	0.284	0.000	0.000	0.458
Block holding	8170	0.256	0.129	0.162	0.250	0.343
Board independence	8170	0.787	0.111	0.714	0.800	0.875
Board size	8170	9.051	2.083	8.000	9.000	10.000
CEO Chair	8170	0.516	0.500	0.000	1.000	1.000
Board tenure	8170	9.103	3.875	6.455	8.571	11.222
Board busyness	8170	1.906	3.381	0.000	0.000	4.000
Board networks	8170	7.165	0.616	6.816	7.212	7.583
Board ability	8170	0.016	0.156	-0.080	-0.028	0.066
Board age	8170	62.300	3.803	59.875	62.455	64.750
Firm CSR score	8170	0.162	0.509	0.000	0.000	0.250

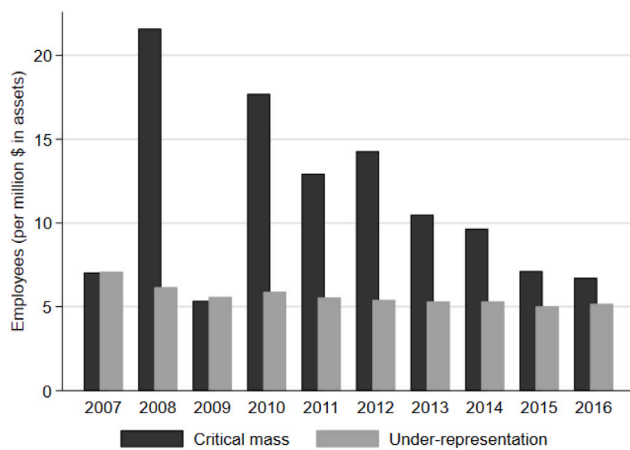


Fig. 3. Female representation and trends in employment.

### 4.3. Female representation and firm employment

In Table 3, we test our first three hypotheses in a multivariate setting. To test H1, we use the panel fixed effects regression model specified in Eq. (1). For robustness, we deploy two proxies of firm employment or staffing—the total employees to assets ratio (column 1) and the log of total employees (column 2). The main independent variable in the models is our measure of female representation—the proportion of female directors on the BOD.<sup>4</sup>

<sup>4</sup> Our models control for other firm financial and governance characteristics which might partly shape firm-level employment decisions. Results

In column 1 of Table 3, we find a positive association between female representation on the BOD and the number of employees per unit asset. A unit increase in female representation, other things remaining equal, leads to a 2.359 unit increase in the number of employees per unit asset. The coefficient of female representation is significant at the 1% level ( $p$ -value of 0.003). Our results are robust to the choice of proxy for firm employment. Specifically, in column 2, we still find a significant positive relationship between female representation and the log of total employees ( $p$ -value of 0.052). Overall, these findings are consistent with our first hypothesis (H1) of a positive relationship between female representation and employment within firms and evidence the social role of women on the BOD (Dadanlar & Abebe, 2020; Eagly, 1987; Eagly et al., 2000).

Our second hypothesis (H2) predicts a negative relationship between female representation and the likelihood of downsizing. We test this hypothesis by estimating Eq. (2) using a random-effects probit model. For robustness, we similarly explore results across two alternative proxies of downsizing (Downsizing (10%) and Downsizing (20%)), while controlling for other firm and governance characteristics that might affect employment decisions. Our results are presented in columns 4 and 5 of Table 3.

As predicted by H2, in columns 4 and 5 of Table 3, we find a negative relationship between female representation and the likelihood of downsizing. Specifically, the coefficient of female representation is negative in both models (significant at the 1% level), implying that the likelihood of a significant (10 to 20%) reduction in the workforce in any one year reduces as the number of women on the BOD increases. These results are consistent with social role perspectives (Byron & Post,

from our pairwise correlation analysis (not presented for brevity) assuages multicollinearity concerns.



**Table 3**  
Female representation on the BOD and employment.

Dependent variable:	Employees to assets	Log employees	Employees to assets	Downsizing (10%)	Downsizing (20%)	Downsizing (10%)
Model	Panel fixed effects model			Random effects probit model		
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Female representation	2.359*** (0.749)	0.082* (0.044)		-1.602*** (0.232)	-1.665*** (0.246)	
Female representation- EDs			1.017*** (0.365)			-0.149 (0.132)
Female representation- NED			0.747* (0.416)			-0.678*** (0.148)
Profitability	0.645** (0.276)	0.026 (0.016)	0.662** (0.276)	0.041 (0.113)	-0.062 (0.129)	0.024 (0.112)
Tobin's Q	-0.012 (0.061)	0.009** (0.004)	-0.012 (0.061)	0.213*** (0.031)	0.150*** (0.027)	0.215*** (0.031)
Firm size	-1.093*** (0.159)	0.630*** (0.009)	-1.094*** (0.159)	0.024 (0.026)	0.045* (0.027)	0.018 (0.026)
Free cash flow	1.559** (0.747)	0.152*** (0.044)	1.566** (0.747)	-2.191*** (0.369)	-1.804*** (0.355)	-2.226*** (0.370)
Tangible assets	8.007*** (0.930)	0.755*** (0.055)	7.988*** (0.930)	-0.743*** (0.113)	-0.632*** (0.112)	-0.732*** (0.113)
Concentration	0.371 (0.736)	-0.015 (0.043)	0.371 (0.736)	-0.205* (0.108)	-0.151 (0.112)	-0.230** (0.108)
Board ownership	0.642 (0.803)	-0.003 (0.047)	0.650 (0.803)	0.201 (0.219)	0.755*** (0.216)	0.169 (0.220)
Equity compensation	0.515 (0.396)	-0.001 (0.023)	0.531 (0.396)	-0.375*** (0.117)	-0.453*** (0.117)	-0.381*** (0.117)
Block holding	1.267** (0.500)	0.059** (0.029)	1.240** (0.500)	-0.541*** (0.184)	-0.318* (0.190)	-0.537*** (0.184)
Board independence	1.641** (0.674)	0.146*** (0.040)	1.943*** (0.677)	-0.932*** (0.217)	-0.932*** (0.215)	-1.160*** (0.218)
Board size	-0.100** (0.040)	0.018*** (0.002)	-0.102** (0.040)	-0.072*** (0.014)	-0.063*** (0.014)	-0.077*** (0.014)
CEO Chair	-0.114 (0.115)	0.018*** (0.007)	-0.101 (0.115)	-0.014 (0.040)	0.041 (0.043)	-0.018 (0.040)
Board tenure	0.054* (0.029)	0.010*** (0.002)	0.060** (0.029)	-0.054*** (0.007)	-0.081*** (0.007)	-0.055*** (0.007)
Board busyness	-0.002 (0.019)	-0.001 (0.001)	-0.003 (0.019)	0.016*** (0.006)	0.016*** (0.006)	0.018*** (0.006)
Board networks	-0.243 (0.187)	0.024** (0.011)	-0.224 (0.187)	-0.058 (0.044)	-0.001 (0.048)	-0.066 (0.044)
Board ability	-1.771*** (0.377)	-0.001 (0.022)	-1.785*** (0.377)	0.795*** (0.145)	0.544*** (0.144)	0.799*** (0.144)
Board age	0.003 (0.030)	-0.002 (0.002)	-0.006 (0.030)	-0.010 (0.007)	-0.008 (0.007)	-0.007 (0.007)
Firm CSR score	-0.052 (0.101)	-0.042*** (0.006)	-0.046 (0.101)	-0.133*** (0.046)	-0.144*** (0.050)	-0.140*** (0.046)
Constant	27.862*** (3.975)	-5.414*** (0.234)	28.138*** (3.974)	2.259*** (0.710)	0.995 (0.705)	2.391*** (0.710)
Observations	8170	8170	8170	8170	8170	8170
Observations	8170	8170	8170	8170	8170	8170
Firms	1308	1308	1308	1308	1308	1308
R-squared	0.046	0.525	0.046	-	-	-
Firm & Year FE	Yes	Yes	Yes	No	No	No

Standard errors are presented in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively.

2016; Creek et al., 2019; Post & Byron, 2015) and studies showing that the likelihood of employee reductions reduce under female ownership (Matsa & Miller, 2014) or leadership (Matsa & Miller, 2013). Overall, the results suggest that female influence on corporate boards potentially results in more moral, ethical and stakeholder-conscious decision-making.<sup>5</sup>

<sup>5</sup> Our study focuses on women on the BOD. We have argued that these women impact employment decisions when they are part of decision-making on the BOD. As an additional test, we examine whether women executives on the top management team or TMT (i.e., women executives both in and outside the BOD) also influence employment decisions. Following the literature (Fernando et al., 2020; Perryman et al., 2016), we measure female representation in the TMT as the proportion of females executives to the total number of executives in the TMT as reported in the Execucomp database in a given year. In untabulated results, we do not find statistical evidence

#### 4.4. Female director typology and employment decisions

In columns 3 and 6 of Table 3, we test whether our results for H1 and H2 are shaped by the role (i.e., executives *vs* NEDs) of females on the BOD as stipulated by H3. Specifically, we replace *Female representation* in our model (Eq. (1)) with two variables that measure the proportion of female executive directors (*Female representation-EDs*) and the proportion of NEDs that are female (*Female representation-NED*). In column 3, we find that *Female representation-EDs* has a stronger impact on employment (coefficient of 1.017, *p*-value of 0.007) relative to *Female representation-NED*, which is only marginally significant (coefficient of 0.747, *p*-value of 0.091). This is consistent with the view that

that women representation on the TMT impacts employment outcomes. This suggests that the influence of women on employment decisions is dependent on board membership.

**Table 4**  
Level of female representation and employment.

Dependent variable:	Employees to assets			Downsizing (10%)		
	OLS with fixed effects model			Random effects probit model		
Model						
Variables	(1)	(2)	(3)	(4)	(5)	(6)
One woman	0.103 (0.338)			0.045 (0.039)		
Two women		0.279 (0.439)			-0.199*** (0.047)	
Three or more women			3.128** (1.304)			-0.209*** (0.076)
Profitability	3.335*** (0.953)	3.323*** (0.952)	3.199*** (0.954)	-0.006 (0.110)	0.005 (0.110)	0.001 (0.110)
Tobin's Q	-0.348** (0.170)	-0.346** (0.171)	-0.336** (0.169)	0.216*** (0.031)	0.215*** (0.032)	0.215*** (0.031)
Firm size	-1.820*** (0.190)	-1.817*** (0.191)	-1.851*** (0.194)	0.013 (0.026)	0.015 (0.026)	0.015 (0.026)
Free cash flow	6.325*** (2.195)	6.337*** (2.205)	6.262*** (2.202)	-2.216*** (0.376)	-2.226*** (0.375)	-2.198*** (0.374)
Tangible assets	2.542** (1.209)	2.567** (1.220)	2.517** (1.226)	-0.741*** (0.114)	-0.747*** (0.113)	-0.736*** (0.114)
Concentration	-1.457*** (0.406)	-1.451*** (0.407)	-1.626*** (0.410)	-0.270** (0.109)	-0.261** (0.109)	-0.253** (0.109)
Board ownership	-2.205* (1.254)	-2.197* (1.260)	-2.670** (1.322)	0.147 (0.224)	0.138 (0.223)	0.169 (0.221)
Equity compensation	2.417** (0.985)	2.374** (0.983)	2.392** (0.977)	-0.387*** (0.117)	-0.375*** (0.117)	-0.385*** (0.117)
Block holding	-1.418 (1.229)	-1.400 (1.231)	-1.413 (1.227)	-0.539*** (0.185)	-0.541*** (0.185)	-0.539*** (0.185)
Board independence	-3.350* (1.802)	-3.418* (1.770)	-3.746** (1.892)	-1.072*** (0.217)	-1.023*** (0.216)	-1.059*** (0.217)
Board size	0.356*** (0.115)	0.346*** (0.121)	0.240** (0.112)	-0.087*** (0.014)	-0.079*** (0.014)	-0.079*** (0.014)
CEO Chair	0.406 (0.357)	0.402 (0.350)	0.299 (0.377)	-0.024 (0.041)	-0.025 (0.040)	-0.020 (0.041)
Board tenure	0.289*** (0.060)	0.289*** (0.060)	0.295*** (0.061)	-0.054*** (0.007)	-0.054*** (0.007)	-0.054*** (0.007)
Board busyness	-0.164*** (0.034)	-0.164*** (0.034)	-0.150*** (0.034)	0.019*** (0.006)	0.019*** (0.006)	0.018*** (0.006)
Board networks	0.879** (0.424)	0.858** (0.426)	0.760* (0.408)	-0.089** (0.044)	-0.079* (0.044)	-0.084* (0.044)
Board ability	-0.714 (1.551)	-0.712 (1.547)	-0.940 (1.514)	0.807*** (0.145)	0.792*** (0.144)	0.815*** (0.145)
Board age	-0.121*** (0.035)	-0.119*** (0.035)	-0.106*** (0.034)	-0.004 (0.007)	-0.005 (0.007)	-0.005 (0.007)
Firm CSR score	-0.066 (0.285)	-0.076 (0.285)	-0.275 (0.300)	-0.146*** (0.046)	-0.148*** (0.046)	-0.139*** (0.046)
Constant	41.363*** (4.664)	41.448*** (4.642)	42.722*** (4.775)	2.427*** (0.715)	2.344*** (0.712)	2.362*** (0.715)
Observations	8170	8170	8170	8170	8170	8170
Firms	1308	1308	1308	1308	1308	1308
R-squared	0.085	0.085	0.089	-	-	-
Industry & Year FE	Yes	Yes	Yes	No	No	No

Standard errors are presented in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively.

female executive directors plausibly have a stronger impact on day-to-day recruitment decisions (Chen & Kao, 2020; Dadanlar & Abebe, 2020) and, consequently play a more significant role in promoting employment growth in firms.

Our results for the likelihood of significant downsizing (column 6) suggest that, compared to female executive directors, non-executive female directors potentially play a more vital role in dissuading firms from engaging in significant workforce reductions. In untabulated results, we find that the differences in the regression coefficients between *Female representation-EDs* and *Female representation-NED* are significant at the 1% level.

#### 4.5. Critical mass, female representation and employment

Our results in Table 3 suggest that the level of employment increases while the likelihood of downsizing decreases with female representation on the BOD. Our fourth hypothesis (H4) highlights the importance of a critical mass of women on the BOD. Specifically, building on prior

research, we predict that the impact of female representation is more pronounced when there are at least three women on the BOD (i.e., the absence of tokenism). To test our hypothesis, we re-estimate Eqs. (1) and (2) for different levels of female representation on the BOD. Our results are presented in Table 4.

The presence of a single woman on the BOD has a statistically insignificant impact on the level of employment (column 1) and the likelihood of downsizing (column 4). This is consistent with token theory suggesting that the first woman on the board is purposefully appointed to represent the minority rather than to contribute towards decision-making (Kanter, 1977; Smith & Parrotta, 2018). We find that two women on the BOD have an insignificant impact on the level of employment (column 2) but a significant negative impact on the likelihood of downsizing (column 5). Importantly, our results suggest that female representation influences employment and downsizing decisions when there are three or more women on the BOD (columns 3 and 6). Specifically, the impact of female directors is largest in magnitude when there are three or more women on the BOD (column 3). Firms with three or more women on their BOD report employment levels that are

**Table 5**  
Additional analysis.

Panel A: Understaffing, productivity, female presence and other roles											
Variables	Under-staffed	Over-staffed	Productivity	Employees to Asset	Log Employment	Downsizing (10%)	Employees to Asset	Log Employment	Downsizing (10%)	Employees to Asset	Downsizing (10%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Female representation	-2.152**	2.588*	0.174*							2.604***	-1.339***
	(1.015)	(1.562)	(0.096)							(0.825)	(0.262)
Female presence				2.184***	0.216***	-0.255***					
				(0.415)	(0.025)	(0.051)					
Female CEO							0.405	-0.009	-0.347**	0.377	-0.207
							(0.314)	(0.018)	(0.164)	(0.340)	(0.183)
Female Chair							-0.074	0.040	0.208	-0.296	0.125
							(0.510)	(0.030)	(0.231)	(0.547)	(0.253)
WW_index										0.007	0.936***
										(0.141)	(0.271)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.706	13.173	-1.241**	42.823***	-8.879***	2.261***	28.231***	-5.404***	2.447***	28.546***	0.787
	(6.034)	(8.336)	(0.508)	(4.694)	(0.312)	(0.713)	(3.976)	(0.234)	(0.714)	(4.378)	(0.789)
Observations	3637	3134	8170	8170	8170	8170	8170	8170	8170	7556	7556
Firms	813	759	1308	1308	1308	1308	1308	1308	1308	1219	1219
R-squared	0.024	0.056	0.039	0.088	0.713	0.045	0.525	0.046	0.046	0.046	0.046
Industry FE	-	-	-	Yes	Yes	-	-	-	-	-	-
Firm FE	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: The impact of female directors on employment during crisis											
	Financial crisis			Placebo test							
	2007/08	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Crisis # Female rep.	4.615***	3.047**	4.626***	0.518	0.937	-0.262	-1.041	-2.226**	-2.106*	0.397	-1.945*
	(0.976)	(1.294)	(1.238)	(1.175)	(1.121)	(1.100)	(1.107)	(1.083)	(1.131)	(1.048)	(1.067)
Crisis	0.474**	0.687***	-0.728***	-0.684***	-0.595***	-0.528**	-0.459**	-0.503**	-0.518**	-0.742***	-0.700**
	(0.241)	(0.256)	(0.212)	(0.209)	(0.210)	(0.217)	(0.227)	(0.240)	(0.256)	(0.262)	(0.278)
Female representation	1.616**	2.102***	2.004***	2.314***	2.273***	2.381***	2.450***	2.588***	2.553***	2.308***	2.676***
	(0.764)	(0.757)	(0.755)	(0.756)	(0.756)	(0.755)	(0.756)	(0.757)	(0.756)	(0.761)	(0.769)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	28.443***	27.292***	28.743***	27.967***	27.979***	27.847***	27.830***	28.019***	28.067***	27.786***	28.418***
	(4.079)	(4.074)	(3.978)	(3.983)	(3.978)	(3.976)	(3.975)	(3.975)	(3.976)	(3.981)	(3.986)
Observations	8170	8170	8170	8170	8170	8170	8170	8170	8170	8170	8170
Firms	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308
R-squared	0.049	0.047	0.048	0.046	0.046	0.046	0.046	0.047	0.046	0.046	0.046
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are presented in parenthesis. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively.

3.128 units higher than those reported by their counterparts (significant at 1% level). Similarly, the likelihood of downsizing significantly declines when there are three or more women on the BOD. Overall, these results support the view (i.e., H4) that female directors' influence on employment decisions (including the likelihood of downsizing) is more pronounced in the absence of tokenism (Abebe & Dadanlar, 2021; Kanter, 1977; Kramer et al., 2006; Smith & Parrotta, 2018; Torchia et al., 2011).

4.6. Additional analyses and robustness checks

4.6.1. Female representation, under-staffing and productivity

Consistent with our hypotheses, our results so far suggest that female directors play a role in increasing the level of employment, as well as reducing the likelihood of downsizing in their firms. Our hypotheses are premised on the assumption that female representation on the BOD is positive for society through its impact on employment. However, it is possible that firms with women on their BOD employ more staff than their counterparts yet remain under-staffed. This may be the case when an increase in the number of employees coincides with an increase in work requirements, demand or output. If our core argument (i.e., women on the BOD positively impact employment) is valid, we should also find that, by recruiting more staff, female directors curb the problem of under-staffing.

Conversely, we have noted that employment comes at a significant cost and therefore, the hypothesised effect of women on the BOD (i.e., an increase in staffing) may adversely impact firm performance. This adverse impact on firm performance may arise due to inefficiencies caused by over-staffing<sup>6</sup> and a decline in output per employee. The preceding sources of inefficiencies will impact the sustainability of the entire firm and jeopardise the employment it provides to society. We directly test these conjectures by exploring whether female representation on the BOD impacts under-staffing, over-staffing and employee productivity. Evidence that female representation on the BOD does not lead to under-staffing and a decline in employee productivity will support the view that women on the BOD support meaningful and sustainable employment in society.

We develop a measure to capture the level of under-staffing in different companies. We start by predicting each firm's level of employees based on its level of sales, growth in sales, lagged growth in sales and asset structure (property, plant and equipment), while controlling for industry and year effects. Presumably, within each industry-year subgroup, there should be a strong association between levels of sales, growth in sales and the number of employees as firms increase personnel (employment) to address production and growth needs. Hence, we use sales, growth in sales and the lag of growth in sales as predictors of firm employment. Secondly, we use asset structure (captured through property, plant and equipment or fixed assets) as an additional predictor of employment needs. On the one hand, firms with significant property, plant and equipment may require a higher number of employees to man these assets. On the other hand, significant investment in equipment may reduce the need to hold large numbers of employees by replacing (manual) processes.

We run the following regression model (Eq. (3)) across (Fama and French 48) industry-year sub-samples and use the derived coefficients to predict the optimal level of employment in each firm.

$$\frac{Employees_{it}}{Assets_{it-1}} = \beta_0 + \beta_1 \frac{REV_{it}}{Assets_{it-1}} + \beta_2 \frac{\Delta REV_{it}}{Assets_{it-1}} + \beta_3 \frac{\Delta REV_{it-1}}{Assets_{it-1}} + \beta_4 \frac{PPE_{it}}{Assets_{it-1}} + \epsilon_{it} \tag{3}$$

We estimate pooled and panel (fixed effects) models using the entire sample of 6969 firm-year observations with available data. Our

untabulated results<sup>7</sup> suggest that over the entire sample, these predictor variables partly explain employment levels across firms and over time, after controlling for firm, industry and year fixed effects.

Our measure of under-staffing is the residual of Eq. (3)—the difference between the actual and predicted values of firm-level employment. A negative (positive) residual is suggestive of under-staffing (over-staffing) as the firm's level of employment is lower (higher) than expected given its levels of sales, growth in sales and asset structure.<sup>8</sup> We present basic descriptive statistics of our measures in Table 2. For the firms that are under-staffed (over-staffed), the average firm employs about three (four) staff less (more) per million dollars of assets than is expected.

In columns 1 and 2 (Panel A) of Table 5, we explore the impact of female directors on over- and under-staffing. As shown in column 1 (Panel A), we find a negative and statistically significant relationship between female representation and under-staffing (*p*-value of 0.018). A unit increase in female representation is associated with a 2.152 unit decrease in our measure of under-staffing. The coefficients of control variables in Table 5 are suppressed to save space. In column 2, we also find that the relationship between female representation and over-staffing is positive (coefficient of 2.588) and significant at the 10% level. These results suggest that, consistent with a social role perspective (Byron & Post, 2016; Chen & Kao, 2020; Creek et al., 2019; Dadanlar & Abebe, 2020; Post & Byron, 2015), the level of under-staffing reduces with female representation on the board. Consistent with our findings that women promote employment growth, female representation is associated with above-normal staffing levels (over-staffing).

To test whether the growth in employment associated with female representation might lead to inefficiencies due to a decline in productivity, we directly explore the relationship between female representation and staff productivity. Our measure of productivity is the total revenue generated per employee. In column 3 (Panel A) of Table 5, we find that employee productivity increases with female representation. A unit increase in BOD female representation is associated with a 17.4% increase in staff productivity (significant at the 10% level). Taken together, our evidence suggests that, while female representation may lead to over-staffing, this does not jeopardise employee productivity. Overall, the results support our contention that female directors influence firms to provide meaningful employment opportunities and this does not occur at the expense of staff productivity (and hence, shareholder value).

4.6.2. Female presence, female CEOs, female chairs and other controls

Our measure of female representation considers the proportion of women on the board. For robustness, we also explore whether the presence of women on the board (which has been the focus of some studies (see, for example, Abbott et al., 2012) shapes employment decisions. In columns 4 to 5 (Panel A) of Table 5, we re-estimate Eqs. (1) and (2) after substituting our measure of female representation with a dummy variable (Female presence) that simply captures the presence of at least one female on the board (Abbott et al., 2012). We find that our results continue to hold. Specifically, we find that Female presence has a positive relationship with the level of employment (significant at the 1% level) and a negative association with the likelihood of downsizing.

In our analysis so far, we have used firm and year fixed effects (panel regressions) to address endogeneity issues resulting from missing variables that are firm- and time-invariant. To empirically isolate the impact of female representation, we have also controlled for several firm financial and corporate governance characteristics across all our

<sup>7</sup> These results are available on request.

<sup>8</sup> For analytical tractability, we compute two separate measures for under-staffing and over-staffing. We multiply our measure of under-staffing (i.e., negative residuals) by negative one (-1) so that higher values are indicative of higher under-staffing problems.

<sup>6</sup> A situation where employees are surplus to requirements.

**Table 6**  
Robustness check: Instrumental variable analysis.

Variables	2SLS		GMM	
	(1)	(2)	(3)	(4)
Female representation		1.906** (0.835)		8.363*** (1.518)
Median female representation	0.180*** (0.022)			
Female representation rank	0.019*** (0.000)			
Female representation <sub>t-1</sub>			0.845*** (0.022)	
Female representation <sub>t-2</sub>			-0.005 (0.027)	
Female representation <sub>t-3</sub>			-0.004 (0.028)	
Female representation <sub>t-4</sub>			0.066** (0.028)	
Female representation <sub>t-5</sub>			-0.013 (0.022)	
Constant	0.152 (0.049)		0.049*** (0.029)	59.966*** (8.108)
Observations	8170	8035	2703	2703
R-squared	0.528	0.046		0.103
Firm & Governance controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<b>F test of excluded instruments</b>				
Sanderson–Windmeijer F test	1633		1075	
P-value	0.000		0.000	
<b>Under identification test</b>				
Kleibergen–Paap rk LM Stat	1020		547	
P-value	0.000		0.000	
<b>Weak identification test</b>				
Cragg–Donald Wald F Stat	2362		1688	
Kleibergen–Paap rk Wald F stat	1677		1075	
<b>Over identification test</b>				
Hansen J Stat	0.532		2.220	
P-value	0.466		0.695	

Standard errors are presented in parenthesis. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively.

models. However, we have not considered whether the effect we have documented is simply driven by female leadership (CEOs and chairpersons) rather than female representation on the BOD. In columns 7 to 9 (Panel A) of Table 5, we do not find that female CEOs or Chairs play a significant role in growing employment. There is some evidence that female CEOs are associated with a lower tendency for downsizing.

Cash constraints can shape employment decisions within firms because, unlike other costs, staff costs (salaries, wages and benefits) cannot be deferred without detrimental repercussions for firms. Therefore, we additionally control for firms' financial constraints using the Whited Wu or WW index (Whited & Wu, 2006). In columns 10 and 11 (Panel A) of Table 5, we show that even after controlling for the gender of the CEO and board chair and financial constraints, female representation on the board drives firm employment and reduces the likelihood of downsizing, as hypothesised.

#### 4.6.3. Female representation and employment during economic downturns

We earlier noted that firms streamline activities, improve efficiency and manage business challenges by typically reducing their labour force (Hudson & Shen, 2015; Poulston, 2008). This is more so the case during periods of economic declines during which survival plausibly becomes a priority. Anecdotal evidence suggests that recent economic declines resulting from Global Financial Crisis (2007–2008) and the Covid-19 pandemic (2020) have exacerbated employment problems, forcing several companies to seek to do more with fewer (human) resources. The Financial Crisis (2007–2008) was characterised by significant lay-offs as firms sought to reduce labour costs through a freeze in hiring, an increase in the use of fixed-term contracts and ultimately, mass lay-offs (Heyes & Lewis, 2015; Wang & Heyes, 2020). This period, therefore, presents an interesting context or quasi-natural experimental

setting to test the validity of our arguments. Specifically, if female directors are pro-employment, as we argue, we should find their impact on employment to be even more pronounced during crisis periods.

We use a dummy variable (*Crisis*) to capture the financial crisis period (2007–2008) and explore whether *Crisis* positively moderates the female representation–firm employment nexus. We present the results in Panel B of Table 5. Our dependent variable across all models is the employees to total asset ratio. In column 1, we find that *Crisis* (defined as the 2007–2008 period) positively moderates the relationship between female representation and firm-level employment. Specifically, the latter relationship appears to be stronger during the crises years, suggesting that female directors are vital in influencing firms to retain more staff during crisis periods. This relationship is statistically significant at the 1% level ( $p$ -value of 0.000).

Our definition of crisis as the 2007–2008 period may capture other confounding year-specific macroeconomic influences which we have not controlled, thus leading to bias. Given that our data does not span multiple crisis periods, we check for robustness by conducting a placebo or falsification test. Specifically, we run the same analysis by falsely associating other non-crisis years (2009–2016) to the crisis. For example, in column 11 (Panel B) of Table 5, we define *Crisis* as the year 2016. Evidence that our falsification results are not significant will strengthen our argument that female directors are particularly vital in influencing firms to retain more staff during crisis periods. Indeed, in columns 4 to 16, we do not find that our placebo positively moderates the relationship between female representation and firm employment.

#### 4.6.4. Addressing endogeneity: Causation and reverse-causality

Our main results for H1 in Table 3 may be prone to endogeneity due to potential reverse-causality bias. Also, our results so far, suggest association but causality is not evident—we are yet to establish that female

directors *cause* the growth in employment in our sample corporations. While we have argued that female representation drives the level of employment in our sample companies, an alternative explanation of our findings is that firms that recruit more female directors concurrently employ more staff, perhaps, as part of their social responsibility and diversity strategy. To establish causality (and mitigate reverse-causality), we first adopt a two-stage least squares (2SLS) instrumental variables (IV) regression approach. Here, we use two instruments for BOD female representation; (1) the median BOD female representation in each firm's industry-year subgroup and (2) a firm's decile ranking in terms of female representation.

Our first instrument (the median level of BOD female representation in the industry in each year) is plausibly exogenous as a firm determines its level of BOD female representation but is unlikely to influence the level of female representation on boards of peer firms. Hence, the median level of female representation in the industry is unlikely to be influenced by each firm within the industry. To obtain our second instrument (a firm's female representation decile ranking), in each year, we sort firms in each industry by their female representation and group them into 10 deciles. The first decile (i.e., female director rank of one) represents firms with the lowest ranking, while the tenth decile represents firms with the highest ranking. Following Tunyi (2021), we argue that a firm's decile rank is plausibly exogenous as firms can influence their level of female representation and their ranking against their peers but this is unlikely to be sufficient enough to move them from one decile to another. Specifically, firms will have to substantially alter their management structure to alter their decile rankings. In unreported tests, we have also used quintiles in place of deciles, and the results are qualitatively similar and conclusions unchanged.

We conduct several tests to allay concerns about the validity of our instruments and then use these instruments within the 2SLS framework to re-estimate our main results. In column 1 of Table 6, we present the first stage results of our 2SLS regression. We use the two instruments and all other control variables to predict female representation. The two instruments have a positive and significant association with BOD female representation ( $p$ -value of 0.000 in both cases). Further, our  $F$  test of excluded instruments (i.e., Sanderson–Windmeijer  $F$  test) suggests that the instruments are important predictors of female representation ( $F$ -statistics of 1633 and  $p$ -value of 0.000).

We conduct three further tests of instrument validity including the under-identification, weak identification and over-identification tests. Our results from the under-identification test suggest that the two instruments are relevant (Kleibergen–Paap rk LM statistic of 1020 with  $p$ -value of 0.000). Secondly, the null hypothesis that the instruments are weak is rejected as both the Cragg–Donald Wald  $F$  stat and Kleibergen–Paap rk Wald  $F$  stat are substantially greater than acceptable thresholds (Stock et al., 2002). Thirdly, the null hypothesis of over-identification is rejected as the  $p$ -values (0.466) for the Hansen  $J$  statistic (of 0.532) is greater than 0.1. These three tests together provide some assurance that the selected instruments meet the required benchmarks for inclusion in the first-stage (column 1) and exclusion in the second-stage equations (column 2).

In the second stage, we exclude the exogenous instruments and use the predicted value of BOD female representation as our main independent variable. The results from the second stage regressions (column 2) suggest that, consistent with our main hypothesis (H1), female representation *causes* an increase in firm employment ( $p$ -value of 0.013). Finally, to mitigate concerns that our results in Table 6 might be driven by the choice of instruments, we use up to 5 lags of BOD female representation as alternative instruments for BOD female representation under a generalised method of moments (GMM) regression framework. Our results for this alternative estimation are presented in columns 3 and 4. Again, we find that the predicted value of female representation derived from its lagged values) is significantly related to firm-level employment. In other words, our conclusion remains robust; an increase in female representation on the BOD *causes* an increase in corporate employment.

## 5. Concluding remarks

### 5.1. Discussion of findings

Drawing from upper echelons and social role theories (Dadanlar & Abebe, 2020; Eagly, 1987; Hambrick & Mason, 1984), we predict that because women tend to be more compassionate, inclusive and ethical in their decision-making, they are more likely to promote firm-level employment (employee retention), oppose downsizing initiatives and curb the problem of under-staffing, particularly when sufficiently represented in corporate boards. We predict that their impact on employment will be particularly pronounced during periods of financial crises when firms tend to significantly reduce employment in response to a decline in aggregate demand, production and output. We test our predictions using a sample of 8170 firm-year observations over the period 2007–2016, comprising of 1308 unique firms listed on major US stock exchanges, including the NYSE, AMEX and NASDAQ.

Our results support our predictions. Consistent with social role theory (Creek et al., 2019; Dadanlar & Abebe, 2020; Eagly, 1987; Eagly et al., 2000), we find evidence that firms with more female directors on their boards employ comparative more staff and are less likely to engage in significant employee layoffs. Our results are consistent with Chen and Kao (2020) but contrast with Matsa and Miller (2013) by showing that the lower likelihood of downsizing associated with female directors does not compromise productivity. We extend the latter two studies by documenting heterogeneity in the impact of executive and non-executive female directors on firm employment and the likelihood of downsizing, thus highlighting the importance of female directors at both the executive and non-executive director levels. Specifically, we show that executive female directors play an important role in improving firm-level employment while non-executive female directors are critical to reducing the likelihood of downsizing in firms. Consistent with token theory (Kanter, 1977; Smith & Parrotta, 2018; Torchia et al., 2011), we find that the impact of female directors on employment outcomes is stronger when female directors can influence (captured through the presence of a critical mass of female directors) decision-making on the BOD. Finally, we show that the documented relationship is also more pronounced during crisis periods—generally characterised by falling employment and low staff retention.

To strengthen our contention that female directors on the BOD are indeed good for society through their influence on firm employment, we need to show that this employment alleviates problems of under-staffing but also does not create inefficiencies through over-staffing or a decline in employee output. Given the lack of suitable measures of under(over)-staffing, we develop a new measure which predicts the expected level of staffing from firm sales, growth in sales and asset structure. Using this new measure, we provide evidence that female directors' positive influence on firm employment alleviates under-staffing problems and does not lead to a decline in employee productivity. From a methodological stance, we also rule out alternative interpretations of our main findings and show that our main results are robust to several endogeneity concerns. Specifically, by using an instrumental variable approach, we provide evidence of causation—i.e., an increase in female directorships within the BOD *causes* an increase in firm employment.

A few limitations to our work, as well as opportunities for future research are noteworthy. Our work draws evidence from a single country (the US) and hence, it might be difficult to generalise our results beyond this context. Byron and Post (2016), for example, show that the influence of female directors depends on institutional factors such as the level of shareholder protection and gender parity in the country. Secondly, we could, perhaps, better evidence the social role of women in firms by exploring employment of under-represented groups such as women and minorities. However, this data is not available for our sample. This, therefore, presents an opportunity to extend our study using a different sample. Finally, while we have sought to evidence causation by using two-stage least squares and GMM approaches, a

**Table A.1**  
Variable descriptions.

Variable	Description
Panel A: Firm variables	
Employees to assets	Number of employees to total assets ratio.
Total employees (Log)	The log of total employees.
Downsizing (10%)	A dummy variable that takes a value of one if a firm reduces its total employees by 10% in any year and a value of zero, otherwise.
Downsizing (20%)	A dummy variable that takes a value of one if a firm reduces its total employees by 20% in any year and a value of zero, otherwise.
Crisis	A dummy variable that takes a value of one if year is 2007 or 2008 and a value of zero, otherwise.
Staff Productivity	Ratio of total sales per employee.
Profitability	The ratio of earnings before interest and tax to total capital employed.
Tobin's Q	The sum of the book value of debt and the market value of equity, scaled by the book value of assets.
Liquidity	The ratio of cash and short term investments to total assets.
Leverage	The ratio of long term debt to total assets.
Firm size	The natural log of total assets.
Free cash flow	Cash flow from operations less capital expenditures normalised by total assets.
Tangible assets	The ratio of property, plant and equipment to total assets.
Concentration	Herfindahl–Hirschman index; sum of the squared market shares (proxied by total revenues) of all listed firms in the 4-digit SIC code industry.
Panel B: Governance characteristics	
Female representation	The proportion of women (female directors) on the board of directors (BOD).
Female representation- EDs	The proportion of female executive directors on the BOD.
Female representation- NED	The proportion of non executive directors (NED) that are women (female directors).
Female presence	A dummy variable which takes a value of one when at least one director is female and a value of zero, otherwise.
One woman	A dummy variable which takes a value of one when exactly one director is female and a value of zero, otherwise.
Two women	A dummy variable which takes a value of one when exactly two directors are female and a value of zero, otherwise.
Critical mass	A dummy variable which takes a value of one when three or more directors are female and a value of zero, otherwise.
Board ownership	The proportion of shares in the company owned by board members.
Board independence	The proportion of independent directors on the board.
Board size	Total number of directors (executive and independent) on the board.
Board tenure	The average length of time (years) that directors have held their board sits.
Board busyness	The average number of outside board positions held by board members.
Board networks	The sum of the networks of all board members. Each board member's network captures the number of overlaps (with other outside directors) through employment, other activities, and education.
Board ability	The <a href="#">Demerjian et al. (2012)</a> measure of managerial ability (MA score). We are grateful to Peter Demerjian for making the measure freely available from his <a href="#">webpage</a> .
Board age	The average age of directors on the board.
Block holding	The proportion of total shares held by shareholders with large shareholding (of at least 5%).
CEO Chair	An indicator variable for firms in which the roles of CEO and board chair are held by the same individual.
Equity compensation	The average proportion of board members' compensation comprising of long term incentive plans.
Firm CSR score	Corporate social responsibility index reflecting a firm's performance across four KLD database CSR dimensions including Community, Employment, Environment and Human rights. The index is computed in line with <a href="#">Servaes and Tamayo (2013)</a> . Specifically, for each dimension, we first divide a firm's total number of CSR strengths (weaknesses) reported in KLD by the maximum possible number of strengths (weaknesses) to generate two indices that range from 0 to 1 (or 0 to 100%). We then compute net CSR involvement as the difference between the strength index and the weakness index. This index lies between $-1$ and $+1$ . Finally, we combine the net CSR index across the four dimensions to generate a new index that ranges from $-4$ to $+4$ .

difference-in-difference approach could, perhaps, offer more direct evidence of our hypothesis. Several countries (e.g., Norway, Germany, Netherlands, France, Italy and Belgium) have instituted gender quotas in boardrooms. Therefore, it is interesting to explore whether firms affected by these new regulations experience changes in employment outcomes.

## 5.2. Theoretical contributions and implications

While several studies have provided evidence on the impact of female directors on corporate outcomes, these studies generally focus on the shareholder perspective of the firm. They emphasise the role of female directors in enhancing board monitoring activities and board processes, thus leading to improved organisational outcomes such as better firm performance, reporting quality, innovative ability and stock liquidity and lower earnings management, likelihood of securities fraud, executive pay, finance cost and board overconfidence ([Cumming et al., 2015](#); [Green & Homroy, 2018](#); [Luo et al., 2018](#); [Torchia et al., 2011](#)). By focusing on employment, our study deviates from the latter literature but aligns with studies exploring how female directors influence social aspects (including ethics, CSR and employment outcomes) within organisations ([Bernardi et al., 2009](#); [Bøhren & Strøm, 2010](#); [Chen & Kao, 2020](#); [Matsa & Miller, 2013](#); [Nadeem et al., 2017](#); [Nekhili & Gatfaoui, 2013](#)).

Our work draws on social role theory that emphasises the ability of women to strongly empathise, be inclusive, long-term oriented, communal and ethical in decision-making ([Eagly, 1987](#); [Eagly et al., 2000](#)) when compared to their male counterparts. We identify decisions around employment and the allocation of work (staffing) as an avenue through which these unique abilities can manifest, owing to the fact that firms typically re-organise labour costs – one of their major costs of operations – in response to challenges in the business environment. Our study provides some evidence on empathy, inclusivity and ethicality in decision-making but also shows that this approach is not blind to the need to maintain efficiency and productivity. Our work, therefore, opens up opportunities for further research drawing on the empathising role of women in business and how this influences decision-making within organisations—an issue which has been generally ignored in prior business research.

Ultimately, by highlighting the important role of women in enhancing employee (stakeholder) outcomes in firms and consequently, in society, our study evidences the role of women in shaping firms' CSR and ethical orientation towards their employees. Our evidence supports calls for increased gender diversity and representation in corporate boards as this results in positive outcomes for firms and society without compromising productivity.

### 5.3. Practical contributions and implications

Our findings have important implications for management and regulators. Primarily, our work highlights the possibility that organisations can “do more with more” staff, particularly when women influence board decisions. We complement prior studies showing that organisations with more female directors are generally highly rated by employees (Bernardi et al., 2006). We highlight the potential role of women in improving employment opportunities, providing meaningful work and a decent work environment while also driving shareholder value. This asserts that women are critical to the development of sustainable organisations and stronger societies.

Furthermore, our study adds to the evidence on the business case for adding women to BODs. Despite some scepticism on the value relevance of female directors in boardrooms (Greene et al., 2020) especially in light of the recent (May 13, 2022) reversal of the California gender diversity board mandate, our work provides regulators with further evidence to support efforts to increase female board representation. Specifically, we highlight that female directors enhance decision-making in boardrooms by enabling firms to play a more positive role in society, particularly in periods of economic hardship.

### CRedit authorship contribution statement

**Abongeh A. Tunyi:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Geofry Areneke:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Abiye Tob-Ogu:** Writing – review & editing, Writing – original draft, Conceptualization. **Sharif Khalid:** Writing – review & editing, Writing – original draft, Conceptualization.

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### Appendix

See Table A.1.

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