

# APPOINTING FEMALE CEOs IN RISKY AND PRECARIOUS FIRM CIRCUMSTANCES: A REVIEW OF THE GLASS CLIFF PHENOMENON

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## Abstract

**How to cite this paper:** Velte, P. (2018). Appointing female CEOs in risky and precarious firm circumstances: A review of the glass cliff phenomenon. *Corporate Ownership & Control*, 15(2), 33-43. <http://doi.org/10.22495/cocv15i2art3>

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**ISSN Online:** 1810-3057  
**ISSN Print:** 1727-9232

**Received:** 17.11.2017  
**Accepted:** 28.12.2017

**JEL Classification:** M4, H1, K2, G3  
**DOI:** 10.22495/cocv15i2art3

Following thirty years of discussion of the “glass ceiling,” recent empirical research has focused on the relatively new phenomenon of women on the board of directors – the so-called “glass cliff.” This refers to a form of gender discrimination in which women are more often appointed to leadership positions in risky and precarious business circumstances than their male counterparts. Highlighting the key findings of current quantitative and qualitative research, this literature review assesses existing support for the glass cliff hypothesis and the limitations of empirical research and recommendations. Most of the included studies find support for the glass cliff, in which “think crisis, think female” stereotypes complement the traditional “think leadership, think male” approach. As archival and other studies have been conducted predominantly in Anglo-American countries, future research should extend to other methods and settings. In contrast to the recent literature, the present review draws a clear distinction between archival, experimental and qualitative research, so increasing interest and relevance for practitioners, regulators and researchers.

**Keywords:** Gender Diversity, Corporate Governance, Firm Performance, Glass Ceiling, Glass Cliff, Board of Directors

## 1. INTRODUCTION

Empirical research on gender discrimination in the entry to leadership positions (the “glass ceiling”) has been on-going for more than 30 years. In certain circumstances, however, the glass ceiling gives way to the “glass cliff,” where women are appointed to risky and precarious leadership positions with a great probability of failure (Ryan et al., 2016). The two phenomena must be discussed together in order to analyse the specific conditions in which women may break through the glass ceiling (Bruckmüller et al., 2014). In contrast to the prevailing gender stereotype (“think leadership, think male”), women may have a “leadership advantage” at times of poor company performance (“think crisis, think female”) (Eagly & Carli, 2003). This may, for instance, explain why women were appointed to top management

positions in the wake of the financial crisis of 2008/09.

There are two possible motives for glass cliff appointments. On the one hand, they may be a signal to the market, indicating a commitment to innovative strategies by selecting a female top manager with crisis management experience (Ryan et al., 2016). As compared to men, female leaders possess different skills and traits that may increase the probability of successful crisis management (Eagly & Carli, 2003). The strategic need for organizational change and a departure from standard leadership practices in times of crisis (Kaplan & Minton, 1994; Lee & James, 2007) can, therefore, lead to glass cliff appointments. Since the financial crisis of 2008/09, there has been a widespread international discussion of the economic implications of appointing female board members.

The assumption is that women on boards enhance corporate governance, especially with regard to innovation challenges (digitalization, industry 4.0) and increased stakeholder management through non-financial reporting (e.g., CSR reporting, integrated reporting). Current meta-analyses stress the positive impact of gender diversity on financial and CSR performance (Byron & Post, 2016; Post & Byron, 2015), and literature reviews (e.g., Velte, 2017; Cabrera-Fernandez et al., 2016) analyse and highlight these performance effects. Beyond innovation management, male-dominated boards may choose to appoint a woman because of the high risk of failure and shortboard tenure in risky business situations. If a firm's crisis persists or worsens, the huge stakeholder awareness and media pressure associated with poor performance or crisis status (e.g., Boin et al., 2010) make a female leader highly visible.

The present review examines the empirical literature on the glass cliff phenomenon from an international perspective, which is likely to be of value to researchers, regulators and practitioners alike. The evaluation corresponds to vote counting of significances (Light & Smith, 1971). In distinguishing clearly between different research methods and their results, this review makes a number of important contributions to the existing literature, synthesizing new insights from rich empirical findings and offering recommendations for further research. In contrast to earlier reviews of the glass cliff, we analyse the results of empirical studies by research method (archival, experimental or qualitative), offering a starting point for future research by analysing the determinants and consequences of glass cliff positions while also raising practitioner awareness of the need for gender diversity and resources. Our findings also offer useful insights from a regulatory perspective (e.g., fixed gender quotas in European member states).

The paper is structured as follows. Section 2 describes possible input factors, moderators and output factors of glass cliff appointments as a basis for theoretical argumentation. Section 3 details the research method, especially with regard to data selection and structure. Major findings are presented in section 4, distinguishing between archival, experimental and qualitative research. Finally, in section 5, we consider the limitations of existing empirical research and make recommendations for future research, regulation and practice.

## 2. DETERMINANTS, CONSEQUENCES AND MODERATORS OF THE GLASS CLIFF

To gain a deeper understanding of the glass cliff phenomenon, it is useful to differentiate between certain determinants (input factors), moderators and consequences (output factors). In contrast to the reviews by Bruckmüller et al. (2014) and Ryan et al. (2016), we cluster studies in terms of research methods (archival, experimental, empirical-qualitative) and their results. In developing this conceptual framework, we first consider possible *input factors*, which have been the main focus of the

cited studies. According to traditional gendered beliefs about female and male leadership ("stereotypes"), women tend to be perceived as communal while men are more likely to be perceived as agentic (Koenig et al., 2011). Stereotypical beliefs about "good leadership" tend to correspond to stereotypically masculine traits ("think manager, think male") (Schein, 1973; Schein et al., 1996). In general, men tend to be judged as better suited to top management positions, and women who take on these positions are judged less favourably than men (Eagly & Karau, 2002). However, in crisis situations, the link between masculinity and effective leadership is attenuated. Women's perceived communality may contribute to the glass cliff effect, as this attribute is considered relevant mostly at times of crisis ("think crisis, think female") (Ryan et al., 2011). Research on the glass cliff tends to concentrate on experimental studies of these gender stereotypes in business life.

Second, we discuss possible *moderating effects* of glass cliff appointments, assuming that the relevant factors include the nature of the crisis (Ryan et al., 2011), the availability of support to handle the crisis (Rink et al., 2013) and decision makers' individual differences, especially in terms of the desire to maintain the status quo (Brown et al., 2011). Finally, possible *output factors* of glass cliff positions seem important, as gender reactions to the glass cliff may be heterogeneous. When women acknowledge the existence of a glass cliff and accept these positions (Ryan et al., 2007), what happens next? Is it true that top females are more likely to be replaced than their white male counterparts (Cook and Glass, 2014a)? Current studies rely on the tenure of female board members.

## 3. RESEARCH METHOD

The method adopted here is the structured literature review, which aims to develop new insights, critical reflections, future research recommendations and research questions. Literature reviews are common in current corporate governance, management and diversity research. Their quality has increased in recent years, with the emergence of dedicated software and online research tools and databases (e.g., Google Scholar) linking to journal articles (Velte, 2017). Massaro et al. (2016) specified ten steps for developing a structured literature review: review protocol, research questions, types of studies, article impact, analytical framework, review reliability and validity, coding the data, developing insights and critique and developing future research and questions. The present study draws on this proposed structure. As stated above, the research question addresses the empirical existence of glass cliff positions, differentiating clearly between archival, experimental and empirical-qualitative research and results.

The empirical studies included in this literature review were identified by comparing international databases (Web of Science, Google Scholar, SSRN, EBSCO, ScienceDirect) and libraries. As a first step, we used the keywords "gender diversity", "women on boards", and "women on boards of directors" in combination with "glass cliff" or "glass ceiling" as

search items. In parallel, the search was either widened by the addition of the broader terms “corporate governance” and “firm performance” or narrowed by the addition of specific variables (e.g., “CEO gender”, “CFO gender”). In the next step, contributions were examined for suitability of empirical research design. Given that discussion of glass cliff effects is international, it was not considered useful to focus on a particular country or regime. Additionally, as this is a young research discipline, a temporal restriction was not considered useful. The final sample included 32 studies.

The overview of current empirical research facilitates systematic mapping and analysis of the current state of international research. A quantitative literature analysis in the form of vote counting (Light and Smith, 1971) concentrates on significant findings and their respective signs but ignores specific coefficient values. Vote counting is widely used in corporate governance and management research but has not yet been applied in the present context. We are aware that vote counting is of limited use for synthesizing evidence from multiple evaluations, which involves comparing the number of significances. However, these limitations are mitigated by a quantitative meta-analysis. Glass cliff studies to date are too heterogeneous and too low in their amount to support a full meta-analysis yet.

Table 1 provides an overview of the included studies by year of publication, region, journal and

research method. More than half of the included studies used empirical-quantitative methods such as archival research (18). Experimental designs (9) and qualitative methods (e.g., interviews or surveys) (5) have to date been less widely used. The time range of reviewed studies extends from 2005 (when the first study was published by Ryan and Haslam in the UK) to 2017. Studies of the Anglo-American capital market (USA: 11; UK: 9) predominate, with few studies of other countries (e.g., The Netherlands (3); Germany, China, Switzerland, Spain, Canada (1 each)). Cross-country studies are also rare up to now. The wide range of journals encompasses such disciplines as psychology, management, gender, human resources, ethics, culture and law; in contrast to other research on gender diversity, finance and accounting journals have not featured research on the glass cliff. The British Journal of Management was frequently used (5), reflecting the considerable contribution of UK researchers. In contrast to the glass ceiling, empirical research on the glass cliff is relatively recent, and this is reflected in the total number of cited studies (32), which is also small in relation to the much greater number examining the link between gender diversity and firm performance (Velte, 2017). It is interesting that no glass cliff research has yet been conducted in Scandinavia, as this region has been very active in recent years in developing gender diversity regulations.

**Table 1.** Count of cited published papers on glass cliff

	<i>Panel A: by publication year</i>	<i>Panel B: by region</i>	<i>Panel C: by journal</i>	<i>Panel: by research method</i>
Total: 32	<ul style="list-style-type: none"> <li>• 2017: 2</li> <li>• 2016: 2</li> <li>• 2015: 4</li> <li>• 2014: 5</li> <li>• 2013: 2</li> <li>• 2012: 3</li> <li>• 2011: 3</li> <li>• 2010: 4</li> <li>• 2009: 2</li> <li>• 2008: 1</li> <li>• 2007: 2</li> <li>• 2006: 1</li> <li>• 2005: 1</li> </ul>	<ul style="list-style-type: none"> <li>• Cross country: 3</li> <li>• USA: 11</li> <li>• UK: 9</li> <li>• The Netherlands: 3</li> <li>• Germany: 1</li> <li>• China: 1</li> <li>• Switzerland: 1</li> <li>• Spain: 1</li> <li>• Canada: 1</li> <li>• N.a.: 1</li> </ul>	<ul style="list-style-type: none"> <li>• Working Paper: 1</li> <li>• British Journal of Management: 5</li> <li>• Communication and Conflict: 1</li> <li>• Corporate Board: 1</li> <li>• Equal Opportunities International: 1</li> <li>• European Journal of Social Psychology: 1</li> <li>• European Journal of Work and Organizational Psychology: 1</li> <li>• Gender in Management: 1</li> <li>• Gender, Work and Organization: 1</li> <li>• Global Business and Organizational Excellence: 1</li> <li>• Human Resource Management: 1</li> <li>• Journal of Applied Psychology: 2</li> <li>• Journal of Business Ethics: 1</li> <li>• Journal of Experimental Social Psychology: 1</li> <li>• Journal of Organizational Change Management: 1</li> <li>• Journal of Organizational Culture: 1</li> <li>• Journal of Public Administration Research and Theory: 1</li> <li>• Personality and Social Psychology Bulletin: 1</li> <li>• Political Research Quarterly: 1</li> <li>• Psychological Science: 1</li> <li>• Psychology of Women Quarterly: 1</li> <li>• Public Administration Quarterly: 1</li> <li>• Strategic Management Journal: 1</li> <li>• The American Review of Public Administration: 1</li> <li>• The British Psychological Society: 1</li> <li>• The Leadership Quarterly: 2</li> <li>• William and Mary Journal of Women and the Law: 1</li> </ul>	<ul style="list-style-type: none"> <li>• Quantitative: archival/event study: 18</li> <li>• Quantitative: experimental: 9</li> <li>• Qualitative: 5</li> </ul>

## 4. RESULTS OF THE LITERATURE REVIEW

### 4.1. Archival studies

Most archival studies concentrate on glass cliff effects in business, although some also analyse public or regulatory organizations. Most of these studies find empirical evidence for the existence of the glass cliff, including Elsaid and Ursel (2017), Gupta et al. (2017), Sun et al. (2015), Sabharwal (2015), Smith (2015), Kulich et al. (2014) (public organizations), Mulcahy and Lineham (2014), Cook and Glass (2014a), Smith and Monaghan (2013) (US federal regulatory organizations), Brady et al. (2011) and Ryan and Haslam (2005). In contrast, Bechtold et al. (2016), Hennessey et al. (2014), Cook and Glass (2014b), Cook and Glass (2011), Adams et al. (2009) and Santen and Donker (2009) find no significances.

To date, there have been only two cross-country studies (Cook & Glass, 2014a; Cook & Glass, 2014b). As already mentioned, there is a strong focus on the USA (Elsaid & Ursel, 2017, Gupta et al., 2017; Sabharwal, 2015; Smith, 2015; Smith & Monaghan, 2013; Cook & Glass, 2011; Brady et al., 2011; Adams et al., 2009), as well as on the UK (Kulich et al., 2014; Mulcahy & Lineham, 2014; Haslam et al., 2010; Ryan & Haslam, 2005).

Heterogeneous variables have been used to test possible determinants of glass cliff effects. One research strand focuses on firm performance (accounting- and/or market-based), as represented by Bechtoldt et al. (2016), Cook and Glass (2014a; 2014b), Hennessey et al. (2014), Cook and Glass (2011), Haslam et al. (2010), Adams et al. (2009) and Ryan and Haslam (2005). Other research relates to occurrence of an initial loss (Mulcahy & Lineham, 2014); financial distress (Santen & Donker, 2009) or economic crisis (Sun et al., 2015); shareholder activism (Gupta et al., 2017); risk of CEO turnover (Elsaid & Ursel, 2017) or a mix of different risk factors (Sabharwal, 2015; Smith, 2015; Smith & Monaghan, 2013; Brady et al., 2011).

### 4.2. Experiments

Unlike archival studies, experiments investigate individual preferences and behaviours, and their

internal and external validity is much higher than for archival studies. Most experimental studies also find support for the glass cliff phenomenon: Kulich et al. (2014), Rink et al. (2013), Gartzia et al. (2012), Brown et al. (2011), Ryan et al. (2010) (also in political parties), Bruckmüller and Branscombe (2010), Haslam and Ryan (2008), and Ashby et al. (2007). Only Rink et al. (2012) do not find glass cliffs to be of any significance.

With no cross-country studies to date, experimental studies typically address countries that include the USA (Brown et al., 2011; Bruckmüller & Branscombe, 2010) and the UK (Ryan et al., 2010; Haslam & Ryan, 2008; Ashby et al., 2007), as well as Switzerland (Kulich et al., 2014), The Netherlands (Rink et al., 2013; 2012) and Spain (Gartzia et al., 2012).

Heterogeneous variables have also been used to test the determinants of glass cliff effects. As in recent archival studies, one research strand focuses on firm performance (Haslam & Ryan, 2008; Bruckmüller & Branscombe, 2010; Kulich et al., 2015). Other possible determinants explored to date include “threat” (Brown et al., 2011), “performance crisis” (Rink et al., 2013), male leadership role model in crisis management (Gartzia et al., 2012), “social and financial resources for precarious situation” (Rink et al., 2012), and “high risk case” (Ashby et al., 2007). In comparison to accounting and/or market-based performance measures, the aforementioned variables are linked with decreased objectivity and quantification.

### 4.3. Empirical-qualitative research

Empirical-qualitative research on glass cliffs, which has been very rare up to now, commonly employs interview techniques. Full support for glass cliff was stated by all cited studies: Glass and Cook (2016), Hunt-Earle (2012), Ryan et al. (2010), Ryan et al. (2007), and Wilson-Kovacs et al. (2006). With one exception – a worldwide study by Glass and Cook (2016) – interviews have to date been used only in the USA (Ryan et al., 2010) and the UK (Ryan et al., 2007; Wilson-Kovacs et al., 2006). Table 2 provides an overview of the included studies.

Table 2. Design and results of recent empirical research on glass cliff (Part 1)

Year of publication	Author(s)	Sources	State Sample Year(s) Method	Independent variable(s)	Dependent variable(s)	Significant results
<i>Quantitative: archival/event study</i>						
2017	Elsaid and Ursel	British Journal of Management	North America 193 female CEOs 1992-2014 archival	Gender of the CEO (0;1)	Risk of CEO turnover	- Women are appointed in precarious situations - Female CEOs are 40% less likely to face turnover at any point after appointment than male CEOs - Lower turnover rate of female CEOs is related to firms' desire to avoid the negative publicity that would accompany their termination, and that greater education has a positive impact on CEO job security
2017	Gupta et al.	Journal of Applied Psychology	The USA 3,026 firms 1996-2013 archival	Female CEO (1; 0)	Shareholder activism (at least one schedule 13D filing indicating a large shareholder) Shareholder activism number (number of unique schedule 13d filings during a year)	- Female CEOs are significantly more likely than male CEOs to come under threat from activist investors (may face additional challenges)
2016	Bechtoldt et al.	Working Paper	Germany 75 female appointments to management boards from 60 firms 1999-2014 archival	Firm performance (cumulative raw return, cumulative market-adjusted return, cumulative risk-adjusted return, ROE, ROA)	Election of a female member in the management board (1; 0)	- Firms are more likely to promote women to their boards in times of stability (no support for glass cliff!) After the appointment decision, they continue to perform better than their competitors appointing men
2015	Sun et al.	Journal of Business Ethics	China 14,609 firm-quarter observations 2007-09 archival	Economic crisis (early and later state of crisis)	Female directorship (0;1) Investment growth (funds used for additions for PPE, intangible assets, and other long-term assets during the quarter of year)	- Chinese boards are more likely to accept female directorships during an economic crisis than during an economic prosperity stage - Boards with greater gender diversity are more likely to make tough, countercyclical investments to improve firm performance during a crisis
2015	Sabharwal	Journal of Public Administration Research and Theory	The USA 2010 Federal 177,586 responds from employee viewpoint survey (senior executive service in US federal government agencies) archival	Influence over policies Empowerment Organizational justice equity Work-life balance issues	Intention to leave the workplace within one year (surrogate for glass cliff) (0; 1)	- SES women in distributive and constituent policy agencies are most likely to face glass cliffs - The odds of women falling off the glass cliff are less when women have influence over policymaking decisions, perceive empowerment and experience organizational equities
2015	Smith	Public Administration Quarterly	The USA 911 school districts of local education agencies 2004 archival	Risk in organizational circumstances (work complexity) Political environment (partisan or elected positions) Demographic similarity (female teachers)	Percentage of female school administrators	- Support for the glass cliff theory (more female leaderships in a complex environment) - Women hold more leadership positions in public organizations when women are elected positions, women are in lower ranking positions and agencies are larger
2014	Cook and Glass	Strategic Management Journal	Worldwide Fortune 500 1996-2010 archival	Firm performance (ROA; ROE; share price return)	Transition of an occupational minority (white women; men and women of colour) to CEO (1; 0) Transition of a traditional white male replacing a minority CEO	- Occupational minorities (white women; men and women of colour) are more likely than white men to be promoted CEO of weakly performing firms - No significant differences in tenure length between minorities and white men - When firm performance declines during the tenure of minority CEO, these leaders are likely to be replaced by white men
2014	Hennessey et al.	Journal of Organizational Culture, Communications and Conflict	Canada 100 firms 2006-08 Event study	Appointment of a female director	Cumulative raw returns, cumulative excess return, return for the month of the announcement	- Glass cliff is not apparent for board level appointments in Canada - Superior stock market performance in the pre-appointment period for companies appointing female directors
2014	Cook and Glass	Gender, Work and Organization	Worldwide Fortune 500 1990-2011 Archival	Firm performance (ROA; ROE; shareholder return)	Transition of a female leader replacing a male CEO (1; 0) Transition of a male leader replacing a white CEO (1; 0)	- Diversity among decision makers and not firm performance significantly increases women's likelihood of being promoted to top leadership positions - Diversity among decision makers increases women leaders' tenure as CEO regardless of firm performance
2014	Kulich et al.	Political Research Quarterly	The UK General election results 2001, 2005, 2010 Archival	Party (conservative versus labour) Gender (male versus female) Ethnicity (white versus BME)	Electoral success Winnability of seat	- Conservative black and minority ethnic (BME) candidates were less successful than their white counterparts - Mediation analyses demonstrate that this lack of success can be explained by the lower winnability of BME candidates' seats, such that the opposition candidate held a seat with a significantly larger majority compared with white candidates' opponents

Table 2. Design and results of recent empirical research on glass cliff (Part 2)

Year of publication	Author(s)	Sources	State Sample Year(s) Method	Independent variable(s)	Dependent variable(s)	Significant results
<i>Quantitative: archival/event study</i>						
2014	Mulcahy and Lineham	British Journal of Management	The UK 138 companies on the UK stock exchange reporting an initial loss 2004-2006 Event study	An initial loss is incurred (big or small loss)	Percentage of female directors Blau index Shannon index	- When the loss is big, there is difference in the increase in gender diversity versus both the control and the "small loss" firms, that means evidence of the glass cliff
2013	Smith and Monaghan	The American Review of Public Administration	The USA 118 US federal regulatory organizations archival	Gender of policy area Risk (visibility of an agency and legislative complexity of the environment the agency works) Organizational size Organizational age Existing female representation as top leader Path to leadership	Gender of top leader Gender of second-level leadership	- Women remain underrepresented in federal regulatory agency leadership, but not in the same magnitude as in political representation and private organization leadership - Women are expected to get into leadership positions in organizations working in "feminine" policy areas and where a woman holds the top level of leadership - The proportion of women in upper-level leadership positions is expected to increase in agencies with a higher likelihood of failure when such agencies are less visible
2011	Cook and Glass	Human Resource Management	The USA Fortune 1000 companies 1991-2006 Event study	Appointment of women into senior leadership positions (1;0) Percent female per industry	Degree of change in share price	- Significant spike in stock price following the announcement of women into leadership positions - Size and direction of change in stock price moderated by gender composition of the industry
2011	Brady et al.	Gender in Management	The USA 444 Fortune 500 firms 2001-05 archival	Role of executive title Sector Firm size Firm stability (net income change, growth rate of sales, Black-Scholes volatility measure) Occurrence, number and nature of firm scandals	Sex of the holder of an executive office	- Firms that have experienced a scandal in recent years are more likely to have female executives - The nature and quantity of scandals do not have significant effects
2010	Haslam et al.	British Journal of Management	The UK 92,-96 FTSE 100 companies 2001-05 archival	Women's presence on board of directors (0;1) Percentage of female board members	Company performance (ROA, ROE, Tobin's Q)	- No relationship between women's presence on boards and objective accounting-based measures of performance (ROA, ROE). - Negative relationship between women's presence on boards and subjective stock-based measures of performance
2009	Adams et al.	British Journal of Management	The USA 1,303 CEO appointments 1992-2004 Archival	Stock price performance	CEO appointment (female; male)	- Corporate performance preceding CEO appointments tends to favour females, implying that females (males) are appointed to CEO largely at times when the firm is in relatively better (worse) financial health - Disaggregating the data by appointments in up versus down markets, at high-risk versus low-risk firms, and by calendar time yield similar results (no glass cliff)
2009	Santen and Donker	Corporate Board	The Netherlands 334 firms 1993-2003 archival	Financial distress	Number of female executive directors Number of female non-executive directors on the board Number of female directors in management and supervisory board	No relationship is found between the gender of director and financial distress
2005	Ryan and Haslam	British Journal of Management	The UK FTSE 100 firms archival	Loss/gain in share price Average monthly share price	Appointment of women to the board	During a period of overall stock-market decline, those companies who appointed women to their boards were more likely to have experienced consistently bad performance in the preceding five months than those who appointed men

**Table 2.** Design and results of recent empirical research on glass cliff (Part 3)

Year of publication	Author(s)	Sources	State Sample Year(s) Method	Independent variable(s)	Dependent variable(s)	Significant results
<i>Quantitative: experimental</i>						
2015	Kulich et al.	Journal of Experimental Social Psychology	Switzerland 159 (93) students n.a. experiment	Performance attribution (controllable or not) Firm performance Mediator: actual change, signal of change	Choice of a male or female candidate (0;1)	- A glass cliff only occurs if firm performance is attributed to bad leadership - The glass cliff is explained by the woman's perceived potential to signal change - Non-traditional leaders are strategic choices to signal change to the outside world
2013	Rink et al.	European Journal of Social Psychology	The Netherlands 85 undergraduate students n.a. Experiment	Gender of the leader Social resources availability Performance crisis	Anticipated leader effectiveness Leader ability to establish acceptance Gendered leadership traits Precariousness of leadership position	- The glass cliff effect is attenuated when organizational stakeholders support the decision to appoint a new leader - The glass cliff effect remains when this decision is not fully supported - This moderation seems driven by beliefs that men are more likely to possess agentic leadership traits and women more communal leadership traits - When there is no performance crisis, these gendered beliefs are less influential, and thus, social resources do not inform people's leader evaluations
2012	Gartzia et al.	European Journal of Work and Organizational Psychology	Spain 301 workers and managers from 20 organizations Experiment	Type of male leadership role model (MLRM) (instrumental, expressive, control) Sexism (gender ideology scale by Moya et al. (2006))	Sex of the candidate (male/female) Type of gendered traits (expressive, instrumental, control)	Two relevant factors may hinder the acceptance of female leaders and stereotypically feminine characteristics in crisis management: instrumental (male) leadership role models and sexist attitudes
2012	Rink et al.	Psychological Science	The Netherlands 146 business students n.a. Experiment	Gender of the leader Financial resources Social resources Social and financial resources	Position evaluation (precariousness) Anticipated acceptance Anticipated influence	- Women and men evaluate glass cliff positions differently depending on the social and financial resources available - Women evaluated the position without social resources most negatively, whereas men evaluated the position without financial resources most negatively. - Women's evaluations and expected levels of influence as leaders depend on the degree to which they expected to be accepted by subordinates - Men's evaluations and expected levels of acceptance by subordinates depend on the degree to which they expected to be influential in the position
2011	Brown et al.	Personality and Social Psychology Bulletin	The USA 107 (116, 88) psychology students, 53 individuals from Amazon's Mechanical Turk n.a. Experiment	Threat Leader sex (male/female) Leadership orientation (change or stability)	Implicit preferences for change (flexibility and stability) Beliefs about change and stability-oriented leadership Support and vote for the candidate	- Threat evokes an implicit preference for change over stability and gender stereotypes align women with change but men with stability - The typical preferences for male leaders is diminished, or even reserved, under threat - The shift away from typical gender-based leadership preferences occurs especially among individuals who highly legitimize the socio-political system, suggesting that these preferences shifts might serve to protect the underlying system.
2010	Ryan et al.	Psychology of Women Quarterly	The UK 2005 1,258 candidates for general election/80 undergraduate students Experiment/archival	Candidate gender and political party (conservative versus labour) Seat winnability and participant gender	Seat winnability Electoral success (percentage of votes won) Ranking of the focal candidates	- In the conservative party, women contested harder to win seats than did men - A male candidate was more likely than a woman to be selected to contest a safe seat, but there was a strong preference for a female rather than a male appointment when the seat was described as hard to win
2010	Bruckmüller and Branscombe	The British Psychological Society	The USA 119 Psychology students n.a. Experiment	Gender History of leadership (male/female) Company performance	Choice as a new CEO	- Participants who read about a company with a male history of leadership selected a male future leader for a successful organization but chose a female future leader in times of crisis - This interaction - between company performance and gender of the preferred future leader - was eliminated for a counter-stereotypic history of female leadership - Stereotypically male attributes were most predictive of leader selection in a successful organization, while stereotypically female attributes were most predictive in times of crisis
2008	Haslam and Ryan	The Leadership Quarterly	The UK Management 95 graduate students, 85 high-school students and 83 business leaders n.a. experiment	Company performance	Perceived suitability of candidates for female and male leadership positions Perceived leadership ability Perceived quality of opportunity Stressfulness of position	- The likelihood of a female candidate for leadership selection in comparison to a male leader increased when the firm performance was declining rather than improving - These glass cliff appointments are associated with beliefs that they suit the distinctive leadership abilities of women; provide women with good leadership opportunities; are particularly stressful for women
2007	Ashby et al.	William & Mary Journal of Women and the Law	The UK 114 law students n.a. Experiment	Riskiness of case (high risk; low risk)	Selection of a female or male candidate as lead counsel	- A male candidate was as likely as a female to be selected as lead counsel for a low-risk case but that was a strong preference for a female rather than a male appointment for a high-risk case

Table 2. Design and results of recent empirical research on glass cliff (Part 4)

<i>Year of publication</i>	<i>Author(s)</i>	<i>Sources</i>	<i>State Sample Year(s) Method</i>	<i>Independent variable(s)</i>	<i>Dependent variable(s)</i>	<i>Significant results</i>
<i>Qualitative</i>						
2016	Glass and Cook	The Leadership Quarterly	worldwide Fortune500 Content analysis of Fortune500 and interviews with women executives across a variety of sectors	-	-	- Women are more likely than men to be promoted to high-risk leadership positions and often lack the support or authority to accomplish their strategic goals - Women leaders often experience shorter tenures compared to male peers
2012	Hunt-Earle	Global Business and Organizational Excellence	n.a. 40 university graduates n.a. interview	-	-	- The existence of a glass cliff is supported - Male recruiters showed no gender preference in the failing company context but favoured the male candidate for the low-risk position. - Female recruiters consistently favoured a female candidate, with this preference being more marked for a high-risk role
2010	Ryan et al.	Journal of Applied Psychology	Mostly from the USA 72 (109, 147 people with workplace experience) n.a. Questionnaire	-	-	- Study 1 reproduces "think manager - think male" (TMTM) associations for descriptions of managers of successful companies, but demonstrates a reversal for managers of unsuccessful companies - Study 2 examines the prescriptive nature of these stereotypes. No TMTM relationship was found for ideal managers of successful companies, but ideal managers of unsuccessful companies were associated with female stereotypes - Study 3 suggests that women may be favoured in times of poor performance, not because they are expected to improve the situation, but because they are seen to be good people managers and can take blame for organization failure
2007	Ryan et al.	Journal of Organizational Change Management	Mostly from the UK 164 self-selected individuals the questionnaire	-	-	- While women were more likely to acknowledge the existence of glass cliff and recognize its danger, unfairness, and prevalence for women, men were more likely to question the validity of research into the glass cliff, downplaying the dangers
2006	Wilson-Kovacs et al.	Equal Opportunities International	The UK 40 women in the private IT sector 2005 interview	-	-	Evidence that top-ranking positions can often hide non-anticipated obstacles and precarious situations that may prove damaging for women's careers.



## 5. DISCUSSION AND CONCLUSION

Although many studies have analysed the impact of gender diversity on firm performance in relation to the glass ceiling phenomenon, glass cliff effects have been the subject of empirical research only since 2005 and principally only in the USA and the UK, using archival methods. From research, regulatory and practical perspectives, women who break through the glass ceiling to occupy a glass cliff position are an important group for corporate governance research because of the high risk of gender discrimination. On the one hand, female appointments to leadership may serve as a positive market signal of innovative management strategies in successfully fighting a crisis, as in the stereotype “think crisis, think female.” On the other hand, female management appointments can also be linked to increased risk of failure and increased probability of short tenure, representing a case of gender discrimination. While many regimes around the world have regulated gender diversity (e.g., fixed quotas for non-executive or supervisory board members), incorporating diversity reporting in corporate governance reporting, the quality of gender diversity management tools seems to remain a “black box.” Reflecting this growing current interest, the present structured literature review includes 32 empirical studies of the glass cliff phenomenon from an international perspective. Our analysis differentiates empirical research methods (archival, empirical and empirical-qualitative studies). As archival and Anglo-American studies predominate, most find strong evidence for the existence of a glass cliff for female management positions in all research strands.

In this context, it is important to note some key limitations of earlier studies. One limitation (found mainly in the psychology literature) is the assumption that accounting-based performance measures (e.g. ROA, ROE) are “objective” while market-based measures (e.g., stock return, Tobin’s Q) are “subjective” (Bruckmüller et al., 2014). While the differentiation between accounting- and market-based performance is also “state of the art” in the finance, accounting and corporate governance literature, accounting-based measures are influenced mainly by earnings management in practice and are not as “objective” as many glass cliff researchers assume. This distinction between “objective” and “subjective” performance is critical, as other determinants of glass cliff effects included in recent experimental designs are associated with decreased objectivity and quantification. Aside from performance measures, other determinants of glass cliffs have been rarely included. We would encourage future researchers to build on the rich finance and accounting literature and their range of variables for describing a company’s risk profile. In addition, both financial and CSR performance must be assessed in the context of gender diversity and glass cliff effects. As recent research indicates, regulatory interventions assume a positive link between women on boards and CSR performance (Byron and Post, 2016), this should be explored in future studies. In

terms of methodology, most of the included studies employ empirical-quantitative models (archival and experiments), with relatively little use of qualitative methods. We would encourage future researchers to make greater use of interviews, surveys and case studies. In this context, a mix of qualitative and quantitative designs is also relevant. Moreover, the assumption of a linear relationship between performance and glass cliff positions by archival researchers is questionable; in fact, a non-linear (U-shaped) negative link seems more realistic. Archival studies must also continue to take account of endogeneity problems by using instrumental variables or dynamic generalized methods of the moment (GMM), as these issues are extremely important in increasing the validity of archival studies. The use of interactors and moderators should also be extended in future research because of their considerable relevance in explaining glass cliff appointments. As multinational studies have been very rare to date, we would encourage future research that incorporates country-specific variables (e.g., code versus law systems, level of shareholder rights, cultural issues). It is important to ask how different environments may contribute to the incentives for implementing glass cliff positions, as well as to issues of tenure and market reaction.

The implications of the glass cliff phenomenon for policy and practice have been widely examined and discussed in many countries. The present literature review also has regulatory implications. In contrast to the US capital market, European legislators and national regimes (such as Norway) have finalized several gender diversity reform initiatives since the financial crisis of 2008/09. The regulators’ intention is to incentivize broader stakeholder management that should result in a decision-useful gender diversity management. This is an important challenge, and it remains unclear to date whether these regulations contribute positively to board effectiveness and firm performance. Finally, we note some practical implications. In general, the descriptive statistics for studies included in our literature review found quite low female CEO scores, and there are many possibilities for improving gender diversity activities from a practical standpoint. Looking beyond implementation costs, management should be aware of positive impacts on firm reputation and stakeholder trust, which may lead in the long run to better CSR and financial performance. Transparency around the representation of women on boards of directors (gender diversity reporting) and implementation of gender quotas in the boardroom are the two best-known measures for restricting glass cliff and glass ceiling effects. However, regulations on gender diversity reporting and gender quotas must not lead to significant change in diversity management strategies that would reduce the prevalence of risky glass cliffs in the coming years. In light of the risk of “pinkwashing,” a diversity management system must be implemented as a first step. Subsequently, sound internal and external gender diversity reporting may contribute positively to stakeholder needs and firm reputation.

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