

**Self-determined voluntary gender targets:
an analysis of target ambition, follow-through,
and employee perceptions**

Schriftliche Promotionsleistung

zur Erlangung des akademischen Grades

Doctor rerum politicarum

vorgelegt und angenommen

an der Fakultät für Wirtschaftswissenschaft

der Otto-von-Guericke-Universität Magdeburg

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Geburtsdatum und -ort: 02.10.1990, Dresden

Arbeit eingereicht am: 25.02.2022

Gutachter der schriftlichen Promotionsleistung:

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Datum der Disputation: 27.06.2022

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AoM	Academy of Management
DV	Dependent variable
e.g.	Exempli gratia (=for example)
et al.	Et alii (and others)
etc.	Et cetera (and so on)
i.e.	Id est (that is)
IV	Independent variable
MV	Moderator variable
p	P-value (probability of a type 1 error)
p.	Page
SMA	Southern Management Association

PART A: Introduction

1. Topic motivation

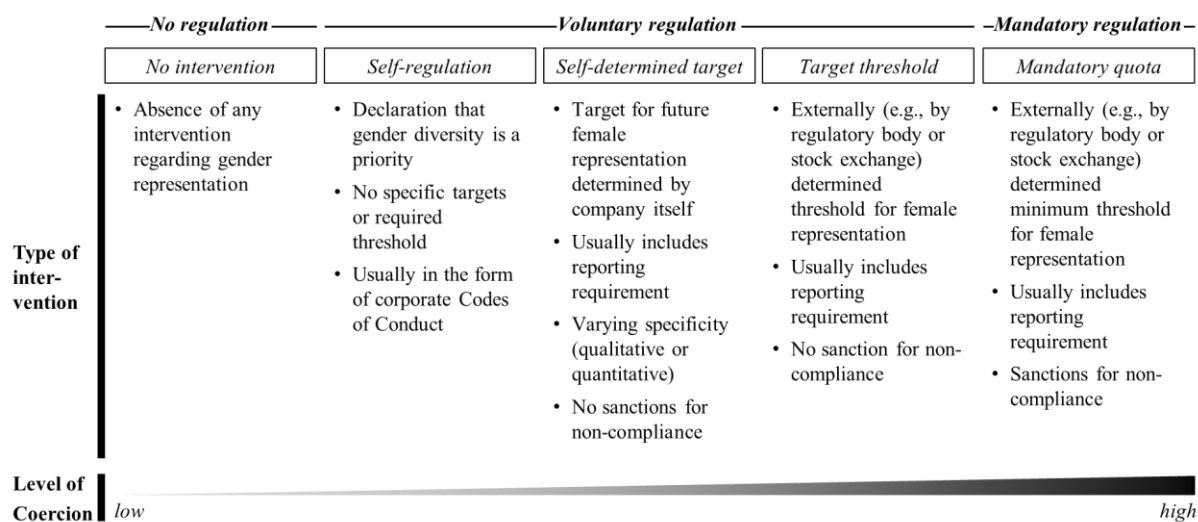
1.1. Topic relevance

Gender diversity is increasingly important to organizations for ethical and instrumental reasons (Sharp et al. 2011; Brammer et al. 2009; Chanland and Murphy 2017). For example, female representation has been positively associated with performance from an innovation, financial and CSR point of view (Bear et al. 2010; Hoobler et al. 2016; Miller and del Carmen Triana 2009). However, there is a lack in female representation in positions of power across the corporate world. Among the largest, most visible companies globally, only 20% of board directors were women in 2020. At the same time, fewer than one in ten female board members hold the position of board chair or CEO in the EU in the same year (Catalyst 2021). Furthermore, appointments of women have often been decoupled from the broader purpose of creating structural gender equality. Women are regularly hired or promoted into teams as the sole representative of their gender as so-called token appointments (Chang et al. 2019; Dezső et al. 2016; Kanter 1977; You 2019).

Many countries have reacted by introducing demand-side regulation to address the lack in gender diversity (Terjesen et al. 2014; Terjesen and Sealy 2016). Examples include the pioneering 40% mandatory quota for female board representation passed by the Norwegian government in 2003 as well as the Spanish voluntary target threshold of 40% passed in 2007 (Terjesen and Sealy 2016; Mateos de Cabo et al. 2019). Overall, regulation spans from mere codes of conduct to voluntary targets to mandatory quotas (Mensi-Klarbach and Seierstad

2020; Sojo et al. 2016). *Figure 1* shows a taxonomy of regulatory designs along their levels of coercion.

Figure 1: Taxonomy of demand-side gender regulation design



Source: Own representation based on literature review¹

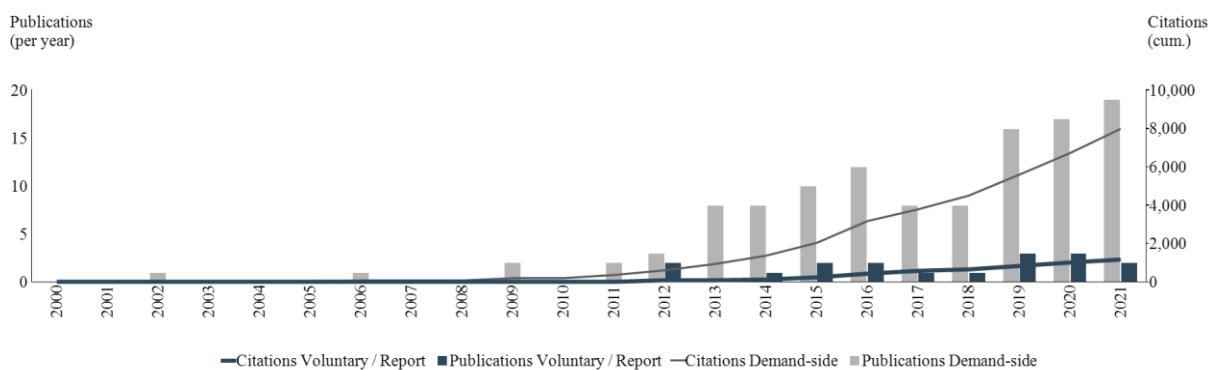
Among regulatory designs, mandatory quotas lead to the highest representation results given their elevated level of coercion (Sojo et al. 2016; Casey et al. 2011; Gregorič et al. 2015; Seierstad et al. 2020). More than 70% of the largest global firms subject to mandatory gender quotas reach 30% female board representation compared to a mere 20% of those that do not fall under any quota regime (MSCI 2019). However, mandatory regimes have downsides. Firms often focus on compliance with diversity requirements e.g., through token appointments, while neglecting the broader structural shift towards a culture of gender equality (Terjesen and Sealy 2016; Klettner et al. 2014). This in turn can lead to negative firm-level outcomes such as perceptions of unfairness among employees (Knippen et al. 2019; Zehnter and Kirchler 2020; Seierstad and Opsahl 2011; Rebérioux and Roudaut 2019). In contrast, voluntary targets may drive more sustainable change towards gender equality than quotas and can therefore help

¹ Relevant papers include: Mensi-Klarbach and Seierstad 2020; Klettner et al. 2014; Terjesen et al. 2014; Arndt and Wrohlich 2019.

support a broader structural change (Klettner et al. 2014). Targets are especially effective if they are self-determined since firms can draft their own agenda and assume ownership for fulfillment (Locke and Latham 2002).

Overall, voluntary measures carry theoretical potential to drive greater levels of corporate gender equality, however they remain under-researched, especially when it comes to self-determined targets. The lack of research on voluntary measures becomes visible when analyzing publications on demand-side gender interventions over the past decade. I depict the number of studies on mandatory versus voluntary measures from 2000 to 2021 in *Figure 2*.

Figure 2: Cumulative publications and citations on gender interventions



Source: Own representation based on Web of Science²

While self-determined targets are a promising tool to tackle gender inequality, most studies on voluntary gender regulation to-date focus on target thresholds recommended by government institutions. Externally imposed targets, however, create less information exchange and result in lower overall commitment to pursue goals than self-determined regulation (Locke and Latham 2002). Since the spirit of voluntary measures is to empower firms to devise their own agenda to engage in a cultural shift towards a gender equitable environment (Terjesen and

² Including all publications in the Social Sciences Index (SSCI); Keywords included: (gender AND quota AND board AND (voluntary OR target OR reporting requirement)), (gender AND quota AND board); Abstracts of results were manually screened for topic fit

Sealy 2016; Klettner et al. 2014), I argue that the study of self-determined targets is highly relevant. By creating an understanding of how firms use self-determined targets and how these affect organizations, policy can be designed more effectively, and firms can make more informed decisions on their diversity management.

There is no comprehensive model on the antecedents of firms' target setting and as such, no clear empirical foundation for understanding the conditions under which targets are fulfilled and subsequent firm level outcomes such as employees' perception of equality. This dissertation attempts to provide a first step towards creating such a holistic and empirically backed model towards a better understanding of self-determined gender targets.

1.2. Research gaps and derived questions

In the following, I summarize research deficits through a brief review of existing research. A more extensive literature review can be found in Part B of this dissertation.

Self-determined voluntary targets differ from voluntary targets with a *target threshold* since they do not provide a required or recommended reference value for minimum female representation. Research has focused on voluntary targets with government recommended target thresholds such as the Spanish and the Dutch cases (de Anca and Gabaldon 2013; Mateos de Cabo et al. 2019; Luckerath-Rovers 2015). Consequently, little is known about self-determined voluntary targets although they have seen increasing relevance in countries such as Australia (Klettner 2016; Klettner et al. 2014) and Germany. In the following, I derive three research questions that will help create a comprehensive understanding of self-determined gender targets.

Antecedents of self-determined target setting

In their seminal work on goal setting theory Locke and Latham posit that targets are especially effective if they are ambitious (Locke and Latham 2002; Latham and Locke 1975; Locke and Latham 2006; Mensi-Klarbach et al. 2019). Applying this logic to firm targets for female board representation, targets should be ambitious in order to affect change. However, whether firms choose ambitious target levels is entirely self-determined and regulation does not provide reference values, presenting a clear gap in existing research. Klettner et al. (2014) address this research gap in one of the few studies on self-determined targets. Understanding firms' target setting behavior in the context of their existing female board representation is a sensible starting point for a comprehensive model on self-determined targets. For *Paper I*, I therefore propose the research question: *“Under what circumstances do firms set ambitious gender targets for their boards in the absence of a recommended minimum target threshold?”*.

Firm actions after self-determined target setting

From a signaling theory perspective, self-determined female targets are signals sent by firms on their intent to attract and retain female talent in the future (Connelly et al. 2011). Such intent signals can lead to fulfillment of the stated ambition, however, they may also be misleading or decoupled from the original ambition (Heil and Robertson 1991; Bromley and Powell 2012). While there are studies on firms' compliance with mandated or recommended thresholds for female representation (Wang and Kelan 2013; Rebérioux and Roudaut 2019; Luckerath-Rovers 2015), it remains unclear whether firms that can determine their own targets will actually increase gender diversity if they announce ambitions to do so. Furthermore, the ability of a firm to follow through with its announced target ambition depends on its implementation capacity as a boundary condition (Bromley and Powell 2012). However, these boundary conditions also present a research gap. I argue that implementation capacity may, among others, be determined

by firms' financial resources as attracting qualified women and establishing diversity management structures to retain diverse talent long-term is costly (Cole 2012; Lim and Tsutsui 2011; Dietz et al. 2019). Taking together both aspects of the research gap, *Paper II* analyzes the following research questions: *“Do ambitious gender targets for corporate boards lead to subsequent diversity increases and is this relationship dependent on a firm's financial implementation capacity?”*

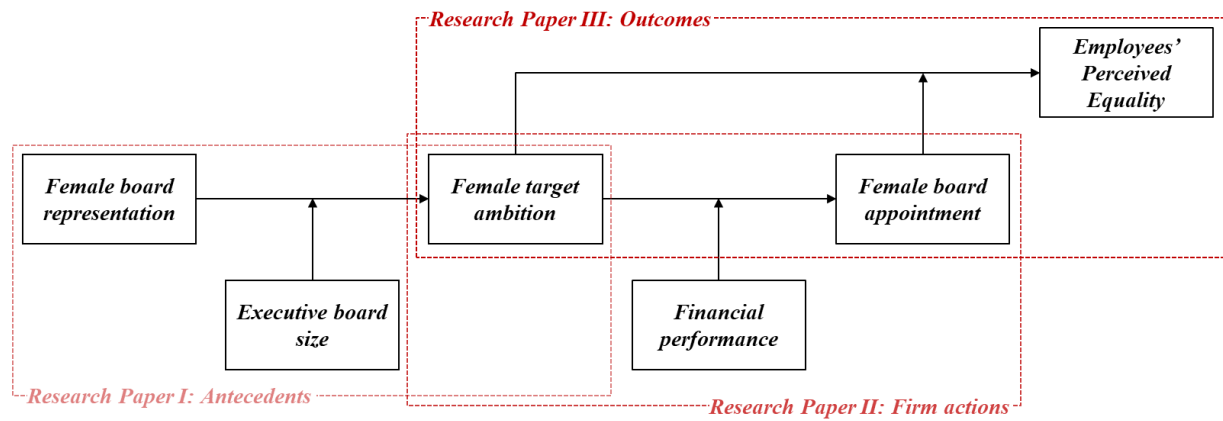
Perceived equality outcomes of self-determined target setting

Similar to the well-researched “business case” for gender diversity (Hoobler et al. 2016), financial outcomes of mandatory quotas and voluntary regimes have been researched with mixed results (Dale-Olsen et al. 2013; Ahern and Dittmar 2012; Labelle et al. 2015). Researchers increasingly call for a more differentiated view on the impact of female presence in firm leadership and regulatory interventions beyond performance measures (Hillman 2014; Hoobler et al. 2016). For example, equality implications remain under-researched (Seierstad et al. 2020; Kirsch 2017). It remains unclear whether interventions such as targets have an impact on employees' perceived equality e.g., based on reverse discrimination. Furthermore, research does not yet tell whether perceptions of equality maybe tied to female appointments after target setting. Given these research gaps I propose the following research question for *Paper III*: *“Do firms' gender targets for their boards and subsequent female board appointments affect employees' perception of equality?”*

2. Paper summaries

This chapter summarizes the three research papers which analyze the research questions described in the previous chapter. All three research papers are provided in full length in Part B of this dissertation. *Figure 3* depicts the overall research model combining all three papers.

Figure 3: Overall research model covered in papers



Source: Own representation

2.1. Paper I: Antecedents of self-determined target setting

Self-determined voluntary gender targets are purported to support a shift towards structural diversity (Klettner et al. 2014; Locke and Latham 2002). Following goal setting theory, targets need to be ambitious to enable a meaningful shift towards higher female representation (Mensi-Klarbach et al. 2019; Locke and Latham 2002). I therefore analyze the ambitiousness of firms' self-determined target levels depending on its context, measured by the relative and absolute levels of female representation at the point in time of target setting.

For statistical testing, I deploy the case of the German self-determined gender target based on 498 firm-year observations from 2015 and 2017. I construct fractional response regression and logistic regression models to measure how female representation influences firm targets.

Results show that firms that already have a woman on their boards are unlikely to set ambitious targets unless their board is large enough to make the lack in women visible. This threshold lies at less than a one in four representation of female directors. Overall, self-determined targets do not push firms beyond tokenistic representation. My results make a case for target designs that include minimum thresholds as reference values as well as supplementary requirements to increase the supply of qualified women such as mentoring schemes, trainings and hired diversity professionals.

Research Paper I provides a first empirical study on self-determined gender targets in a field that has largely focused on mandatory quotas and voluntary targets with a reference threshold. I open the floor for the discussion on effective policy design. From a theoretical perspective, I expand institutional theory and impression management by adding a perspective on self-determined gender targets.

2.2. Paper II: Firm actions after self-determined target setting

Self-determined gender targets constitute announcements of potential future actions that firms may or may not implement (Heil and Robertson 1991). Firms' ability to fulfill their stated ambitions depends, among other aspects, on their implementation capacity (Cole 2012; Bromley and Powell 2012; Lim and Tsutsui 2011) which is linked to financial performance as the attraction and retention of diverse talent is costly (Christensen et al. 2013; Dietz et al. 2019; Westphal and Zajac 1994). I analyze whether firms appoint female board members after setting ambitious gender targets and whether financial performance moderates this relationship.

Hypotheses are based on signaling theory (Connelly et al. 2011; Heil and Robertson 1991) and work on aspirational talk and decoupling from CSR literature (Bromley and Powell 2012; Winkler et al. 2019; Christensen et al. 2013). To test theorizing, 1056 firm-year observations of German firms from 2015 to 2018 are analyzed through a GEE population average model.

Findings show that firms with ambitious targets have a higher likelihood to appoint female directors over the one and two-year horizon than firms with unambitious targets. Profitable firms with ambitious targets are especially likely to appoint women into their boards. While results confirm the effect of ambitious targets, overall female representation in the sample does not increase substantially due to a low share of firms that set ambitious targets in the first place.

Research Paper II contributes to theory by detailing the hitherto underappreciated concept of intent signals and expanding it to the field of gender diversity. I provide important insights for policy design by showing that self-determined targets are not effective if firms lack ambition or financial resources to attract qualified women and implement diversity management

structures. Policy makers should consider incentives for firms to set higher target ambitions and to supplement these ambitions with investments in diversity structures.

2.3. Paper III: Equality outcomes of self-determined target setting

While gender equality is deemed necessary across genders, gender interventions such as quotas are often seen as unfair based on perceptions of reverse discrimination (van den Brink and Stobbe 2013). In the case of self-determined targets, perceptions of equality among employees need to be assessed for both the target itself as well as for subsequent firm actions. I therefore analyze whether targets are associated with employees' perceptions of equality and whether the occurrence of female appointments following target setting moderates the relationship.

My hypotheses are derived from signaling theory as well as existing research on perceptions of equality among employees. I draw upon a unique dataset of 38,460 employee reviews recorded from 2016 to 2020 for 68 German firms with 340 firm-year observations. Statistical testing is based on a GEE population averaged model.

Results show that targets by themselves are not associated with perceived equality among employees. However, if ambitions exceed approximately 20% target representation and are followed by a female appointment, they are positively associated with perceived equality. Meanwhile, actual female representation is always positively associated with perceived equality. This shows that targets can help firms make some initial gains in perceived equality by doubling down on targets and subsequent appointments. In the long run, maintaining structural board gender diversity ensures sustained positive perceived equality.

Overall, *Research Paper III* contributes to a more differentiated empirical picture of the outcomes of gender interventions and expands signaling theory by theorizing on the difference between intent signals and quality signals. Furthermore, I introduce a promising new data source to the study of gender equality, namely employee reviews.

3. Implications

3.1. Theory and methodology

This dissertation makes several theoretical and methodological contributions. Firstly, I add rigor to the concept of signaling of intent as opposed to quality signaling by applying existing research on aspirational talk and decoupling to signaling theory. This allows for applications of signaling theory in the area of self-determined target setting, which is not only relevant for research on gender diversity but also for the wider CSR realm. Furthermore, the concepts of aspirational talk and decoupling are newly applied to the field of gender interventions. Amid noise and impression management by firms, this perspective helps evaluate firm behavior around diversity management. Readers of this study learn that while gender ambitions stated by firms are mostly truthful, they often converge at tokenistic levels of female representation if targets are self-determined without a relative or absolute minimum requirement forcing substantial female representation.

Secondly, I add the missing puzzle piece of self-determined targets to the existing taxonomy of researched gender interventions. I give a comprehensive empirical assessment of antecedents of target setting, target implementation as well as equality outcomes which can inform the discussion on adequate policy design. My results challenge existing assumptions on the effectiveness of voluntary measures in fostering gender diversity while they confirm the existence of implicit quotas derived from institutional theory and the effectiveness of ambitious targets assumed in goal-setting theory.

Lastly, I answer calls for a more differentiated understanding of firm-level outcomes of gender interventions beyond the so-called “business case” by analyzing the perceived equality of such interventions among employees. This enables a theoretical discussion of outcomes on multiple

dimensions and from the perspective of employees as important stakeholders. Apart from the theoretical aspect, I pioneer a new data source, namely employee reviews, which represents a promising new opportunity for the field. Reviews allow for the measurement of first-hand employee perceptions over time across a large sample of organizations. As such they enable the measurement of comparatively hard to observe performance indicators and may prove tremendously valuable for future studies on any form of diversity intervention and the wider CSR realm.

3.2. Future research

Future research can build on the results of this dissertation and address some of its limitations. Firstly, research would benefit from a more thorough understanding of how decisions on targets are made to further detail findings from *Research Paper I*. Such studies may include the assessment of pressure exerted by specific stakeholders such as investors, workers councils, suppliers or clients. This can be done through mixed-method study design e.g., by observing board meetings or analyzing board meeting notes and would enable a better understanding of why firms do not set ambitions beyond female token representation. Regulators could use this knowledge to create focused incentives for firms to double down on gender diversity, while research can further assess the extent to which reasons for lack in ambition outweigh the benefits of gender diverse boards such as increased innovative ability, CSR and financial performance.

From the perspective of target follow-through analyzed in *Research Paper II*, types of appointments following ambitious target setting should be researched further to understand implications on board composition and overall quality of firm governments. This can include the perspective of intersectionality of diversity dimensions, but also the education and

experience of boards. This avenue of future research would be insightful for firms' future hiring decisions after target setting.

Furthermore, more needs to be known about internal structures that facilitate the sustainable fulfillment of self-determined targets analyzed in *Research Paper II* such as female mentorship, diversity trainings or formal diversity groups within firms. This would then further inform the discussion on effective policy design and firms' resource allocation regarding diversity structures.

Lastly, I propose a study of various cultural contexts. While my data only allowed for the analysis of the German case, I believe that the cultural context may affect how firms set and fulfill targets as well as employees' perceptions of their fairness. This is especially relevant in increasingly international markets where firms may consider requiring their suppliers or own subsidiaries to fulfill certain targets as potential CSR measures.

3.3. Practice

From a practical perspective, I provide insights relevant for policy designers. Specifically, I show that gender diversity interventions need thresholds as reference points to avoid falling prey to the trap of tokenism. This is new, as existing policies that require self-determined targets hardly provide reference thresholds and hence lose some of their potential to support a cultural change. Furthermore, I open the discussion on supplementary measures ensuring that interventions do not only create a demand for qualified women, but also support female career building. For several groups of stakeholders including investors and prospective hires, I contribute insights into how to interpret self-determined targets and whether they are truthful. Lastly, I show that doubling down on targets and subsequent appointments is associated with

higher perceived equality among employees. This is an important finding for firms looking to improve employee satisfaction and job performance and ultimately their own reputation.

4. Conclusion

This research project aimed to create a comprehensive understanding of self-determined voluntary gender targets. I conclude by pointing out five specific take aways.

Firstly, self-determined targets help increase the share of boards with female members but do not seem to move overall female representation beyond token level in the short run. Target setting leads to similar mimetic firm behavior as would be expected in the absence of any gender regulation, albeit at an expedited speed. The absence of a minimum threshold leads to a lack in ambition to add women among firms that already have a female board member unless female underrepresentation is obvious if boards have a large number of members and are therefore visibly homogenous despite the existence of one female member.

This finding is supported by my second point: Firms mostly engage in truthful target setting and do not attempt to deceive outsiders with overly ambitious targets. While firms seem to not engage in diversity management “short termism” by making false statements about their ambition, they are not shy to admit their lack of ambition. Although firms without women on their board are more likely to set and fulfill ambitious targets to maintain legitimacy, most firms use targets to justify their current (under)representation, but not to aspire to higher female shares.

My third point relates to the ability of firms to implement diversity structures. I show that more profitable firms are more likely to appoint women once they have set ambitious targets. Clearly, attracting and retaining women requires resources e.g., for recruitment and to build out formal structures for female career development. However, my findings also imply that less profitable

firms may not understand or believe in the utility of gender diversity although past research shows that meaningful female representation would likely positively affect their bottom-line.

A fourth take away of my work points to another outcome of gender diversity, namely employees' equality perceptions. Firms with higher female board representation can expect positive perceptions of equality among employees. Even firms with a poor track record of female representation can improve equality perceptions by doubling down on targets above 20% female executive board representation and subsequent female appointments.

Finally, considering all learnings from my research project, I argue that self-determined targets make the issue of gender diversity more salient and commit firms to specific timelines to address board gender diversity. However, to move female representation beyond token level, higher ambitions and more investment into supply side measures are necessary. If redesigned to incentivize both, self-determined targets could instill a cultural shift towards more gender equitable organizations while avoiding the pitfalls of regulation with higher degrees of coercion such as mandatory quotas.

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PART B: Individual Papers

Literature Review – *Pushing with(out) consequences – a literature review on mandatory and voluntary gender interventions.*

Paper I – *“We aim to have at least one woman on our board” – do self-determined gender targets reinforce tokenism?*

Paper II – *Meaningful signals or cheap talk – do firms appoint women after committing to increases in female board representation?*

Paper III – *More diversity, better equality – do self-determined gender targets affect perceptions of equality within firms?*

Literature Review

Pushing with(out) consequences – a literature review on mandatory and voluntary gender interventions.

Abstract

Corporate gender diversity has seen increasing relevance in academic literature over the last 20 years. A persistent gender gap, especially in top management positions, has been fueling an ongoing debate on demand-side measures to foster gender diversity. I conduct a semi-structured analysis of literature on demand-side measures and show that while mandatory quotas have received substantial attention from researchers, voluntary measures especially those that are self-determined by firms remain under-researched. I summarize relevant theoretical perspectives on demand-side interventions and corroborate insights from existing studies. Based on my findings, I derive and discuss avenues for future research to advance the field. Finally, I introduce the self-determined voluntary target enacted in Germany as a potential natural experiment to fill existing research gaps.

Keywords: *Board gender diversity, mandatory quotas, voluntary targets, demand-side interventions, gender regulation*

1. Introduction

Public pressure on firms across the globe to increase female representation, not only on corporate boards of directors but also on lower organizational levels has been growing over the past years. In Germany, the departure of SAP Co-CEO Jennifer Morgan who had served as the first and only female Dax30 CEO for six months in 2019/20 fueled the public debate on corporate board gender diversity. Coincidentally, Morgan's exit happened only shortly before the 5th anniversary of the passing of the 'FüPoG'³ law (Bundesanzeiger 2015), a regulation that requires publicly traded firms like SAP to set targets for their executive board female representation. Amid low levels of female representation in the upper echelons, Germany is only one example of many countries whose governments attempt to force improvements in

³ 'FüPoG' is short for 'Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst' – The law for equal participation of women and men in leadership positions in the private sector and in public services.

gender diversity through demand-side interventions such as mandatory quotas or voluntary targets.

While public scrutiny regarding gender diversity is high, the legislative environment concerning gender equality across management levels in organizations varies widely in shape and form (Terjesen et al. 2014). Numerous countries such as the pioneering example of Norway (Gregorič et al. 2015; Kogut et al. 2014; Wang and Kelan 2013) employ mandatory quotas that include sanctions for noncompliant firms to increase the share of women on boards of directors. Other countries rely on voluntary targets without sanctions to drive female representation. Besides the dichotomy of mandatory and voluntary measures, country-level measures include further individual design facets such as reporting requirements or individual self-determined targets for firms (Mensi-Klarbach and Seierstad 2020).

Following legislative activity across countries, research has produced multiple studies on outcomes of specific designs of demand-side gender interventions such as mandatory quotas (Sojo et al. 2016; Casey et al. 2011; Labelle et al. 2015). While there are different theoretical frameworks that categorize demand-side gender interventions in various ways such as Mensi-Klarbach and Seierstad (2020), there is no summary of existing studies on “real world applications” of gender interventions (Hillman 2014; Gabaldon et al. 2016). Despite the plurality of case studies, there are no existing comprehensive overviews of past work based on regulatory design features, resulting firm responses and their respective outcomes.

It is important to provide such an overview to understand effects and potential pitfalls of different demand-side gender interventions. This will enable overarching conclusions on regulatory designs. Furthermore, research gaps within existing knowledge on gender

interventions will become obvious and a focused future agenda can be devised accordingly. Theory building will benefit from a focused research agenda to inform the longstanding debate on adequate regulatory designs to foster gender diversity in different settings.

With this literature review, I aim to organize demand-side interventions and their associated firm responses as well as resulting outcomes. I focus on voluntary and mandatory interventions, but also point out design nuances between these two archetypes to create a taxonomy of demand-side measures. I start off by introducing theoretical perspectives on firm motivations to foster board gender diversity in general and in the presence of demand-side gender interventions specifically. Next, I summarize existing studies for both voluntary and mandatory interventions. Based on my findings, I identify research gaps and propose three specific topics for the future research agenda. I base my analyses on 81 relevant publications that were identified in a semi-structured literature review.

The results will help create a comprehensive view on gender interventions and furthermore drive the future research agenda to have a more comprehensive and differentiated view on the design and outcomes of demand-side intervention. For practitioners, I inform the choices of regulatory designs and their effects so that general pitfalls and shortcomings of demand-side interventions such as the tokenistic selection of board members or other forms of decoupling can be avoided. For corporate managers, my results will allow for a better understanding of the implications of their reactions to gender interventions.

The paper is structured along the following three steps: firstly, I introduce the reviewing methodology. Secondly, I present my summary of relevant theoretical perspectives and

literature along the different types of interventions. Lastly, I derive and discuss research gaps and present the case study of the German self-determined target.

2. Methodology

To assess the existing literature landscape on corporate gender interventions, I apply a combination of systematic and integrative literature review strategies. This helps ensure a rigorous scientific process (Tranfield et al. 2003) while allowing for the exploration of interconnections to relevant studies from adjacent fields (Baumeister and Leary 1997). The large number of existing studies on gender interventions (Terjesen and Sealy 2016; Wang and Kelan 2013; Casey et al. 2011) warrants a systematic methodological approach. For literature on corporate gender interventions, an integration of wider management theory is especially relevant (Terjesen et al. 2014). Thus, I enrich the relevant literature identified in the structural approach with constructs from the field of CSR.

To identify relevant literature firstly, I conducted a top-down keyword-based literature search through the *Web of Science* based on 12 different relevant search terms such as *gender quota*, *gender target and board gender signaling*. Please see a full list of keywords used in the Appendix. Focusing on the Social Sciences Index (SSCI), I narrowed down results to the relevant research fields.

In a second bottom-up step, I scanned all issues of the most relevant journals published between 2000 and 2020 article by article to identify additional papers. I chose papers based on topic relevance and research quality measured as SJR impact factor. The following journals are included in the study: *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Business Ethics Quarterly*, *Journal of Applied Psychology*, *Journal of Management*, *Leadership Quarterly*, *Human Resource Management Journal* and *Journal of Organizational Behavior*.

Subsequently, I combined both steps and deleted duplicates, thereby reaching 2,041 papers, which I then filtered by SJR Impact Factor with a cut-off at 1.2 to focus on 1,032 substantial publications. The average SJR Impact Factor of all journals in the longlist is 1.9 and a cut-off at 1.2 allowed for a focus on 80% of the total citations published in the 375 highest-quality journals relevant to my topic.

In a next step, titles were scanned to erase literature items which were clearly unrelated, most of which came from the field of medicine. This step reduced the number of papers to 465 as a longlist for abstract screening based on a catalogue of exclusion criteria such as CSR literature without focus on diversity. This step reduced the shortlist to 72 papers.

The third main step of the review comprised a snowball research. I identified relevant snowball references by scanning the bibliographies of all shortlisted articles. Since bibliographies only point to past research, I also conducted the snowball research into the other direction by scanning papers that cite my shortlisted articles. This three-step literature analysis lead to a final number of 81 papers for subsequent construct identification.

3. Theoretical lenses on gender diversity and demand-side interventions

In the following, I summarize relevant theoretical perspectives that past work researching motivations behind the promotion of board gender diversity both in the absence and in the presence of demand-side interventions is based on. I argue that firm actions in the face of demand-side interventions and their outcomes can only be understood in relation to the baseline scenario where firms do not face any gender regulation. Therefore, I first shed light on general theoretical assumptions behind board gender diversity irrespective of regulatory intervention and then move on to expand these to the context of demand-side intervention.

3.1. Gender diversity in the absence of demand-side interventions

At the firm-level, research on board gender diversity derives many of its assumptions from *institutional theory* (North 1992) and *resource dependence theory* (Pfeffer and Salancik 1978). The need for female board representation is based on firms' dependence on external resources which are only accessible for legitimate firms (Pfeffer and Salancik 1978; Meyer and Rowan 1977). Legitimacy regarding gender diversity can be obtained by abiding by the societal expectations of equal treatment of genders (Hillman et al. 2007; Chang et al. 2017; Dezsó et al. 2016; Miller and del Carmen Triana 2009). Therefore, corporate boards as especially visible representatives of a firm can earn it legitimacy by reflecting a gender diverse composition (Brammer et al. 2009; Hillman 2014; Hillman et al. 2007). Furthermore, firms are considered legitimate if they fulfill performance expectations. There is an abundance of studies outlining utility arguments for female representation including positive associations between gender diversity and financial performance, CSR performance, firm reputation, equal pay and risk management (Hoobler et al. 2016; Bear et al. 2010; Landry et al. 2016; Cook et al. 2018).

In the absence of demand-side interventions, institutional pressures lead to a convergence of firms at presumably acceptable levels of female representation, the so-called “*implicit quota*” This implicit quota leads to an overabundance of firms that feature exactly one woman in an attempt to avoid scrutiny for all-male boards (Guldiken et al. 2019; Dezső et al. 2016). This implicit quota may move over time based on the overall scrutiny firms face (Chang et al. 2017). However, in the absence of demand-side intervention, the implicit quota is unlikely to lead to a critical mass of female representation of three board members or one third of the board (You 2019; Kanter 1977).

Overall, firm motivations to foster female representation can be derived based on firms’ needs for external resources and legitimacy in order to survive in the long-term (Hillman et al. 2007). A similar theoretical framing is provided by *signaling theory* (Spence 1973). Applications of this theory in gender literature posit that stakeholders perceive female representation, especially in the upper echelons, as a signal for a firm’s genuine efforts and ability to promote and retain gender diversity (Connelly et al. 2011). This in turn allows firms to obtain legitimacy and ultimately a positive reputation (Bear et al. 2010; Miller and del Carmen Triana 2009). Firms that do not have the structures to maintain gender diversity shy away from the cost to hire a woman into their upper echelons and hence do not signal diverse gender representation.

From the institutional, resource dependence and signaling theory perspective, firms face a cost-benefit consideration between investments in gender diversity and legitimacy outcomes. The distribution of cost and benefits may be altered through the introduction of demand-side measures that raise the bar on legitimate female representation and introduce additional cost such as financial sanctions and reputational damage.

3.2. Demand-side measures to increase gender diversity

In the face of demand-side regulation including mandatory quotas and voluntary targets, theoretical accounts on board gender diversity are expanded. Firstly, from an *institutional standpoint*, demand-side regulation presents a formal institution in addition to the informal societal pressure to foster gender equality that firms adhere to in order to obtain legitimacy in the first place (Terjesen et al. 2014; Miller and del Carmen Triana 2009). Increasing institutional pressures make gender a more salient characteristic of boards (Terjesen and Sealy 2016) and move the reference point for legitimate gender representation beyond implicit quotas. This increases the reputational and, in the case of mandatory quotas, financial damage considered by firms when deciding whether to invest in increases or the maintenance of upper echelon gender diversity.

Secondly, from a *signaling theory* perspective firms can differentiate themselves by sending credible signals on their quality of attracting and retaining qualified female talent by appointing women and adhering to quotas or recommended voluntary targets (Miller and del Carmen Triana 2009). Like in the institutional perspective, demand-side gender interventions alter the cost-benefit distribution faced by firms for signaling compliance with societal norms of gender diversity. This alteration comes from the introduction of financial and potentially reputational cost as well as the incremental cost of alleviated legitimate levels of female board representation. Such a change in cost distribution can alter firms' strategic signaling behavior (Spence 1973; Connelly et al. 2011). In the context of gender diversity this means the decision whether to appoint women.

Institutional, resource dependence and signaling theory perspectives explain general firm considerations regarding upper echelon gender diversity in the context of demand-side

intervention. When it comes to specific intervention designs *goal setting theory* (Locke and Latham 2002; Latham and Locke 1975; Locke and Latham 2006) and theorizing on *decoupling* and *aspirational talk* from the wider CSR field (Bromley and Powell 2012; Christensen et al. 2013; Winkler et al. 2019) add valuable insights on potential firm reactions to demand-side interventions and their outcomes.

Goal setting theory points out that more ambitious, specific and time constrained targets may be more effective in promoting female representation (Mensi-Klarbach et al. 2019). Furthermore, targets may be more effective in instilling long-term sustainable change if they are self-determined rather than imposed by external governance (Latham and Locke 1975; Locke and Latham 2002). This is the case since self-determination allows firms to set their individual agenda for diversity increases and also encourages a cultural shift driven by ownership of targets rather than mere compliance with externally imposed requirements (Klettner et al. 2014).

While goal setting theory promotes self-determination of targets, from a CSR lens, self-proclaimed ambitions constitute so-called “*aspirational talk*” which announces future intentions rather than actual behaviors (Christensen et al. 2013). As such they are often associated with “*decoupling*”, a discrepancy between formally announced ambition and practical implementation (Bromley and Powell 2012; Meyer and Rowan 1977). While firms communicate aspirations such as the meeting of targets for female board representation, they may engage in symbolic action or no action at all thereby deceiving outsiders (Bromley and Powell 2012). However, several empirical studies from the wider CSR field show that firms may also use voluntary targets and reporting as a transparency tool to signal quality rather than manipulate stakeholder perceptions (Arena et al. 2014; Mahoney et al. 2013). Even if firms do

not reach their aspirations, social change might result regardless as targets place CSR issues on the top management agenda (Christensen et al. 2013). Hence, even self-determined gender targets that are initially not fulfilled may support progress toward higher female representation.

From the perspective of public visibility, firms apply so-called *impression management* tactics to protect their public image (Bolino et al. 2008; Bozeman and Kacmar 1997; Mohamed et al. 1999). Depending on their actual performance on various issues such as CSR in general or diversity specifically, firms frame their communication in a way that shows adherence to societal norms. For example, if female representation is high, firms use assertive tactics to point out their success in diversity management, while they use acknowledging or defensive messaging to justify their lack of gender diversity if they are visibly homogenous (Windscheid et al. 2016a). It is important that these communications do not constitute so-called “*diversity mixed messaging*”, which describes a divergence between the messaging and the actual observable quality of a firm (Avery and Johnson 2008) as such mixed messaging can compromise a firm’s reputation (Avery and McKay 2006; Windscheid et al. 2016b). For self-determined target-setting this means that targets that deviate from a firm’s female representation or ability to hire women may compromise its image among different stakeholders.

Overall, the theoretical perspectives of goal-setting theory, aspirational talk and decoupling as well as impression management inform research on potential firm actions in the face of voluntary demand-side interventions including such that are self-determined. They therefore supplement the institutional, resource dependence and signaling theory perspective which explain general motivations to uphold gender diverse corporate boards.

In summary, demand-side measures impose cost for low gender diversity on firms through an increase in scrutiny as well as through financial sanctions. Compared to “*implicit quotas*” which firms use as a reference of what is legitimate in the absence of demand-side interventions, demand-side interventions can provide an explicit frame of reference and transparent means of comparison. Mandatory quotas lead to a high degree of formal compliance while voluntary measures may offer higher degrees of freedom for firms to set their own agendas to achieve a cultural shift beyond compliance.

The theoretical perspectives I introduced in this chapter inform studies on female board representation in the face of demand-side intervention. In the following chapter, I will corroborate specific studies on firm reactions and their respective outcomes.

4. Demand-side strategies to increase gender diversity

Increases in female board representation are facilitated by supply and demand-side measures (Gabaldon et al. 2016). The supply-side comprises factors that increase the number of women who are ready and qualified to take on certain jobs at different organizational levels (Sojo et al. 2016). These include examples such as mentoring, developmental assignments (Chanland and Murphy 2017; Lyness and Thompson 2000; Dobbin et al. 2007), networking (Hillman et al. 2007; Kogut et al. 2014; Sojo et al. 2016), family friendliness initiatives (Kossek et al. 2016) and formalized feedback mechanisms upon rejection (Brands and Fernandez-Mateo 2016). The ultimate goal is to overcome female underrepresentation caused by value differences between genders as well as related considerations such as family planning and career decisions (Gabaldon et al. 2016).

Demand-side interventions on the other hand are those that create a demand for women to fill certain roles until gender discrimination is overcome and structural gender equality is reached (Gabaldon et al. 2016). Kogut et al. define structural equality in the context of demand-side measures as a point where “(...) *women have passed a critical mass sufficient to sustain greater numerical equality once the quota is removed (...)*” (2014, p. 892). Demand-side strategies can be imposed by political government or bodies such as industry associations and stock exchanges but can also be measures that firms set as their own internal targets (Terjesen et al. 2014; Terjesen and Sealy 2016).

Interventions broadly include reporting requirements, targets and quotas (Sojo et al. 2016; Labelle et al. 2015) and differ widely in their specific designs (Mensi-Klarbach and Seierstad 2020). Effectiveness of demand-side interventions targeting certain organizational layers is often enhanced by trickle-up and trickle-down effects (Gould et al. 2018; Mun and Jung 2017).

This allows for female representation to transcend organizational layers. Structural equality, however, is only ultimately achievable if firms leverage both supply and demand-side strategies (Klettner 2016; Sojo et al. 2016).

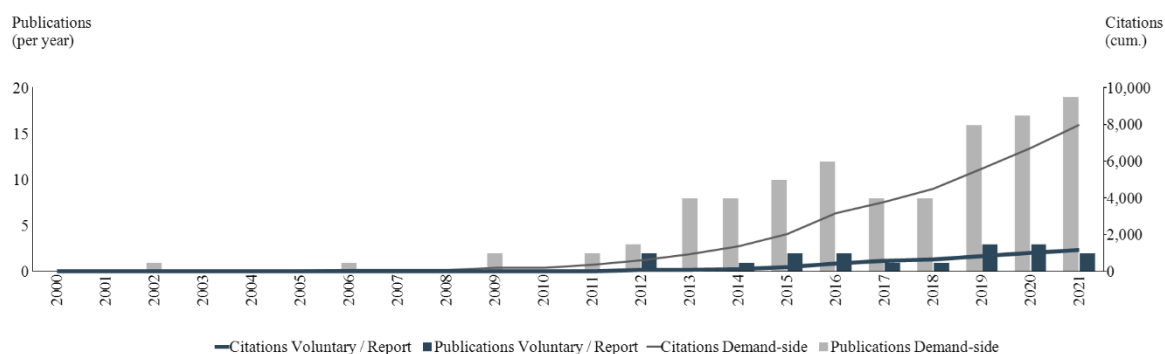
Demand-side interventions are further distinguished based on their design. One broad categorization is the difference between “hard” and “soft” measures (Mateos de Cabo et al. 2019). Hard measures describe mandatory quotas that trigger sanctions if the required representation is not achieved whereas soft measures are not binding and provide a mere recommendation. Therefore, they are often referred to as voluntary measures. Mensi-Klarbach and Seierstad break up the dichotomy of hard versus soft or alternatively mandatory versus voluntary by establishing the concepts of “hardness” (enforcement and precision) and “progressiveness” (year of acceptance, implementation schedule, quota target, requested increase, duration, and scope) (2020).

Our review of the relevant literature shows that mandatory quotas are relatively well-researched while voluntary targets have not received the same attention overall. Voluntary targets hence present a research gap which has started to receive attention in more recent studies (Klettner 2016; Labelle et al. 2015; Mensi-Klarbach and Seierstad 2020; Sojo et al. 2016; Mensi-Klarbach et al. 2019). I trace the number of publications and citations for both mandatory and voluntary measures over time in *Chart 1*.

I argue that the lack of research on voluntary measures compared to mandatory quotas is driven by two aspects. Firstly, mandatory quotas received substantial research attention in the aftermath of the pioneering regulation in Norway in the early 2000s (Wang and Kelan 2013; Ahern and Dittmar 2012; Bohren and Staubo 2016). Secondly, effects of mandatory quotas are

usually more easily measurable and accessible for research than those of voluntary measures since voluntary measures often only involve qualitative or unstandardized requirements as is exemplified in Klettner et al. (2014).

Chart 1: Number of publications and citations on mandatory and voluntary quotas



Source: Own representation based on Web of Science⁴

While regulatory designs explain a significant part of the between-country variance of female representation on corporate boards (Grosvold and Brammer 2011), there is a vivid debate whether mandatory quotas or voluntary measures instill gender equality more effectively over time. The core of the debate is whether demand-side interventions should prescribe or merely suggest outcomes with flexibility on implementation to allow firms to leverage their individual strengths (Klettner 2016). The following section summarizes existing studies on mandatory and voluntary measures as demand-side interventions. I corroborate effects on female appointments and then trace outcomes for both mandatory and voluntary interventions. *Table 1* introduces a summary of designs of demand-side interventions in various countries.

⁴ Including all publications in the Social Sciences Index (SSCI); Keywords included: (gender AND quota AND board AND (voluntary OR target OR reporting requirement)), (gender AND quota AND board); Abstracts of results were manually screened for topic fit

Table 1: Gender quotas in different European countries⁵

<i>Country</i>	<i>Body</i>	<i>Company</i>	<i>Quota</i>	<i>Pass</i>	<i>Sanctions</i>
Norway	Board of Directors	– Listed	40%	2003	– <i>Financial sanctions</i> – <i>Dissolution</i> – <i>Rejection of registration</i>
Spain	Board of Directors	– 250+ employees – €4.11M assets – €22.8M sales	40%	2007	– <i>No sanctions</i> – <i>Preferential consideration for public contracts</i>
Germany	Supervisory / Executive Board	– Listed – Co-determined	30% / target	2015	– <i>Empty chair</i> – <i>Comply-or-explain</i>
Iceland	Supervisory Board	– Listed – 50+ employees	40%	2010	– <i>No sanctions</i>
France	Non-executive directors	– 500+ employees – €50M sales (over 3 years)	40%	2011	– <i>Nullification appointments</i> – <i>Suspension of attendance fees</i>
Italy	Board of Directors	– Listed	30%	2011	– <i>Financial punishment</i> – <i>Nullification appointments</i>
Belgium	Board of Directors	– Listed	33%	2011	– <i>Empty chair</i> – <i>Suspension of attendance fee</i>
Netherlands	Supervisory / Executive Board	– 250+ employees – €20M assets – €40M net sales	30%	2013	– <i>No sanctions</i>
Portugal	Supervisory / Executive Board	– Listed	33%	2017	– <i>Financial punishment</i> – <i>Nullification of mandate</i>
Austria	Supervisory board	– Listed – 1000+ employees	30%	2017	– <i>Empty chair</i>

⁵Corroborated from Arndt and Wrohlich 2019; Luckerath-Rovers 2015; Mateos de Cabo et al. 2019; Mensi-Klarbach and Seierstad 2020; Terjesen et al. 2014

4.1. Mandatory quotas

Mandatory quotas have been widely researched since the first quota was introduced in Norway in 2003 requiring a minimum of 40% representation for men and women on boards of directors (Mateos de Cabo et al. 2019; Wang and Kelan 2013). Research has assessed antecedents of quota introduction by countries (Kirsch 2017; Terjesen and Sealy 2016) as well as firms' reactions to quota regimes and their respective outcomes concerning female representation, board characteristics and financial outcomes (Wang and Kelan 2013; Ahern and Dittmar 2012; Seierstad and Opsahl 2011). For my research interest, firms' strategic responses following quota introduction, specifically appointments, as well as outcomes are especially pertinent. I summarize the relevant research for both below.

Female appointments following the introduction of mandatory quotas

Upon implementation of mandatory quotas, firm actions differ on two dimensions, namely formal and structural compliance. Firstly, formal compliance depends on the specific design of the actual quota and the institutional context including factors such as the level of coercion and existing diversity (Hughes et al. 2017; Mensi-Klarbach and Seierstad 2020). The level of coercion includes aspects such as the targeted representation and sanctions for non-compliance. In countries with harder sanctioning e.g., financial penalties or firm dissolution and an implemented controlling regime, adherence to quotas and hence an increase in female appointments is likely (Gregorič et al. 2015). The cases of Norway, Italy and France with their hard sanctions for non-compliance show an increase in average female representation to the required level of diversity (Hughes et al. 2017; Mensi-Klarbach and Seierstad 2020; Seierstad et al. 2020).

However, the mere increase in average female board representation does not necessarily mean structural compliance. Structural compliance would lead to substantial change in structures leading to a sustained meaningful female representation (Seierstad and Opsahl 2011; Terjesen and Sealy 2016; Kogut et al. 2014). Often, female appointments following quota introduction do not represent substantial change but can be characterized as decoupling activities. Decoupling describes the tendency to adhere to the letter rather than the spirit of the regulation (Mensi-Klarbach et al. 2019; Bromley and Powell 2012). Firms will announce certain measures but implement them in a way that does not serve the originally intended purpose, which is the empowerment of women in the upper echelons of firms. Decoupling within the context of mandatory gender quotas is often expressed in the appointment of relatively powerless female directors.

Firstly, so-called “*golden skirts*” describe the board appointment of female directors that hold an above average number of board mandates. Seierstad and Opsahl find that the average number of board memberships for women increased with the introduction of the quota in Norway (2011). While female representation per firm is increased through the appointment of golden skirts, the numeric representation of women among board directors does not increase. Furthermore, directors with a high number of appointments must divide their attention in a way that may harm overall quality of firm oversight.

Secondly, there is an ongoing discussion whether female appointments after quota introduction lead to increases in overall board size to accommodate additional, relatively powerless women rather than substitute male directors (Knippen et al. 2019). Evidence on such increases in board size is mixed. Several studies are unable to find significant increases in board size following

the introduction of mandatory quotas (Ahern and Dittmar 2012; Hughes et al. 2017; Yang et al. 2019).

Thirdly, research has also shown a quota effect on board independence and director experience. Female appointments following introduction of mandatory quotas lead to an increase in independent or non-executive directors (Ahern and Dittmar 2012; Bohren and Staubo 2016; Rebérioux and Roudaut 2019). Newly appointed female directors usually do not serve in key board positions (Knippen et al. 2019) and hence remain relatively powerless.

When it comes to the experience of appointed women, research shows mixed results with evidence from Norway pointing towards an increase in qualification through the appointment of qualified women (Bertrand et al. 2018; Yang et al. 2019). Ahern and Dittmar posit that the quota led to less overall CEO experience on boards in Norway, however, to an increase in education since newly appointed female members were more likely to have obtained higher education than male directors (2012). Upon full compliance of the quota, the gap in education that existed prior to quota introduction between female and male directors vanishes (Wang and Kelan 2013). Rebérioux and Roudaut find that the French quota led to an increase in appointments of female directors without any prior board experience. However, this increase does not ultimately translate into an overall effect on board experience since newly appointed male board members also usually have low prior experience. “Rookie” women meanwhile have limited access to key decision-making roles compared to “rookie” men (2019).

Taken together, research on female appointments following the imposition of mandatory quotas shows that increases in female representation often lead to the promotion of few women with limited influence rather than substantial representation of women in the upper echelons.

These appointment decisions have measurable consequences for the quality of governance. In the following, I summarize outcomes of mandatory quota introduction on overall female representation, acceptance of female directors and financial performance.

Outcomes of mandatory quotas

Overall mandatory quotas are associated with a high level of technical compliance by firms (Wang and Kelan 2013; Gregorič et al. 2015). Evidence suggests that even the mere threat of the potential imposition of mandatory quotas might be enough to achieve a voluntary increase in female representation (Terjesen and Sealy 2016; Mensi-Klarbach et al. 2019; Huang et al. 2019). Technical female representation beyond a tipping point may enable structural gender equality through productive network development (Kogut et al. 2014). However, to translate female representation into equality the involvement of a wider set of stakeholders and a combination of demand-side as well as supply-side measures is necessary (Mensi-Klarbach and Seierstad 2020; Sojo et al. 2016).

Furthermore, the measurement of overall increases in female board representation may be flawed as firms can opt out of the regulated context altogether as an outcome of mandatory quotas. Norway has seen the delisting of numerous firms to avoid being subject to gender quota requirements (Rebérioux and Roudaut 2019; Sojo et al. 2016; Wang and Kelan 2013; Seierstad et al. 2020; Hillman 2014). Delisting is an extreme example of decoupling as firms are in full formal compliance with the law, however, avoid virtually any levels of substantial change intended by lawmakers. The result of this delisting is that firms with low female representation are not counted and hence overall female representation among regulated firms is artificially increased.

Apart from delisting, the Norwegian quota has also seen increasing discrepancies in female representation between legislated firms and those which were not subject to the quota (Seierstad et al. 2020). This implies that there is little spillover effect between firms following the quota introduction. Seierstad et al. suggest that as a consequence of delisting and a lack in spill-over, the overall number of firms that abide by the quota may be shrinking (2020).

Another outcome of mandatory quota introduction refers to the level of acceptance of female members of the upper echelons. Under certain circumstances mandatory quotas may undermine the legitimacy of subsequent appointments as quotas for women are often perceived as unfair (Terjesen and Sealy 2016), especially among younger members of organizations (Zehnter and Kirchler 2020; Seierstad 2015). For senior female managers, personal sacrifices to achieve career success are predictive of distancing behavior from junior women and opposition to gender quotas for junior levels (Faniko et al. 2017). Consequently, quotas seem to facilitate resentment between employees on several dimensions.

Acceptance of quotas and their outcomes is moderated by the workplace environment and may change over time. In the absence of discrimination against women in the selection process, quotas lead to overall lower effort levels. The reverse is true for organizations where women are actually at a disadvantage (Ip et al. 2020). Over time, exposure to female leaders following quota introduction reduces bias based on gender stereotypes and increase in perceptions of female leadership effectiveness (Beaman et al. 2009; Seierstad 2015). An increased focus on competence and meritocracy following quota introduction, complementary information about qualification of appointees and further supply-side measures can alleviate negative perceptions of mandatory quotas (Gould et al. 2018; Seierstad 2015).

Finally, evidence on financial outcomes of female representation following mandatory quota introduction is mixed. Some studies show a negative relationship between an increase in the representation of female independent directors and firm value (Ahern and Dittmar 2012; Bohren and Staubo 2016; Yang et al. 2019). Market reactions upon quota announcement are more negative the larger the discrepancy between mandated representation and actual board representation for individual firms (Greene et al. 2019). Other studies, however, find that effects on profitability and operating revenues are negligible (Dale-Olsen et al. 2013) and that firm choices after quota introduction are not less profitable than before (Matsa and Miller 2013).

Apart from mixed results on the significance of effects, the causality of the link between quotas and firm performance also remains mostly unclear (Terjesen and Sealy 2016). A frequently mentioned criticism is the inability of studies to control for contextual aspects such as the overall economic situation. Critics demand more longitudinal as well as quasi-experimental research designs to contribute to theory building on outcomes of quota introduction (Hughes et al. 2017; Yang et al. 2019). Overall, financial outcomes are unclear due to methodological and cross-country differences in quota design. This pattern mirrors the mixed results of financial outcomes of female representation in the absence of demand-side (Hoobler et al. 2016).

In summary, mandatory quotas lead to a formal increase in female representation by imposing substantial financial and reputational damage on firms that do not comply. Formal compliance can lead to the appointment of few and relatively powerless female representatives in the upper echelons of a limited set of firms subject to regulation. Increases in representation are therefore not necessarily equivalent to a shift towards gender egalitarian organizations and may

negatively affect the overall quality of governance. These effects may be reflected in further firm-level outcomes such as performance, however, evidence remains equivocal. I list relevant studies on mandatory quotas in *Table 2*.

Negative outcomes of mandatory quotas are often associated with firms' inability to set their own individual agenda. Therefore, more flexible interventions such as voluntary targets are often suggested. In the following I discuss appointment decisions following voluntary measures as well as outcomes.

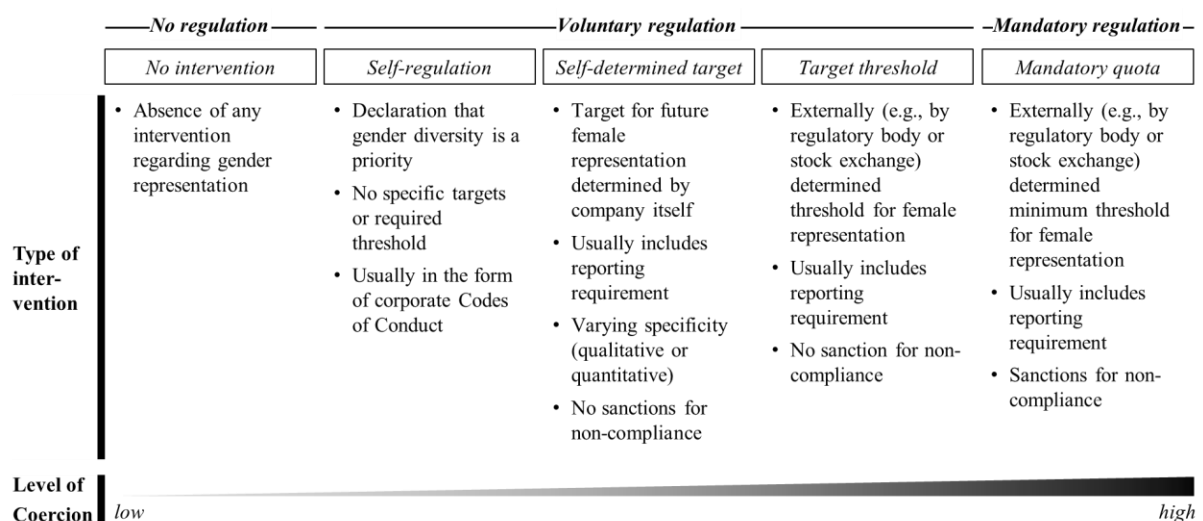
Table 2: Mandatory interventions

Seierstad and Opsahl	2011	<i>Mandatory quotas lead to increases in female representation that are partially driven by the emergence of few women with multiple board appointments, so-called “golden skirts”</i>
Ahern and Dittmar	2012	<i>After the announcement of the Norwegian gender quota, financial performance measured as stock prices and Tobin’s Q declined. The quota led to the appointment of young and inexperienced directors and hence the deterioration of operating performance</i>
Wang and Kelan	2013	<i>The Norwegian gender quota led to an increase in female representation with initial discrepancies in female and male director demographics; these discrepancies vanished over time as quota requirements are fulfilled</i>
Dale-Olsen et al.	2013	<i>The impact of mandatory gender quotas on firm performance measured as RoA, operating revenues and cost is negligible</i>
Matsa and Miller	2013	<i>Gender quotas do not lead to less profitable business decisions overall; regulated firms undertake fewer workforce reductions thereby reducing short-term profits, however long-term outcomes are unclear</i>
Kogut et al.	2014	<i>Modest numerical quotas create structural equality by generating networks of female directors who attain equality in their centrality and influence</i>
Gregorič et al.	2015	<i>Higher levels of coercion of demand-side interventions predict increases in gender diversity, however appointment processes are not transparent; quotas need to be supplemented by policies that ensure the transparency of board changes</i>
Bohren and Staubo	2016	<i>Mandatory gender quotas are associated with increased board independence and reduced firm value</i>
Gould et al.	2018	<i>Female representation at top levels trickles down to lower levels and hence regulatory demand-side interventions may increase gender diversity across organizational layers</i>
Rebérioux and Roudaut	2019	<i>Upon quota introduction in France, women with no prior board experience were predominantly appointed; new female directors have had limited access to key board positions and suffered from a compensation gap</i>
Knippen et al.	2019	<i>External pressure has a positive effect on the increase of female directors on boards; new female directors added through additional board seats are less influential than those added through substitution of male directors</i>
Yang et al.	2019	<i>There is a negative effect of mandated female representation on firm performance and on firm risk</i>
Zehnter and Kirchler	2020	<i>Female quotas can be perceived as counterproductive, derogatory, and unfair, whereas male quotas are perceived as beneficial and fair</i>
Seierstad et al.	2020	<i>Quotas are adopted by firms subject to legislation, however, there is no spill-over effect to firms that are not regulated by quotas</i>

4.2. Voluntary targets

Soft or voluntary measures comprise legal targets for female representation that do not sanction non-compliance (Terjesen et al. 2014; Isidro and Sobral 2014; Mensi-Klarbach and Seierstad 2020). In some jurisdictions, corporate codes of conduct may provide voluntary guidelines on female representation instead of formal voluntary measures (Klettner 2016). Some voluntary measures entail reporting requirements to increase accountability. While reporting requirements do not prescribe ambition levels, they create transparency and exert pressure on firms to increase gender diversity through the ability of social comparison (Sojo et al. 2016; Terjesen and Sealy 2016). Some voluntary regulation includes explicit target thresholds for female representation set by the respective governing bodies while other frameworks require firms to set their own self-determined target threshold. Overall, soft quotas can vary significantly in their design and hence in their level of coercion. In *Chart 2* I provide a taxonomy of demand-side interventions from no interventions to voluntary and ultimately mandatory measures based on the level of coercion as discussed in the last chapter.

Chart 2: Taxonomy demand-side interventions



Own representation based on literature review⁶

⁶ Relevant papers include: Mensi-Klarbach and Seierstad 2020; Klettner et al. 2014; Terjesen et al. 2014; Arndt and Wrohlich 2019.

EU countries that deploy voluntary measures at the point of writing include, among others, Spain, the Netherlands and Germany. Additionally, between 2003 and 2005, the Norwegian gender quota was voluntary without sanctions for non-compliance with the 40% recommendation (Wang and Kelan 2013). While there are no sanctions for not achieving the recommended target of 40% female representation in Spain, firms are incentivized to do so through preferential treatment for government tenders if they meet the target (Mateos de Cabo et al. 2019). Dutch legislation recommends a 30% target administered in a comply-or-explain fashion, but not sanctioned (Luckeath-Rovers 2015; Mensi-Klarbach and Seierstad 2020). The German target for executive boards combines self-determined voluntary targets with a comply-or-explain requirement for reporting.

Female appointments following the introduction of voluntary measures

Like mandatory quotas, research has associated formal compliance with voluntary targets with decoupling activities, namely the appointment of relatively powerless female non-executive directors (de Anca and Gabaldon 2013; Luckeath-Rovers 2015). In addition, the appointment of so-called “*token women*” on corporate boards following the introduction of voluntary measures is likely (Klettner 2016; Terjesen and Sealy 2016). Tokenistic appointments refer to female representation below the minimum meaningful representation of women of at least three women or one third women per board (Kanter 1977; You 2019). Overall, appointments of comparatively young and independent directors as well as token women following the introduction of voluntary measures do little for effective board monitoring or corporate governance (Wang and Kelan 2013).

Outcomes of voluntary measures

While some studies find that under certain conditions voluntary targets lead to increases in formal female representation (Sojo et al. 2016; Mensi-Klarbach et al. 2019), others show that increases are slower and lower in magnitude than those achieved in mandatory regimes (Casey et al. 2011; Luckerath-Rovers 2015; Mateos de Cabo et al. 2019). The mere existence of voluntary measures improves technical female representation more than the implicit quota does in the absence of demand-side regulation. However, mandatory measures still prove more effective in forcing compliance and hence higher representation than voluntary measures.

Reporting requirements can increase the effectiveness of voluntary measures by holding firms accountable for detailed actions taken to foster gender equality (Terjesen and Sealy 2016; Sojo et al. 2016) through higher reputational cost. In addition, legislation that sets actual targets is more effective in increasing female representation than reporting requirements without specific targets given specificity and ambitiousness of targets (Sojo et al. 2016). Furthermore, Graham et al. show that the effectiveness of gender reporting requirements mandated by codes of conduct depends on where the organizational responsibility for the sign-off is located (2016). If responsibility lies within higher levels of the organization, female representation is taken more seriously, and hence voluntary measures are more effective.

Finally, voluntary regimes are relatively more effective in increasing female board representation for firms, which are more dependent on external resources than others. (Mateos de Cabo et al. 2019; Mun and Jung 2017). This reflects higher pressure on these firms to maintain legitimacy to stay eligible for the procurement of external resources.

Regarding financial outcomes, initial evidence shows a positive relationship between female representation and firm performance in countries with voluntary targets compared to those with mandatory quotas (Labelle et al. 2015). This may be based on lower levels of coercion and hence less disruption to firms' governance. However, given the overall scarcity of studies on voluntary measures, replication or refutation of evidence by the broader community of researchers is lacking.

Overall, voluntary measures allow for more firm-specific governance to foster gender diversity than mandatory measures (Klettner 2016). Despite being unbinding, voluntary measures exert normative pressure from stakeholder expectations on corporates (Terjesen et al. 2014). Thus, they may foster structural and sustainable cultural change (Terjesen and Sealy 2016) rather than mere formal compliance and potential decoupling. However, empirical evidence from the studies summarized in the review shows that it takes longer for representation to improve in the absence of sanctions or threats of mandatory quotas (Mensi-Klarbach et al. 2019; Casey et al. 2011). In fact, there is a lack of empirical evidence that the supposed cultural shift towards higher gender equality based on voluntary measures exists. I summarize relevant literature on voluntary interventions in *Table 3*.

Table 3: Voluntary interventions

Casey et al.	2011	<i>Voluntary regimes increase female representation more slowly than mandatory quotas</i>
de Anca and Gabaldon	2013	<i>Most female directors appointed following the introduction of the voluntary target are relatively powerless independent directors since firms attempt to signal diversity, while avoiding the cost of finding an executive female director</i>
Isidro and Sobral	2014	<i>Regulation without sanctioning has no effect on increases in female board representation</i>
Klettner et al.	2014	<i>Voluntary measures for board and executive level may lead to long-term cultural shifts in organizations as they allow firms to own their targets and set an individual agenda</i>
Labelle et al.	2015	<i>Financial performance of firms in countries with voluntary gender regimes is positively associated with gender representation and negatively associated in countries with mandatory quotas</i>
Luckerath-Rovers	2015	<i>The voluntary target in the Netherlands has led to an increase in supervisory board female representation, but not in executive female representation</i>
Sojo et al.	2016	<i>Compared to the absence of any regulation, voluntary targets lead to increases in female representation with higher goals leading to higher female representation</i>
Terjesen and Sealy	2016	<i>Effectiveness of voluntary intervention is dependent on stakeholder pressure and threat of mandatory intervention</i>
Mateos de Cabo et al.	2019	<i>Voluntary targets only lead to an increase in female representation among firms dependent on the award of public contracts while overall compliance with voluntary thresholds is low in the absence of sanctions</i>
Mensi-Klarbach et al.	2019	<i>Voluntary quotas are effective in increasing female representation if they are ambitious and supplemented with the threat of mandatory quotas</i>
Mensi-Klarbach and Seierstad	2020	<i>Designs of gender interventions can be distinguished into hardness (wording precision and level of enforcement) and progressiveness (implementation schedule, ambitiousness etc.)</i>

In summary, research on voluntary measures lags far behind research on mandatory quotas with little insight about strategic rationales to formally comply versus enact substantial change. In the absence of a clear cost distribution for non-compliance versus formal compliance versus substantial change, voluntary regulation does not guarantee any outcomes. For example, firms might assume that reputational sanctions of non-compliance do not apply to their specific business segment while a lack of female leaders in job markets (Terjesen and Sealy 2016) makes hiring female talent expensive. Without financial sanctioning, there may be few incentives to foster female representation.

Furthermore, research on voluntary measures is almost entirely limited to studies of voluntary measures with recommended target thresholds. While these represent a substantial share of existing legislation (see *Table 1*), they may differ in short and long-term effectiveness from self-determined targets as suggested by goal setting theory (Locke and Latham 2002).

5. Discussion of relevant research gaps

This review has shown that while mandatory quotas are relatively well researched, research on voluntary interventions, especially voluntary self-determined targets is still in a nascent stage. I highlight three avenues for research to further a structural understanding of firm responses to voluntary targets including those that are self-determined.

5.1. Research Gap 1: Antecedents of target setting

As pointed out, voluntary targets may give firms more leeway to set their individual agenda to instill a more sustainable cultural change regarding gender equality compared to mandatory quotas. If targets are self-determined rather than government-recommended thresholds, the opportunities for individualization are even more pronounced (Locke and Latham 2002).

However, while self-determined targets come with more freedom to create their own change, they also force little commitment out of firms. Firms may feel free to set unambitious targets that may ultimately lead to no substantial increase in female representation as targets are especially effective if they are ambitious (Mensi-Klarbach et al. 2019; Locke and Latham 2002, 2006). Klettner et al. propose assessing whether firms with more women on their boards set higher ambition levels than other firms (2014) if targets are self-determined. I extend this perspective by arguing that in order to leverage the potential of self-determined targets, it is important to understand what motivates firms to set ambitious targets. Understanding these motivations can help design regulation in a way that sets clear incentives for firms to establish structural gender equality while ruling out any decoupling.

5.2. Research Gap 2: Appointments following self-determined targets

Terjesen and Sealy address strategic responses to regulatory interventions with the aim to create legitimacy with different stakeholder groups as avenue for research (2016). As I pointed out in my review, in the context of voluntary targets and hence in the absence of formal sanctioning firms have a strategic choice to engage in decoupling rather than substantial change such as female appointments and the establishment of supply-side measures to foster female representation. Research needs to assess to what extent self-determined targets remain decoupled from structural actions to promote gender equality.

Furthermore, boundary conditions for strategic firm choices need to be discovered to make demand-side intervention more sound. Bromley and Powell (2012) provide a list of potential drivers of decoupling behavior including lack of implementation capacity. Research has yet to show that voluntary regulation does in fact differ from mandatory quotas in the extent to which it sparks structural change as opposed to the mere decoupling of means and ends over time.

5.3. Research Gap 3: Outcomes of self-determined targets versus actual diversity

Existing research assesses the diversity effects and related outcomes of mandatory quotas and voluntary quotas to a certain extent. However, an assessment of the link between self-determined voluntary commitments and such firm level outcomes is lacking. Mandatory quotas do not allow for firms to signal their ambitions to internal and external stakeholders. In contrast, self-determined voluntary targets such as the Australian Code of Governance or the German gender regulation allow for signaling in two stages: target setting at a point in time t_0 and potential female appointments at a point in time t_1 . Understanding the outcomes of female representation that a firm has aspired to, but not necessarily achieved is an important step towards understanding firms' strategic decisions. It will also inform researchers and

practitioners knowledge whether firms could benefit from cheap talk on gender diversity rather than substantial change.

Furthermore, diversity researchers increasingly call for a more differentiated understanding of different types of outcomes apart from financial performance (Hillman 2014). While financial performance is an important measure of firm success, proposed avenues for future research include an understanding of how female representation can influence gender inequality perceptions in organizations (Hoobler et al. 2016). In the face of the discussion around the fairness and perceived equality of gender diversity interventions such as quotas and targets, I argue that an assessment of equality outcomes such measures is an important research gap.

Outcomes can also be both intended and unintended. Sojo et al. find that intended and unintended outcomes of demand-side strategies including quotas, targets and reporting requirements warrant further attention (2016). Research gaps on unintended outcomes include crowding out effects from increases in female representation to other dimensions of diversity (Gregorič et al. 2015). Intended outcomes on the other hand, include effects of different tactics to increase gender diversity on female representation across hierarchies and reputation (Klettner et al. 2014; Windscheid et al. 2016). Again, filling these research gaps will enable better informed regulation from a government perspective as well as better informed target setting from a firm perspective.

Answering these three overarching questions will expand the understanding of the effectiveness of voluntary and self-determined regulation towards gender egalitarian organizations. While research on gender diversity in general and mandatory quotas as demand-side initiatives to foster diversity analyze actual diversity or the lack thereof, research into

voluntary settings will add a more dynamic perspective. Gender targets may act as a signal and foundation for subsequent strategic choices including but not limited to transitory measures increasing gender diversity on boards.

5.4. Filling the research gaps: The German self-determined target as a natural experiment

Having proposed three areas for the future research agenda, I also provide a potential setting to fill the discovered gaps.

Germany targets supervisory boards “*Aufsichtsrat*”, executive boards “*Vorstand*” as well as the two following management levels with its legal approach to corporate gender equality. In addition to a mandatory representation of at least 30% for men and women on supervisory boards, publicly traded and equally co-determined firms are required to set their own voluntary targets for female representation on the executive board and the following two top management levels. Firms must disclose targets as well as the actual representation in their annual reports. Female representation on supervisory boards of regulated firms has increased from 21.3% to 33.9% between 2015 and 2019 and from 4.9% to 9.6% on executive boards over the same period of time (FidAR 2019). Despite this increase, Germany lags behind international peers especially when it comes to female representation on executive boards (AllBright 2019).

The German voluntary target for female executive board representation provides a natural experiment for some of the above-mentioned research gaps concerning self-determined voluntary gender quotas. The phase-in period, which usually amounts to 3-5 years (Hughes et al. 2017) required German firms to meet their first milestone in the end of 2017. Most firms formulated a second set of ambition levels in 2017. Despite the recency of the introduction of the German gender law with panel data of five years since its launch a study at the current point

in time will be worthwhile to lift research on quotas - especially those designed to be voluntary - out of its current “infancy” (Hughes et al. 2017).

Finally, I point out the contributions of this literature review which are threefold: firstly, I contribute to the structuring of the taxonomy of types of demand-side interventions to foster gender diversity on corporate boards. Secondly, I identify gaps in the coverage of self-determined voluntary targets and thereby pave the avenue for future research. Lastly, I outline relevant theories for the assessment of demand-side interventions and integrate concepts from adjacent CSR research to enrich the hitherto under-researched management perspective on voluntary targets. I introduce the German self-determined gender target as a natural experiment to further my understanding of firms’ strategic responses to external gender legislation.

6. Conclusion

This literature review summarizes relevant work on demand-side interventions to foster corporate gender diversity. I corroborate theoretical perspectives and existing empirical studies on antecedents of gender diversity in the absence and presence of demand-side interventions. I argue that firms converge toward implicit targets based on informal peer-group reference values of gender representation in the absence of demand-side interventions. This process may be lengthy, highly dependent on stakeholder pressure as a driver of appointments and prone to tokenistic appointments. Demand-side interventions can specify the time-horizon for female appointments and the magnitude of minimum female representation beyond token-level. Government mandated thresholds irrespective of their level of coercion, however, may come with substantial side-effects as they impose representation levels and timelines on firms which may not be a good fit for all firms and hence may prohibit a substantial shift towards truly gender egalitarian organizations. Voluntary targets, especially if target representation is self-determined by firms, may constitute a way for firms to set their own agendas and hence foster substantial change. Voluntary targets and the boundary conditions under which they may be effective remain under-researched. I therefore recommend the analysis of firm motivations to set certain targets, follow-through of targets as well as outcomes of target setting as avenues for future research.

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8. Appendix

Keywords used in top-down literature research (*Web of Science*):

1. *(TS=(gender AND (top AND management AND team))) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
2. *(TS=(gender AND board AND signal*)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
3. *(TS=(gender AND (board appointment) AND signal*)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
4. *(TS=(Signaling AND (Board AND Gender AND Diversity))) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
5. *(TS=((Signaling Theory) AND (Board AND Gender AND Diversity))) AND LANGUAGE:*
(English) Timespan=All years. Indexes=SSCI.
6. *((TS=(gender AND signal* theory))) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
7. *(TS=(gender quota)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
8. *(TS=(gender target)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
9. *(TS=(board AND signal*)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
10. *(TS=(board AND impression management)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
11. *(TS=(Signal* AND diversity AND management)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.
12. *(TS=(appointment AND gender)) AND LANGUAGE: (English)*
Timespan=All years. Indexes=SSCI.

Paper I

“We aim to have at least one woman on our board” – do self-determined gender targets reinforce tokenism?

Abstract

This paper discusses voluntary gender regulation that requires firms to set their own targets for female executive board representation without a given minimum target threshold. I assess whether firms’ targets exceed their existing female representation in the absence of sanctions. My analyses are based on 498 firm-year observations of targets disclosed by German firms in 2015 and 2017. I find that firms are less likely to commit to increases in female representation if they already feature one or more female board members, unless their board size makes their relative female underrepresentation exceedingly visible. I conclude that in the absence of a reference point such as a government recommended minimum target threshold for female share, voluntary self-determined targets may lead firms to converge at one female director. Thus, such targets may lead to a manifestation of female underrepresentation rather than a means to overcome it. I discuss implications for the design of gender regulation.

Keywords: *Gender diversity, executive board female representation, self-determined female target, aspirational talk*

1. Introduction

Regulatory pressure to increase corporate gender diversity has intensified in several countries over the past years (Mensi-Klarbach and Seierstad 2020; Seierstad and Opsahl 2011). Among countries with quota regimes, many require female board representation of at least 30-40% (Terjesen and Sealy 2016) along with costly sanctions for non-compliance. In Germany, however, the government passed legislation with a more flexible design in 2015. Large public firms are required to set self-determined targets for future female executive board representation⁷⁸. While reporting on targets and their fulfillment is required, non-compliance

⁷ In the German two-tier system boards are composed of an executive board and a supervisory board. Executive board members resemble executive directors while supervisory board members are equivalent to non-executive board members in one-tier systems such as the US system.

⁸ The FüPoG (Führungspositionen-Gesetz) or leadership position law was introduced in 2015 and requires publicly traded and co-determined firms in Germany to set targets for female representation on their executive boards. While there is no sanctioning for non-compliance or non-fulfillment of targets, firms are required to

and non-fulfillment of targets go unsanctioned and there is no minimum recommended female share for targets (Bundesanzeiger 2015). A year after the introduction of the law, only a third of the largest publicly traded German firms had set a target above 0% (AllBright 2016).

As targets are reported publicly, their level of ambition provides insight into firms' intended future level of executive board female representation. *Ambitious targets* exceed the status quo female representation of a firm and hence express an ambition to increase board gender diversity. *Unambitious targets* on the other hand do not exceed a firm's status quo and hence express a lack in ambition to improve gender diversity. The low overall desire to increase female executive board representation among German firms is intriguing for two reasons. Firstly, research has associated voluntary or unsanctioned targets with a positive shift towards gender diversity (Klettner et al. 2014; Sojo et al. 2016). Secondly, gender diversity is increasingly important for firms to maintain legitimacy and a favorable image and hence ensure survival (Windscheid et al. 2016a; Bear et al. 2010; Brammer et al. 2009; Hillman et al. 2007).

Compared to mandatory regulation such as the pioneering example of the Norwegian quota (Wang and Kelan 2013), voluntary targets are believed to enable gender diversity beyond mere compliance (Klettner 2016; Klettner et al. 2014). They promote gender diversity more effectively than would be the case in the absence of any regulation where firms tend appoint no more than one female director to avoid public scrutiny for having an all-male board (Dezső et al. 2016; Guldiken et al. 2019; Sojo et al. 2016). Nevertheless, the targeted level of female representation must be ambitious for effective promotion of diversity through voluntary targets (Locke and Latham 2002; Mensi-Klarbach et al. 2019). Therefore, if voluntary targets are unambitious, they may render regulation ineffective.

report targets and fulfillment status in their annual reports. Firms were mandated to set targets for 2017 and a maximum 5-year horizon after.

Existing knowledge on voluntary targets is largely conceptual with little empirical backing. In addition, literature does not distinguish between voluntary targets with government recommended *target thresholds* for female representation (Luckerath-Rovers 2015; Mateos de Cabo et al. 2019) and targets that are entirely *self-determined* by firms (Klettner 2016; Klettner et al. 2014). I argue that this distinction is necessary to empirically assess the factors driving firms' ambition levels and to ultimately design legislation in a way that effectively promotes gender diversity. This study focusses on self-determined targets to answer the research question: "*Under what circumstances do firms set ambitious gender targets for their boards in the absence of a recommended minimum target threshold?*".

It is important to close this gap since self-determined targets may prove useful to promote long-term gender equality (Klettner 2016) as a nuanced and effective design variant of voluntary targets (Locke and Latham 2002). Analyzing the motivation behind target setting empirically offers a critical perspective on policy design that sets the right impulses to make firms address gender inequalities beyond a symbolic level i.e., so-called "*tokenism*". The ongoing academic debate whether mandatory or voluntary measures are more appropriate to achieve gender equality demonstrates a need to further understand firm reactions to policy designs to come to a conclusion.

Based on institutional theory (North 1992) and the impression management perspective (Bolino et al. 2008; Bozeman and Kacmar 1997), I believe that a firm's female executive board representation and board size predict the level of its target ambition. I derive my hypotheses from considerations of legitimacy based on absolute and relative visibility of female executive directors (Miller and del Carmen Triana 2009; Hillman et al. 2007; Guldiken et al. 2019). To test my research model, I use the natural experiment of the German voluntary target for

executive boards. I examine 498 targets set by German firms in 2015 and 2017, the years when firms had to specify targets. My sample is composed of firms required to set voluntary gender targets because of their large size or status as publicly traded. I construct fractional response and logistic regression models to understand the magnitude and ambitiousness of firm targets.

This paper contributes to theory and practice in several ways. This research is the first dedicated and empirically supported study on self-determined gender targets to augment existing literature on gender intervention. By showing how firms determine their own gender targets, I apply institutional theory in a new context. Moreover, I enrich perspectives of impression management by introducing self-determined targets as means to frame gender ambition. For practitioners, understanding firms' motivations to set specific targets will help design effective policies and thereby leverage the potential of these individual forms of self-regulation.

The remainder of this manuscript is structured as follows: I introduce the theoretical foundations of voluntary targets, discuss institutional theory and impression management to then derive hypotheses for the role of existing female board representation and board size on target setting. After, I describe the research methodology and subsequently report findings. Finally, I discuss the results, derive avenues for further research and elaborate how my findings contribute to theory and practice.

2. Theory

2.1. Theoretical background

Voluntary gender targets

Designs of demand-side gender regulation can be categorized into voluntary and mandatory targets or quotas. While voluntary targets constitute mere recommendations, mandatory quotas are binding with sanctions for non-compliance. Further proposed distinctions, among others, include “hardness” and “progressiveness” of gender interventions (Mensi-Klarbach and Seierstad 2020). Hardness describes to what extent non-compliance is sanctioned and how specifically the regulation is worded. Progressiveness refers to characteristics such as the implementation schedule of the gender intervention and the required or recommended levels of female representation.

Although voluntary targets lead to increases in female representation in the long-run, their effectiveness depends on institutional pressure and support as well as sufficiently high ambition levels (Mensi-Klarbach et al. 2019; Sojo et al. 2016). Progress can be slow and overall lower in magnitude than increases achieved under mandatory regimes (Casey et al. 2011; Luckerath-Rovers 2015; Mateos de Cabo et al. 2019). Nevertheless, voluntary targets are believed to lead to a transition towards increased diversity compared to mandatory quotas as firms get to set their own agenda and create structures for a substantial shift towards gender diversity (Klettner et al. 2014; Terjesen and Sealy 2016). As a result, voluntary targets may enable a more positive association between gender representation and outcomes such as financial performance than mandatory quotas over time (Labelle et al. 2015).

Voluntary targets can be designed as specific minimum *target thresholds* for female representation recommended to firms or as *self-determined targets*. For self-determined targets,

firms decide their own ambition levels. Examples of voluntary target thresholds include the 30% gender quota for supervisory and executive boards passed in the Netherlands in 2013 as well as the Spanish target of 40% passed in 2007 (Luckeath-Rovers 2015; Mateos de Cabo et al. 2019). The Australian target and the German voluntary target for executive female representation, which require firms to set their own target levels, are examples for self-determined targets (Klettner et al. 2014). Both voluntary target thresholds and self-determined voluntary targets are formal policies codified in law. Compared to target thresholds, however, self-determined targets have a lower degree of hardness and progressiveness as they do not specify an explicit minimum level of female representation. This may leave firms uncertain about legitimate levels of board gender diversity.

Institutional theory and pressures behind the pursuit of gender diversity

Firms pursue diversity mainly to obtain legitimacy (Sharp et al. 2011; Seierstad and Opsahl 2011). Legitimacy arguments draw upon firms' exposure to public scrutiny and stakeholder expectations as drivers of female representation (Brammer et al. 2009; Hillman et al. 2007). Legitimacy, "the level of social acceptability bestowed upon a set of activities or actors" (Washington and Zajac 2005, p. 284; Bitektine 2011) is reached from a gender diversity perspective by obeying social norms of gender equality (Miller and del Carmen Triana 2009; Cialdini 2007; Seierstad and Opsahl 2011).

Institutional theory helps explain legitimacy as a driver for diversity initiatives as organizations respond to changes in their institutional context (Terjesen et al. 2014; North 1992). Organizations must abide by the institutions that rule the environment around them in order to survive (DiMaggio and Powell 1983; Meyer and Rowan 1977). These institutions include formal rules such as regulation as well as informal rules which may be behavioral norms or

conventions that have become generally accepted as guiding principles over time (North 1992). Ultimately, firms earn legitimacy by showing adherence to both formal and informal institutional constraints (Bitektine 2011).

Pressure for firms to abide by the norm of gender equality is especially high in environments where formal diversity regulation such as a mandatory quota creates an explicit minimum requirement for female representation (Terjesen et al. 2014). In environments where there is no minimum threshold, firms face uncertainty about acceptable levels for female representation. This uncertainty leads firms to imitate the behavior of their peers (DiMaggio and Powell 1983). The female representation of a given firm's peer group presents a reference point for a supposed legitimate level of gender diversity (Hillman et al. 2007; Chang et al. 2019; Dezső et al. 2016; Brammer and Millington 2006; Cialdini 2007). Consequently, firms converge towards a so-called "*implicit quota*", a level of female representation that is not a formal institution mandated by regulation, but an informal threshold deemed legitimate. Usually, firms converge to exactly one woman per board so as to avoid being scrutinized for maintaining an all-male board (Guldiken et al. 2019). Nevertheless, in general the implicit quota is the rounded up average number of female board members within a peer-group⁹ as an absolute value (Dezső et al. 2016).

Once firms reach the implicit quota, they tend to not appointment further women as institutional pressures become less pronounced once boards are not wholly homogenous (Guldiken et al. 2019; Dezső et al. 2016). In contrast, firms that do not meet the implicit quota for female representation are increasingly likely to appoint a woman into a board position to signal

⁹ E.g., in environments with overall female representation of 0.5 women per board, the implicit quota will be one woman. In an environment that averages 1.2 women per board, the implicit quota will be at two women per board (Chang et al. 2019; Dezső et al. 2016).

legitimacy through fulfillment of stakeholder expectations (Gregorič et al. 2015; Hillman et al. 2007; Miller and del Carmen Triana 2009).

Despite abiding by the implicit quota, individual firms may still be subject to scrutiny. While research has conceptualized implicit quotas as absolute values, proportional representation determines the roles and perceptions of women within the board (Kanter 1977; Shemla et al. 2014). Below a relative representation of approximately 15% of the overall group, women are perceived to be so-called “*tokens*” or symbolic representatives of their subgroup. This token status limits their ability to meaningfully influence decision making (Kanter 1977). The threshold for structural critical mass meanwhile is assumed to be at one third female representation. As a result, a firm that is represented by a board that features women perceived as token members may be scrutinized despite meeting the implicit quota given its overall board size. I conclude that on the surface, firms can satisfy institutional pressures by meeting the implicit quota, however they may need to make commitments beyond the implicit quota to maintain legitimacy if their female representation constitutes potential tokenism.

Diversity messaging and impression management

To showcase their legitimacy amidst institutional pressures, firms frame their behaviors in certain ways to protect their image, so-called “*impression management*” (Bolino et al. 2008; Bozeman and Kacmar 1997; Mohamed et al. 1999). For example, firms issue different forms of diversity statements to show adherence to the norm of gender equality, especially if they or their corporate boards are visibly homogenous (Windscheid et al. 2016a). Depending on their actual female representation, firms apply different tactics to either defend or acknowledge below average female representation. Similarly, they may publicly underline their success in attracting and retaining female talent if they meet the implicit quota (Windscheid et al. 2016a;

Mohamed et al. 1999; Bolino et al. 2008). To create a robust image, firms' actual qualities and actions must be consistent with their communicated qualities. If a firm with no diversity management structures in place assertively claims that it values gender diversity, its communication will be perceived as so-called "*mixed messaging*" (Windscheid et al. 2016b; Avery and Johnson 2008). Mixed messaging can compromise a firm's diversity reputation and hence lead to disadvantages e.g., in the recruitment of female talent (Avery and McKay 2006).

The corporate board itself is central to steering impression management activities (Bolino et al. 2008; Bozeman and Kacmar 1997). Board composition is viewed as a signal regarding a firm's diversity since composition can be seen as a series of hiring decisions (Connelly et al. 2011; Miller and del Carmen Triana 2009; Brammer et al. 2009; Chang et al. 2019). A heterogeneous board signals to outsiders that a firm understands and accounts for the needs of its diverse stakeholder base. This in turn will strengthen the firm's claims of legitimacy (Bitektine 2011; Brammer et al. 2009; Hillman et al. 2007). A homogeneous board, on the other hand, undermines a firm's perceived behavioral integrity, especially if the firm tries to communicate publicly that it values diversity despite its obvious lack of female board representation (Windscheid et al. 2016b). The larger the board, the more homogeneity becomes obvious and hence the more a firm will be concerned with the establishment of legitimacy through impression management (Carter 2006; Chang et al. 2019).

Voluntary gender targets as impression management in the face of institutional pressure

Synthesizing my insights on voluntary gender targets, institutional theory and impression management, I argue that firms increasingly face institutional pressures to address gender diversity. In the absence of regulation such as quotas, firms respond to these pressures by imitating peer group levels of female representation, the so-called implicit quota, and by

framing the narrative through impression management. The self-determined target for female board representation communicates a firm's attitude towards the norm of gender diversity. I therefore argue that self-determined targets are part of a firm's impression management.

Targets can be interpreted by outsiders as a commitment made by a firm to a certain future aspiration (Bansal and Clelland 2004). In my study this aspiration is defined as a specific level of female executive board representation. Ambitious targets, targets that exceed the status quo female representation of a firm, may be seen as an early step to stimulate a transition within a firm towards higher gender diversity (Christensen et al. 2013). In contrast, unambitious targets, targets that represent no more than a firm's status quo female representation, convey that a firm is not willing to invest in more female representation. Firms must carefully set and communicate targets to avoid sending mixed messages on diversity, which in turn may hurt, rather than improve, their image. An adequate framing of targets will depend on where a firm's female representation falls relative to the absolute implicit quota and its overall board size as well as on the firm's actual ability to attract and retain female talent in the future.

2.2. Hypotheses

Executive board gender composition and target setting

In my theorizing I stress that a firm's self-determined target setting for female executive board representation is a commitment towards future diversity aspirations. From an institutional perspective, firms are expected to converge at the peer group average i.e., the implicit quota of female representation over time, to maintain legitimacy. In the absence of a recommended target threshold, self-determined target regulation does not provide a clear social norm for acceptable target levels. Therefore, reference points are uncertain and will be constructed through observation of peer group behavior, much like implicit quotas in the absence of formal

regulation (Chang et al. 2019; Cialdini 2007; DiMaggio and Powell 1983). I argue that consequently, firms' self-determined gender targets should reflect this peer group reference level by meeting or exceeding the implicit quota.

However, pressure to adhere to the implicit quota may not apply to all firms to the same extent. Low female representation suggests that historically institutional pressure to appoint women may have been low for certain firms (Hillman et al. 2007). In the absence of additional pressure to increase female representation e.g., from mandatory quotas, firms with subpar executive board gender diversity may be able to maintain their legitimacy without committing to increases in female representation through self-determined targets at the peer group level.

From an impression management perspective, firms are expected to avoid mixed messaging on their diversity aspirations to protect their image and hence maintain legitimacy. A diversity mixed message represents a misalignment between the firms' observable characteristics and its communications (Windscheid et al. 2016b; Avery and Johnson 2008). A target that is set below a firm's status quo female representation would constitute such mixed messaging as firms that already feature women on their executive board would communicate that they are in fact not concerned with gender diversity. On the other hand, an ambition that is far beyond a firm's past proven ability to attract and retain women may also be perceived as mixed messaging since target fulfillment may be doubtful.

Given these restrictions, I argue that from an impression management point of view, firms will set targets at their status quo or existing female representation at the point in time of target setting or slightly higher. Targeting the status quo may be perceived as legitimate regardless of a firm's actual female representation. Firms with female representation below the implicit

quota can attempt to frame targets defensively e.g., by justifying them with a low industry female share (Windscheid et al. 2016b). Likewise, firms that already meet the implicit quota can assertively underline their achievement of attracting and retaining qualified female talent on their board. Finally, both types of firms can frame targets above their status quo female representation without sending mixed messages. Firms that meet the implicit quota can assertively state that they want to be at the forefront of gender diversity and hence commit to above average numbers of female executive directors. Firms that do not meet the implicit quota may acknowledge their shortcomings, stress the importance of gender diversity and vow to increase their efforts to attract qualified women in the future.

Synthesizing both the institutional and the impression management perspective, I argue that firms are generally under institutional pressure to set their targets for female executive board representation at minimum at the peer group average level which is the same as the implicit quota. Nevertheless, firms with female representation below the implicit quota may be able to justify targets below the implicit quota without sending diversity mixed messages. In contrast, firms that already meet the implicit quota cannot set targets below the implicit quota without compromising their public image. Therefore, I argue that overall firms that already meet the implicit quota will set higher targets for female representation than firms that do not meet the implicit quota. I base this on the assertion that firms with below peer group average female representation will set the implicit quota or a lower level while firms at or above peer group average level will set targets that reflect or exceed the implicit quota.

H1a: *Firms whose number of female executive directors meets the implicit quota for female executive board representation set higher target shares than firms that do not meet the implicit quota.*

The general institutionalist expectation is for firms to meet the implicit quota for female executive board representation, and therefore, firms below this level are under some pressure to catch up with their peers. Accordingly, these firms are expected to set ambitious targets above their status quo female representation, to reach the implicit quota which represents the peer group average. This pressure on individual firms with subpar female representation will increase as the share of firms that lag behind their peers decreases (Mensi-Klarbach et al. 2019).

Meanwhile, firms that have already reached the implicit quota are likely under less scrutiny and hence they are subject to less pressure to commit to further increases in their gender diversity to maintain legitimacy (Dezső et al. 2016; Guldiken et al. 2019). This should translate into less pressure to set ambitious targets for firms that meet or exceed the implicit quota compared to firms that are below. I therefore hypothesize that firms with female representation below the implicit quota are more likely to commit to increases in female representation through ambitious targets than firms that already meet or exceed it.

H1b: *Firms whose number of female executive directors meets the implicit quota for female executive board representation are less likely to set ambitious targets than firms that do not meet the implicit quota.*

Executive board size and target setting

Self-determined gender targets reflect the relative representation of female directors compared to the number of board seats that a firm commits to in the future. I have argued that from an institutional perspective, firms are under pressure to target female representation based on the peer group average or in other words, the implicit quota (Chang et al. 2019; Dezső et al. 2016). This implicit quota has been shown by past research to be an absolute number rather than a relative ratio and hence should be independent of the size of the board. This should be the case if firms with larger boards still target the same absolute number or implicit quota of female

executive directors as their peers. As a result, from an institutional perspective, the self-determined target for relative female representation overall should be negatively associated with board size.

***H2a:** Executive board size negatively moderates the association between the number of female executive directors and the female target share.*

From an impression management perspective, however, I argue that the relative visibility of female board members does affect firms' absolute target setting regardless of the absolute implicit quota. A firm whose female executive board representation amounts to the implicit quota may have still an exceedingly low relative female representation if its board is large. As underrepresented women are perceived to be tokens, their relative representation is important for their role within the group as well as the group image (Kanter 1977). Firstly, token status limits women's ability to meaningfully influence decision making. Furthermore, the existence of token members negatively affects overall perceptions of diversity of the group (Shemla et al. 2014). This may reflect negatively on firm images even if they meet the implicit quota.

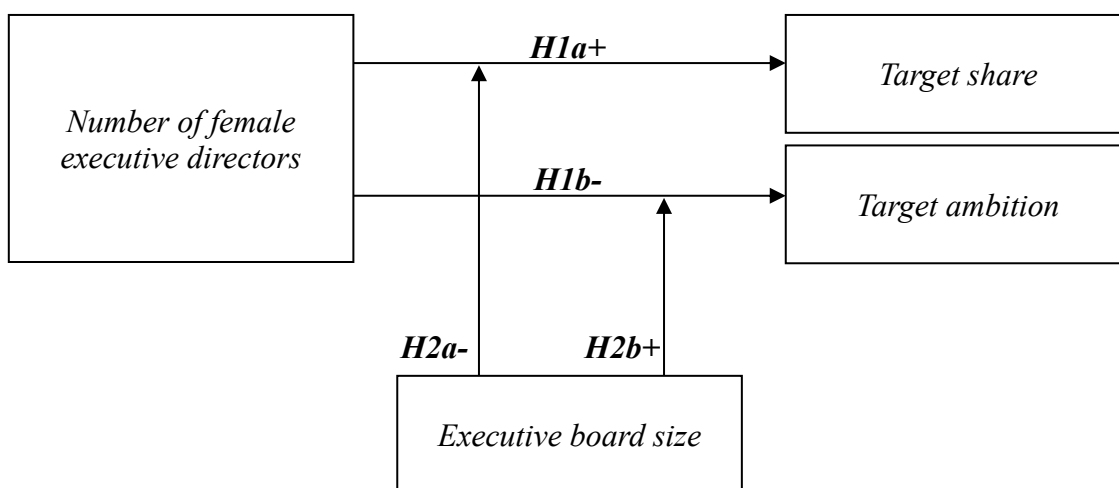
For firms with low relative female representation, setting unambitious targets communicates to outsiders that despite visible underrepresentation, the firm does not aspire to increase its executive board female share beyond token status. The firm may appear to be trying to create a legitimate image for itself by maintaining symbolic female representation while not undertaking structural diversity management measures. This may translate into a diversity mixed message to outsiders, which in turn could negatively affect the firm image. To avoid compromising its image, the firm may have to set an ambitious target to communicate that it aspires to increase relative female representation and hence give meaningful representation to

the female minority. Thus, there should be a firm size at which firms set ambitious targets despite already meeting the absolute implicit quota.

H2b: *Executive board size negatively moderates the association between the number of female executive directors and the target ambition.*

2.3. Overview of research model

Part A assesses the relationship between number of female directors, executive board size and the *target share as a percentage* according to H1a and H2a. *Part B* assesses the relationship between the *number of female executive directors, executive board size and target ambition* by testing whether the target is more ambitious than the status quo representation as hypothesized in H1b and H2b.



3. Methodology

3.1. Empirical setting: the German voluntary self-determined target

I use the case of the German self-determined target as a natural experiment and research context for this study since it provides one of the few such voluntary regimes to the author's knowledge. In 2015, publicly traded and/or co-determined firms in Germany were required to set targets for executive board gender representation for the first time. Targets measure the relative representation of female executives for a specific point in time. There is no prescribed minimum level of target female representation recommended by the regulation and hence targets can be set at an ambition level of 0% female representation. While there is no sanctioning for not setting or fulfilling targets, firms are required to publicly report both targets and status of fulfillment every year. The first round of targets to be published by firms in their 2015 reports specified ambition levels for 2017. Firms were then required to publish new targets in their 2017 annual reports, specifying ambitions for a horizon of no less than five years into the future (Bundesanzeiger 2015).

3.2. Sample

The dataset analyzed for this study contains 249 firms, which reported a self-determined target for their female executive board representation in their 2015 and 2017 annual report in response to the German gender target regulation *FüPoG*. I obtained data on 2015 targets from the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth. I matched 2017 targets as well as supervisory board and executive board composition data from annual reports. I gathered further data from secondary databases and annual reports. Eliminating firms which were not publicly traded from the sample of 1261 initial targets for the year 2015 reduced the sample to 346 firms. For 308 of these firms I was able to obtain targets from the second round of target setting in 2017. Observations for which any of my control or independent

variables were not available (e.g., because firms were delisted or dissolved) were deleted from the sample to ensure that the panel is balanced, leading to 498 firm-year observations for both sample years.

3.3. Measures

Dependent variable

Target share: the first dependent variable expresses the targeted female executive board representation set by the respective firm as a fraction ranging from 0 to 1. A target of 0% of relative board share is coded as 0 and a target of 100% is coded as 1 with all other fractions falling in between.

Target ambition: the second dependent variable was coded as 1 if the self-determined target set by a firm exceeded the relative executive board female representation of the respective firm at the end of 2015 for 2015 targets or the end of 2017 for the 2017 target.

Independent variable

Number of female executive directors: the independent variable is measured as the number of women on the executive board at the end of a given year. The variable is abbreviated as “*Female number*” for readability.

Moderator variable

Executive board size: the moderator variable is measured as the number of executive board seats listed in the respective annual reports for the end of the year. The variable is abbreviated as “*Board size*” for readability.

Control variables

I include industry female share for the respective year as a controlling variable to rule out the alternative explanation that industry affiliation, which precedes female board representation (Hillman et al., 2007), predicts targets. Furthermore, I include firm age in years and firm size measured as total revenues for a given year to account for inertia as a driver of target setting. I also add year dummies to rule out alternative explanations from a macro perspective (Knippen et al. 2019). Furthermore, I add dummies expressing if a firm was listed in one of the major Dax, Mdax or Sdax stock indices at the end of a given year to account for increased visibility of these firms. Lastly, profitability measured as the mean of the return on assets (“*RoA*”) of the target setting year and the year before is included in the model to control for financial distress as a decision driver (Ryan and Haslam 2005).

3.4. Analyses

In order to establish the implicit quota or peer group reference point in my sample, I calculate the mean absolute female number per board. The reference point is 1 if the overall mean is between 0 and 1 while it is 2 if the mean female representation is between 1 and 2, etc. (Dezső et al. 2016; Chang et al. 2019). I verify the implicit quota in my sample with supplementary data on all firms subject to the gender target to ensure that my sample reference number is representative for the overall sample of German firms subject to the gender target.

To test my hypotheses H1a and H2a of research model *Part A*, I construct a fractional response regression with robust standard errors. To test hypotheses H1b and H2b based on research model *Part B*, I construct a logistic regression with robust standard errors. I test each independent variable and interaction term individually against the outcome variable while including the full set of controlling variables. To probe interactions, I calculate predictive

margins and test the significance of marginal effects (Berry et al. 2010; Brambor et al. 2005). For the calculation of marginal effects, I hold all measures other than my interaction effects constant at their respective means.

To avoid driving results by outlier values, I winsorize the continuous variables total revenues, firm age and return on assets at the 1% level (Yang et al. 2019; Sila et al. 2015). I choose this over full data transformation to avoid sacrificing data interpretation as well as potentially altering the data inappropriately. I report my findings as well as robustness checks in the next section. I start by describing key sample characteristics and then move on to the results of my statistical modelling.

4. Findings

4.1. Descriptive statistics

In my sample, the mean female executive board representation is 0.19 and hence amounts to an implicit quota of one woman per board according to past research (Dezső et al. 2016; Chang et al. 2019). This number is representative of large German firms over the relevant time period (AllBright 2016, 2019). Therefore, I use the value of one woman per board as the implicit quota for hypothesis testing.

In *Table 1* I report the overall sample summary and the pairwise correlation table. *Table 2* shows the sample composition for the categorical variables used in my models.

Table 1: Pairwise correlations

	(0.1)	(0.2)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Mean	SD	Min	Max
(0.1) Target ambition	1.000										0.19	0.40	0.00	1.00
	-													
(0.2) Target share	1.000	1.000									0.08	0.13	0.00	0.50
	-	-												
(1) Female number	-0.031	0.510***	1.000								0.19	0.44	0.00	2.00
	(0.491)	(0.000)	-											
(2) Board size	0.188***	0.164***	0.500***	1.000							3.37	1.73	1.00	12.00
	(0.000)	(0.000)	(0.000)	-										
(3) Supervisory female share	0.156***	0.173***	0.232***	0.320***	1.000						17.50	14.11	0.00	50.00
	(0.001)	(0.000)	(0.000)	(0.000)	-									
(4) Return on assets (RoA)	0.007	-0.028	-0.053	0.099**	-0.053	1.000					3.18	6.92	-34.56	21.87
	(0.877)	(0.530)	(0.234)	(0.027)	(0.236)	-								
(5) Industry female share	-0.081*	-0.005	0.079*	-0.012	-0.150***	-0.011	1.000				0.34	0.22	0.02	0.76
	(0.072)	(0.911)	(0.078)	(0.796)	(0.001)	(0.806)	-							
(6) Firm age	0.059	0.042	0.093**	0.187***	0.168***	0.087*	-0.322***	1.000			73.45	56.82	6.00	227.00
	(0.193)	(0.351)	(0.038)	(0.000)	(0.000)	(0.053)	(0.000)	-						
(7) Index	0.216***	0.205***	0.273***	0.479***	0.302***	0.133***	-0.037	0.250***	1.000		0.37	0.48	0.00	1.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.412)	(0.000)	-					
(8) Total revenues	0.187***	0.174***	0.502***	0.680***	0.272***	0.011	-0.066	0.181***	0.393***	1.000	6.36	17.37	0.00	110.98
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.800)	(0.140)	(0.000)	(0.000)	-				

*P-values in parentheses under correlation coefficients, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

Table 2: Variable distribution

Variable	Frequency
<i>Dependent Variable</i>	
<i>(0) Target ambition</i>	
0	401 (81%)
1	97 (19%)
<i>Independent Variables</i>	
<i>(1) Female number</i>	
0	412 (83%)
1	76 (15%)
2	10 (2%)
<i>(2) Board size</i>	
1	29 (6%)
2	137 (28%)
3	159 (32%)
4	88 (18%)
5	36 (7%)
6	12 (2%)
7	15 (3%)
8	13 (3%)
9	6 (1%)
10	2 (0%)
12	1 (0%)
<i>Control Variables</i>	
<i>(7) Index</i>	
0	316 (63%)
1	182 (37%)

Table 3 shows the distribution of targets across years. While 33% of targets are above 0 as shown in column (A), only 19% are ambitious and hence exceed firms' current status quo of female board representation (B). Furthermore, I observe that only 17% of targets express an ambition that exceeds one natural person calculated as the product of the executive board size and the target share (C). Breaking down the sample into 2015 to 2017 numbers, I can see that the share of targets which are non-zero, ambitious or larger than one natural person rises over the two-year horizon.

Table 3: Distribution of targets

	(A) Non-zero target			(B) Ambitious target			(C) Target one person		
	2015	2017	Overall	2015	2017	Overall	2015	2017	Overall
<i>Yes</i>	26%	40%	33%	13%	26%	19%	14%	20%	17%
<i>No</i>	74%	60%	67%	87%	74%	81%	86%	80%	83%

4.2. Regression results

Table 4 reports the results of the fractional response regression to assess research model *Part A*. I construct *Model 2* and *Model 4* and find support for hypothesis 1a that firms with a higher number of women on the executive board (*Female number*) set higher targets for both boards with 1 and 2 women ($p < 0.000$; $\beta = 0.887, 0.994$). To better understand the effect size, I calculate the effect of *Female number* on *Target share* as a percentage change. I find that a 1% increase in *Female number* corresponds to a 4.5% change in *Target share* ($p < 0.000$).

Furthermore, I find support for hypothesis 2a that *Board size* negatively moderates the relationship between *Female number* and *Target share*. I explore the role of *Board Size* as a moderator and the relationship between *Female number* and *Target share* by constructing *Model 5*. I find a significant negative interaction coefficient between *Female number* and *Board size* ($p < 0.001$; $\beta = -0.173$) for firms with one female executive board member while the coefficient is not significant for boards with two female members ($p < 0.352$; $\beta = 0.043$).

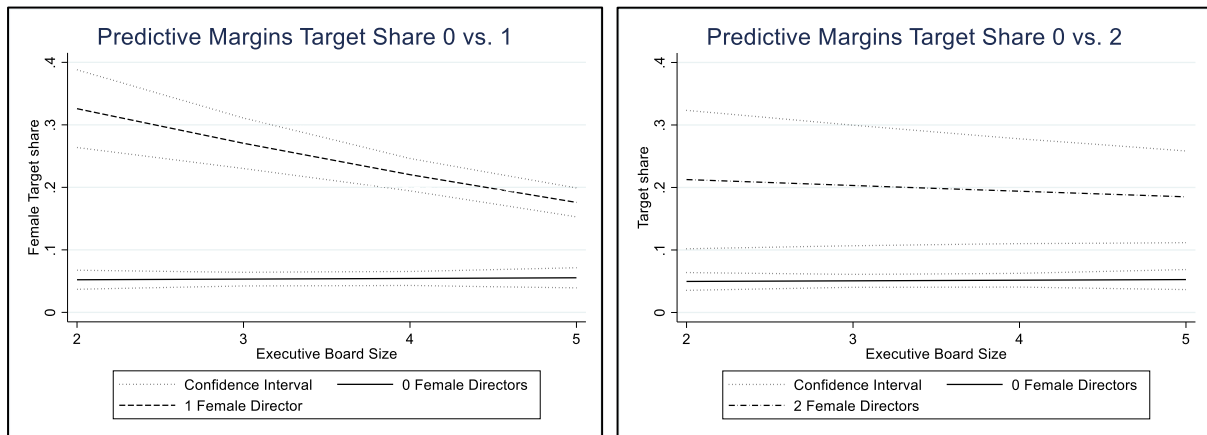
I conduct an analysis of predictive margins and effect sizes (Berry et al. 2010; Brambor et al. 2005) to probe the interaction and find that predictive margins are significant across all board sizes. Predictive margins for boards with one and two female directors are plotted with 95% confidence intervals in *Graph 1*. Marginal effects are only significant for boards with one female director, but not two. Coefficients are negative, pointing to a significantly negative association between additional board seats and target shares for firms that have one female

executive director at the point in time of target setting. For firms without female directors and those with two female directors the interaction is not significant.

Table 4: Results Fractional Response Regression

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<i>Controls</i>					
<i>Controlling variables</i>					
<i>Supervisory female share</i>	0.005 (0.133)	0.002 (0.435)	0.005 (0.151)	0.003 (0.293)	0.002 (0.391)
<i>Return on assets</i>	-0.007 (0.190)	-0.003 (0.570)	-0.007 (0.186)	-0.002 (0.744)	-0.001 (0.864)
<i>Industry female share</i>	0.019 (0.921)	-0.242 (0.185)	0.016 (0.936)	-0.239 (0.186)	-0.284 (0.122)
<i>Firm age</i>	-0.000 (0.678)	-0.001 (0.497)	-0.000 (0.672)	-0.000 (0.561)	-0.001 (0.459)
<i>Index</i>	0.281*** (0.001)	0.210*** (0.009)	0.276*** (0.002)	0.257*** (0.002)	0.244*** (0.003)
<i>Total revenues</i>	0.003** (0.015)	-0.004*** (0.002)	0.003 (0.116)	-0.001 (0.474)	0.003 (0.117)
<i>Independent variables</i>					
<i>Female number (1)</i>		0.887*** (0.000)		0.922*** (0.000)	1.544*** (0.000)
<i>Female number (2)</i>		0.994*** (0.000)		1.125*** (0.000)	0.953*** (0.001)
<i>Board size</i>			0.006 (0.824)	-0.062** (0.029)	0.010 (0.796)
<i>Female number (1) x Board size</i>					-0.173*** (0.000)
<i>Female number (2) x Board size</i>					-0.043 (0.352)
<i>Observations</i>	498	498	498	498	498
<i>Pseudo R-Squared</i>	0.03	0.10	0.03	0.10	0.11
<i>Wald Chi²</i>	54.34	240.58	54.45	246.66	259.67
<i>Prob Chi²</i>	0.000	0.000	0.000	0.000	0.000

*P-values in parentheses * p < 0.10, ** p < 0.05, *** p < 0.01; Year dummies included, but not reported*

Graph 1: Predictive margins target share by board size

In *Table 5* I report the results of the logistic regression models I construct to explore research model *Part B*. Results are expressed in exponentiated coefficients or so-called “*odds ratios*” for ease of interpretation. Odds ratios approximate how much more likely or unlikely an outcome, in my case an ambitious target, is at a one unit increase of the value of the independent variable *ceteris paribus* (Hosmer et al., 2001). I interpret odds ratios above one as a positive relationship while odds ratios less than one show a negative relationship between independent and dependent variable.

Table 5: Results Logistic Regression

	Model 6 <i>Controls</i>	Model 7	Model 8	Model 9	Model 10
<i>Controlling variables</i>					
<i>Supervisory female share</i>	1.009 (0.308)	1.012 (0.169)	1.008 (0.389)	1.010 (0.291)	1.010 (0.305)
<i>Return on assets</i>	0.992 (0.624)	0.991 (0.583)	0.990 (0.556)	0.985 (0.409)	0.988 (0.511)
<i>Industry female share</i>	0.377 (0.105)	0.546 (0.339)	0.357* (0.087)	0.495 (0.263)	0.483 (0.255)
<i>Firm age</i>	0.998 (0.456)	0.998 (0.520)	0.998 (0.423)	0.998 (0.462)	0.998 (0.434)
<i>Index</i>	2.590*** (0.000)	2.815*** (0.000)	2.453*** (0.001)	2.476*** (0.001)	2.522*** (0.001)
<i>Total revenues</i>	1.011* (0.075)	1.029*** (0.001)	1.007 (0.389)	1.020** (0.040)	1.027** (0.033)
<i>Independent variables</i>					
<i>Female number (1)</i>		0.203*** (0.001)		0.164*** (0.000)	0.167 (0.007)
<i>Female number (2)</i>		0.079** (0.045)		0.056*** (0.004)	0.000*** (0.001)
<i>Board size</i>			1.079 (0.430)	1.230* (0.058)	1.156 (0.213)
<i>Female number (1) x Board size</i>					0.987 (0.952)
<i>Female number (2) x Board size</i>					5.563*** (0.003)
<i>Observations</i>	498	498	498	498	498
<i>Pseudo R-Squared</i>	0.10	0.13	0.10	0.14	0.15
<i>Wald Chi²</i>	40.27	53.61	41.83	56.15	60.67
<i>Prob Chi²</i>	0.000	0.000	0.000	0.000	0.000

*Exponentiated coefficients; p-values in parentheses * p < 0.10, ** p < 0.05, *** p < 0.01; Year dummies included, but not reported*

I test hypothesis 1b, which predicts that firms with higher female executive board representation are less likely to set ambitious targets than firms without female representation through *Models 7 and 9*. I find support for this hypothesis for both boards with one and two female executive directors. Odds ratios are below one ($p=0.001$; $\beta=0.203$, $p<0.000$; $\beta=0.164$) for firms with one female director as well as for firms with two female directors ($p=0.045$;

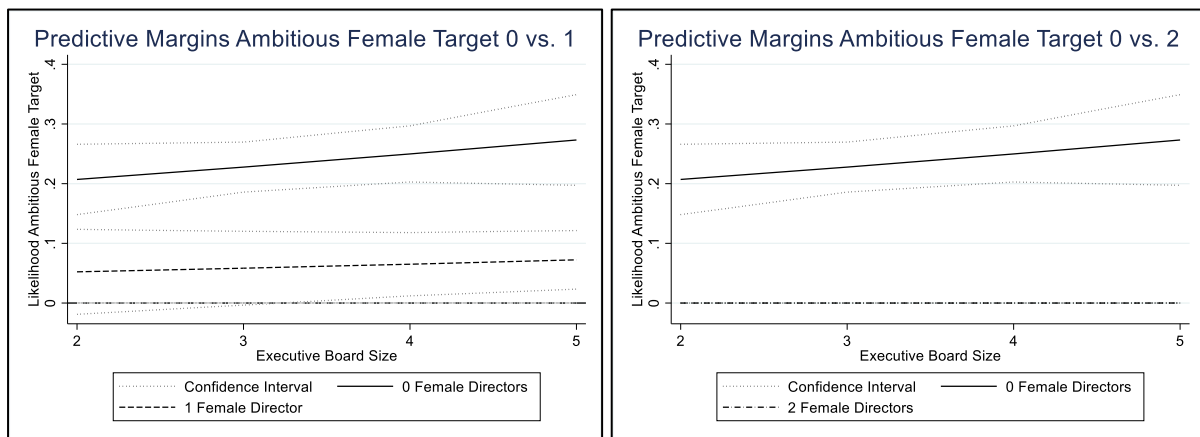
$\beta=0.079$, $p=0.004$; $\beta=0.056$). The average marginal effect of an additional female board member on ambitious target setting is -0.22 ($p=0.001$). Overall, my results indicate that there is a significant negative non-zero relationship between *Female number* and *Target ambition*.

To test hypothesis 2b that higher *Board size* predicts higher likelihood of ambitious target setting even for firms with female executive board representation above zero, I construct *Model 10*. I find partial support for this hypothesis. My results show insignificant negative odds-ratios ($p<0.952$; $\beta=0.987$) for the interaction effect for boards with one woman while I find a significant positive odds-ratio ($p<0.003$; $\beta=5.563$) for boards with two members. To probe the interaction effect, I again calculate predictive margins and marginal effects as proposed by Berry et al. (2010).

Predictive margins reveal that the probability of ambitious target setting is significant at a 95% confidence level for board sizes larger than three members for firms with one female executive director. They are not different from zero for any board size with two female directors. I depict these predictive margins in *Graph 2*. The graph shows that up to three board members, zero is included in the 95% confidence interval for firms with female representation. At a board size of four, predictive margins for boards with one woman become significantly different from zero. This indicates that these firms set ambitious targets with a non-zero probability. For boards without female representation I find that predictive margins for *Target ambition* are significantly different from zero across all board sizes. This is in line with my results for H1b which predicts that firms without women are more likely to set ambitious targets than other firms. Average marginal effects are insignificant for all board sizes and numbers of female board directors, indicating that increasing board size does not significantly change the odds of ambitious target setting.

Overall, my analysis of the results of *Part B* suggests that while female representation by itself is associated with decreases of the odds of ambitious target setting, there is some evidence of higher likelihood of ambitious target setting for boards with one female member if board size exceeds three members and therefore relative representation goes below ~30%. Firms that already have two female members on their executive board on the other hand are unlikely to set an ambitious target regardless of board size. In contrast, firms without female board members have an increased likelihood of ambitious target setting regardless of board size.

Graph 2: Predictive margins ambitious target setting



4.3. Robustness checks

I reject concerns of multicollinearity by calculating variance inflation factors (VIF), which range from 1.04 to 2.25 with a mean of 1.43 and hence are within the generally accepted spectrum. Furthermore, I follow Kalnins' three step approach to identify potential sources of multicollinearity. I mitigate potential multicollinearity issues by stepwise omission of highly correlated variables and find that my results remain unchanged in direction and significance (Kalnins 2018). I conduct Hosmer-Lemeshow goodness of fit tests for my logit models to confirm adequate fit (Hosmer et al. 2001).

I address potential sources of endogeneity, specifically omitted variables and reverse causality. I include year dummies in my models to control for macro effects that may present institutional pressures to communicate higher diversity targets for firms. I repeat my hypothesis testing for both target setting years individually. I find that for 2017 my effects are similar to the overall sample in significance and direction for *Part A (Target share)* and *Part B (Target ambition)*. For 2015 I find that *Part A* yields similar results to the overall sample, while I do not find evidence supporting my hypotheses backing *Part B*. Secondly, I take my 2017 sub sample and substitute 2017 values of the independent variables *Female number* and *Board size* with the mean of 2017 and 2016 values to introduce a time lag while still accounting for the point in time of target setting and long-term diversity image of the board. I receive similar results in direction and significance to my main models.

Finally, I recalculate my models to account for potential outlier values driving results. Firstly, I recode female board representation in the full sample as a dichotomous dummy that only distinguishes between boards with and without female representation. I also recalculate my models with the subset of 488 observations with less than two women on the executive board.

Moreover, I test my hypotheses without winsorizing the continuous variables and with the log transformed total revenues as measures for firm size. All tests replicate my results in significance and directionality.

5. Discussion

This study analyzes self-determined voluntary gender targets. While past research posits that voluntary gender targets in general lead to an effective cultural shift towards higher diversity, I advocate for more differentiation between target designs. Specifically, I distinguish between voluntary regimes with recommended target thresholds and those that solely rely on firms' self-determined targets.

The results show that self-determined targets without a recommended target threshold as reference level lead to a convergence of firms at target levels that would also be expected in the absence of gender interventions, so-called "*implicit quotas*". While this may lead to a manifestation of tokenism rather than substantial increases in diversity, my study also points to some encouraging tendencies in firm behaviors that could be exploited to make self-determined targets more effective. Overall, I believe that self-determined targets without reference thresholds can be redesigned to allow for more meaningful fostering of structural gender diversity. In the following I discuss my findings to substantiate this conclusion.

Firstly, my results indicate that firms with higher female representation on their board at the point in time of target setting are more likely to set higher targets than others. These targets are negatively associated with board size – a clear sign that firm targets converge at an absolute implicit quota. My results therefore replicate findings from Dezső et al. (2016) and Chang et al. (2019) on firms' convergence at implicit gender quotas. However, their studies were conducted in the absence of gender interventions such as mandatory or voluntary targets. Thus, there seems to be little difference in firm behavior between firms that are required to set self-determined gender targets and those that face no gender diversity regulation.

Implicit quotas have been shown to range from one to sometimes two absolute female board members in different studies (Dezsó et al. 2016; Chang et al. 2019). This number represents female token status according to most recent research results (You 2019). Targets thereby manifest female (under-) representation as a norm and reference point for legitimate gender diversity. In other words, self-determined targets without minimum target threshold as a reference for meaningful female representation make implicit quotas explicit.

Moving beyond implicit quotas as an absolute value, I show that firms already meeting the absolute implicit quota start committing to further increases in their female representation if a lack in diversity is exceedingly visible. My findings suggest that firms may consider increases if their relative female representation is lower than 25% or one out of four board members. This is just shy of the one third of representation which is often cited as critical mass for meaningful female representation within groups (Kanter 1977). The motivation behind this target setting behavior may derive from considerations of impression management rather than assumptions of the potential utility of a gender diverse board. Nevertheless, I argue that despite firms' general tendencies to settle for absolute implicit quota levels, self-determined targets may push firms beyond implicit quotas based on the relative level of female representation.

While my results paint a mixed picture of the effectiveness of self-determined targets compared to no regulation at all, I believe that there are three sources of institutional pressure that make them relatively more effective than implicit targets are in the absence of any regulation over time. Firstly, the time-constrained manner of self-determined targets may expedite the achievement of targets compared to implicit quotas since firms have to report their target fulfillment and can be held accountable. Secondly, the institutionalization of self-determined targets itself may increase overall public scrutiny regarding board gender diversity as gender

becomes a more salient feature of corporate boards. Lastly, as targets themselves may serve as reference values, firms may be pressured to set ambitious targets if the peer group largely sets ambitious targets. This may expedite appointments and hence move implicit quotas more quickly than they otherwise would. I argue, however, that these three sources of institutional pressure may fall short of instilling the cultural shift purported by past research, but rather increase the necessity for firms to comply.

In order to enhance the effectiveness of self-determined targets in increasing gender diversity, I argue that two main pitfalls need to be addressed. Firstly, a target threshold that overwrites existing implicit quotas is necessary to guide firms towards higher ambitions. This threshold can come in the form of minimum target recommended by the regulatory body or third parties. Furthermore, the threat of the introduction of a mandatory quota if recommended voluntary target thresholds are not reached within a certain timeframe may increase awareness of the need to increase gender diversity among late adopters (Mensi-Klarbach et al. 2019).

Secondly, the lack in structural changes towards more gender inclusive organizations may be addressed by supplementing representation targets with incentives to implement broader diversity management programs. This would force firms to substantiate demand-side targets with measures to create a strong pipeline of qualified female candidates to fill executive positions. After all, targets do not only reach external stakeholders such as clients or investors, but also the internal work force. If accompanied by initiatives to foster female career paths and a clear agenda over time, self-determined targets may show commitment from the senior firm leadership to sponsor the cultural change towards a more gender diverse workforce.

Theoretical implications of my study include the extension of both institutional theory and impression management to the new context of self-determined targets. Furthermore, I differentiate voluntary targets into targets with a reference threshold and self-determined targets. I show empirically that in the absence of a target threshold, voluntary targets by themselves may not lead to the alleged cultural shift towards gender diversity that has been theorized by past research. With my insights, I contribute to completing the “mosaic picture” (Mensi-Klarbach and Seierstad 2020) of different gender intervention designs.

As one of the first empirical studies of the German voluntary gender target five years after the implementation of the *FüPoG*, my study is subject to several limitations. Firstly, firms made the 2015 and 2017 target setting decisions under increased public scrutiny since the newly passed *FüPoG* law required them to determine their gender targets for the first time. This might have led to more ambitious target setting than would be expected given firms’ individual characteristics. On the other hand, firms may have been overly conservative since reputational consequences of not meeting self-determined targets were not clear to firms initially. Assessing panel data of target setting over a longer period could help calibrate potentially inflated or overly conservative target signals. However, data availability will depend on the regulatory requirements imposed on firms. At the time this study is conducted there is political debate about an amendment of the German *FüPoG*. Secondly, I take an outside-in perspective on assessing antecedents, while board-level variables other than the mere representation of female supervisory directors may play a role in the decision-making process. Furthermore, it remains unclear what the specific decision-making process of target setting looks like. A more focused research setting can help establish causation and detail the nature of the relationship between female representation on the supervisory board and the ambitiousness of target setting.

To further advance the research on voluntary self-determined targets beyond the limitations of this study, I propose the following avenues for future research. Firstly, the use of mixed-method research could shed further light on decision making from an internal firm perspective e.g., at the board level. Since internal firm politics likely play a role in the setting of targets, interviews as well as the analysis of meeting protocols could help understand firms' target setting. Secondly, given that social norms play a significant role in target setting, I propose an assessment of different stakeholder perspectives on gender diversity ambitions. While the regulatory framework in Germany allows for this natural experiment, cultural considerations may also play a role in how firm targets are perceived by stakeholders. Research into the cultural dimension can help firms adjust their target setting behavior in different cultural contexts. Thirdly, moving away from the study of antecedents, researchers should assess outcomes of target setting e.g., reputational gains to more thoroughly understand the broader business case of gender targets. Lastly, understanding whether targets are honest is another research stream to pursue. This will help stakeholders and researchers better understand the connection between targets and the expected future diversity of a firm.

From a practical perspective, I identify shortcomings of self-determined target regulation and propose measures to increase efficacy of such regulatory regimes. Furthermore, my research points to the non-black-and-white nature of voluntary target setting, which firms seem to still be ignoring. Firms may benefit from actively using target ambitions to set the internal case for change and hence a cultural shift in motion. To instill this cultural shift, firms may start by setting ambitious target levels accompanied by commitments to implement supplementary initiatives to develop and advance female talent while constantly holding the organization accountable for fulfillment.

6. References

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Paper II

Meaningful signals or cheap talk – do firms appoint women after committing to increases in female board representation?

Abstract

I assess whether firms' signaling of their ambition to increase female executive board representation through gender targets is followed by an actual increase in female representation and whether profitability acts as a moderator. I construct a GEE population-averaged model to assess 1056 firm year observations from 2015 to 2018. My results show that firms communicate mostly truthful ambitions about their female executive board representation and that profitability moderates the relationship between ambitious targets and subsequent diversity increases. I find that a higher RoA predicts higher odds of increases in female executive board members for profitable firms after ambitious target setting. I contribute to the existing body of literature on diversity interventions by showing empirically that voluntary targets need not lead to decoupling and that profitability is associated with higher implementation capacity of gender targets.

Keywords: *Board gender diversity, voluntary targets, target fulfillment, decoupling, implementation capacity*

1. Introduction

“I am a quota woman” – was a much-debated title of the German *Stern* magazine in 2020 in which high-profile women such as Ursula von der Leyen, President of the European Commission, and Janina Kugel, former Chief Human Resource Officer at Siemens, spoke out in favor of a mandatory gender quota for German politics as well as public and private sector firms. While the female share in top management positions in German firms has increased since the introduction of the German voluntary gender target in 2015, there remains ample public debate on the effectiveness and necessity of gender interventions (Allbright Stiftung 2016, 2020). Critics of the German voluntary target regulation outline two potential shortcomings in the absence of sanctions. Firstly, firms may set no targets at all and secondly, if they do, they may set deliberately ambitious targets without the intention of subsequent follow-through on female appointments.

Within the existing body of literature, gender targets can be approached from the perspective of *goal setting theory* (Locke and Latham 2006; Mensi-Klarbach et al. 2019; Locke and Latham 2002). Following the logic of goal setting, ambitious, specific and time-constrained targets should be effective in increasing executive board gender diversity (Mensi-Klarbach et al. 2019; Latham and Locke 1975; Locke and Latham 2002). Given the public visibility of targets that are reported in firm communications, it is important to not only treat them as internal diversity management tools, but also as communication tools to stakeholders. As such, firms may not only see targets as goals to achieve, but also as “*intent signals*” or “*aspirational talk*” (Connelly et al. 2011; Christensen et al. 2013) to express their ambition to obtain a certain quality e.g., the ability to foster a gender-diverse workforce in the future to stakeholders.

After setting a target, firms may 1) undertake positive actions towards fulfillment of the stated ambition or 2) refrain from fulfilling their ambition and hence engage into so-called “*decoupling*”, which describes a disconnect between announcements and subsequent actions (Winkler et al. 2019; Graafland and Smid 2016; Bromley and Powell 2012; Christensen et al. 2013). The theoretical perspectives of goal setting and signaling of intent provide fertile ground for the further analysis of the effectiveness of gender targets in increasing female executive board representation.

Empirical research establishes a positive relationship between voluntary quotas set by governments or code recommendations and female representation (Mensi-Klarbach et al. 2019; Sojo et al. 2016) under certain conditions. However, the efficacy of targets that are determined by firms themselves on female representation remains under-researched. In one of the few studies on self-determined targets Klettner et al. analyze targets to increase gender diversity set by Australian firms (2014). A thorough assessment of firms’ follow-through with their self-

determined targets, however, remains outstanding to the best of my knowledge. Similarly, boundary conditions under which self-determined targets lead to follow-through or decoupling are still unknown.

As for boundary conditions, the ability to fulfill announced ambitions depends on a firm's individual capacity to implement desired changes (Cole 2005; Bromley and Powell 2012; Lim and Tsutsui 2011). In this context, lower financial performance has been associated with lower likelihood of actual implementation of announced policies (Westphal and Zajac 1994). More profitable firms, on the other hand, show higher Corporate Social Performance including the treatment of women and minorities (Waddock and Graves 1997; Surroca et al. 2010). In the context of self-determined gender targets, such perspectives on the relationship between financial performance and announced gender ambition are still missing. In this paper I address both questions: *“Do ambitious gender targets for corporate boards lead to subsequent diversity increases and is this relationship dependent on a firm's financial implementation capacity?”*

To answer my two research questions, I use panel data from German publicly traded firms subject to the voluntary target regulation from 2015 to 2018 to construct a population averaged GEE model. The German legislation required firms to state explicit gender targets in their public reporting by end of 2015 for a first and after 2017 for a second time. I corroborate my database from government data, firm communications and SNL with a final sample of 264 firms and 1056 firm-year observations.

Understanding firm actions and corresponding boundary conditions yields several theoretical and practical contributions. Firstly, I expand and empirically test the concept of intent signals

within signaling theory by applying the concept of aspirational talk, which is mainly used in the CSR context and mostly discussed conceptually rather than analyzed empirically. Secondly, I provide empirical backing on the effectiveness of voluntary gender targets for the ongoing discussion on quota designs beyond the dichotomy of hard versus soft based on my application of goal setting theory (Mensi-Klarbach and Seierstad 2020; Mensi-Klarbach et al. 2019). Lastly, assessing the role of profitability for female appointments after target setting will provide a first layer of context to the discussion on boundary conditions for target effectiveness. For practitioners such as regulators, strategy departments and current (as well as prospective) employees, understanding and adequately interpreting firm targets leads to better informed decision making on regulatory design, competitive responses and career choices.

The remainder of this paper is structured as follows: Firstly, I provide an overview of the relevant theories and their interconnections to derive my working hypotheses on target follow-through and the interaction of profitability for statistical analysis. Secondly, I introduce the research methodology including the empirical setting of the German voluntary target and report findings of my hypothesis testing. Finally, I discuss the corresponding results in the context of existing work and derive avenues for future research.

2. Theory

2.1. Theoretical background

Demand-side interventions and self-determined targets

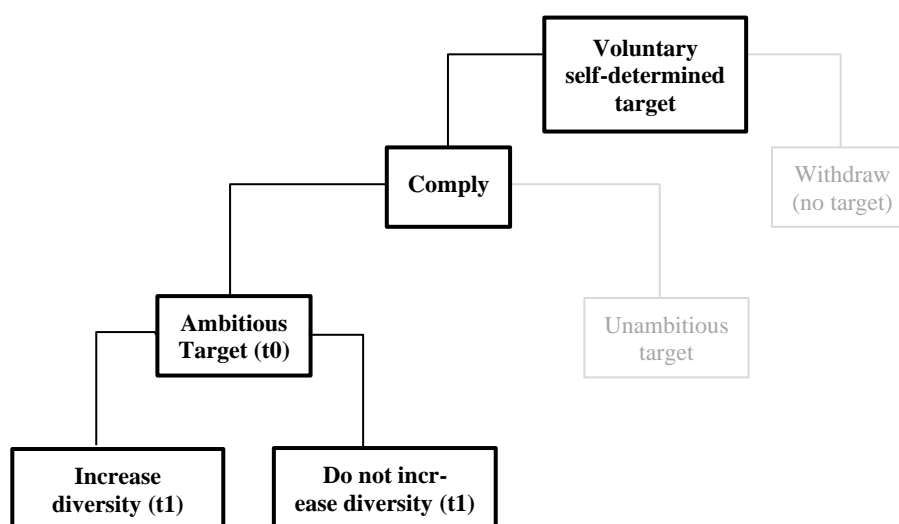
Voluntary gender targets are a type of demand-side interventions, which describe measures that increase the demand for female representation until structural equality is reached (Gabaldon et al. 2016). Structural equality allows firms to sustain female representation once demand-side interventions are removed (Kogut et al. 2014). Demand-side interventions towards more balanced gender representation in organizations can be classified, among others, along two axes. Firstly, types of demand-side strategies distinguish between interventions such as quotas, targets and reporting requirements (Sojo et al. 2016; Terjesen and Sealy 2016). Secondly, the degree of coercion summarizes characteristics such as the level of enforcement, wording precision, time to implementation, prescribed representation of subgroups or the scope of organizations affected.

While the effectiveness of a demand-side intervention to promote gender diversity depends on its coerciveness (Gregorič et al. 2015; Sojo et al. 2016) there is evidence of a positive impact on female representation for both voluntary and mandatory regimes (Casey et al. 2011; Wang and Kelan 2013; Sojo et al. 2016; de Anca and Gabaldon 2013). In the absence of sanctions, normative pressure exerted by stakeholders may lead to the adoption of recommended or voluntary diversity thresholds by organizations (Terjesen and Sealy 2016; Klettner et al. 2014; Mensi-Klarbach et al. 2019). This is the case when targets or thresholds are clearly measurable and when there is transparency on fulfillment e.g., through reporting requirements (Mensi-Klarbach et al. 2019; Sojo et al. 2016). Given the important role of stakeholder pressure, voluntary regimes are more effective for firms that are more dependent on external resources

such as larger firms or firms which depend on the award of public contracts (Mateos de Cabo et al. 2019).

In the absence of empirical studies on self-determined voluntary targets in different settings, current thinking on their efficacy remains largely theoretical to the best of the author's knowledge. I approach my empirical assessment of the effectiveness of self-determined voluntary targets from the perspective of firm choices and begin with an illustration of these choices in the form of a decision tree in *Figure 1*.

Figure 1: Firm choices for voluntary self-determined targets:



Source: Own representation

When faced with demand-side regulation on gender representation, firms have two choices to respond regardless of the type of intervention or its degree of coercion. They can a) comply with the specific terms of the regulation or they can b) refuse to do so either by withdrawal from the regulated context, such as delisting (Ahern and Dittmar 2012; Seierstad et al. 2020; Hillman 2014), or by accepting the respective sanctions for non-compliance. Voluntary self-determined target regimes break the choice of “*comply*” into two stages: firstly, the initial

choice of the target ambition at t_0 and secondly, the subsequent decision whether or not to fulfill the self-determined target at t_1 .

The breakout is significant for two reasons: Firstly, the number of deployable strategies compared to a mere voluntary threshold increases since firms may choose to leave their targets unfulfilled while still being compliant with the regulatory requirement of setting a target. Secondly, there is a delay between target setting at t_0 and potential target fulfillment at t_1 and hence a firm's circumstances may change between both points in time. Changes could, for example, include the availability of qualified candidates following a bandwagon effect and therefore high demand for female managers among peers after the impositions of regulation (Mensi-Klarbach et al. 2019). Furthermore, a firm's financial situation which may influence the ability to attract qualified candidates (Waddock and Graves 1997) or implement costly diversity management measures (Dobbin et al. 2007) could change between t_0 and t_1 .

To assess the effectiveness of gender targets, *goal setting theory* has been proposed in prior research (Mensi-Klarbach et al. 2019; Sojo et al. 2016). Since targets usually contain public reporting requirements to hold firms accountable for ambition levels and progress, apart from self-motivation, stakeholder pressure is a driving force behind firms' choices to fulfill voluntary gender measures (Mateos de Cabo et al. 2019; Terjesen and Sealy 2016). This stakeholder perspective lends itself to the application of *signaling theory* as a theoretical context (Spence 1973; Connelly et al. 2011) in addition to goal setting theory. Firms attempt to send signals on their ability to adhere to gender diversity norms through female appointments (Miller and del Carmen Triana 2009). I argue that besides gender appointments, gender targets may also constitute signals from firms to stakeholders. Thus, both goal setting and signaling

theory provide theoretical lenses for hypothesis-building to answer my research question. I introduce both perspectives in the following.

Goal setting theory – ambition and goal-commitment

Goal setting theory studies the relationship between performance goals and their respective outcomes (Locke and Latham 2002, 2006). While the theory originally focuses on individuals, it has since been conceptually expanded to include the organizational level in the context of gender targets (Mensi-Klarbach et al. 2019; Sojo et al. 2016). One of the central positions is that targets need to be specific, ambitious and time-constrained in order to instill positive change (Locke and Latham 2006, 2002; Latham and Locke 1975). Accordingly, targets for female representation on executive board level should reflect these characteristics to be effective (Sojo et al. 2016; Mensi-Klarbach et al. 2019).

As a secondary consideration, goal commitment influences the relationship between the mentioned target characteristics and the resulting performance enhancement (Locke and Latham 2006, 2002). Goal commitment is driven by goal importance which in turn can be increased by making the commitment public and hence a question of integrity as well as through self-determination of the goal (Locke and Latham 2006, 2002).

The overarching goal characteristics of goal specificity, time constraint as well as goal commitment derived from targets as public information and self-determined ambitions are inherent to regulation (Mensi-Klarbach and Seierstad 2020) and therefore mostly similar for all firms that fall under the same regime. In contrast, target ambition may differ between firms. As target ambition is publicly observable it can be interpreted as a signal of a firm's intention

to attract qualified female executives. To account for the perspective of targets as external communication, I add the theoretical frame of signaling theory in the following.

Signaling theory - quality versus intent

Firms faced with information asymmetry between insiders and stakeholders aspire to make their unobservable qualities visible to outsiders by disseminating signals (Connelly et al. 2011; Spence 1973). Signals are distinguished between “*quality signals*” and “*intent signals*”. One example of a quality signal could be the appointment of a female director to communicate a firm’s ability to support female employees throughout their careers or to exhibit the firm’s general adherence to norms (Miller and del Carmen Triana 2009; Connelly et al. 2011). A signal will be produced by a firm if the benefits of sending the signal outweigh the cost of creating it (Spence 1973). In the example of a firm and its recently appointed female director, there may be net benefits such as increased attractiveness to potential female recruits (Iseke and Pull 2017).

While the appointment of a female director is a classic quality signal, signals may not always constitute real actions. Firms can announce their mere intent to obtain a certain quality in the future (Heil and Robertson 1991; Connelly et al. 2011). If there is no cost attached to casting a signal, signaling of intent is referred to as “*cheap talk*” (Austen-Smith and Banks 2000). In the absence of a downside, it may benefit the sender to produce a signal even if they do not possess the underlying quality. Hence, weighing the costs against the benefits, firms may resort to truthful or false signaling of intent. I argue that self-determined gender targets constitute intent signals as they merely announce a firm’s intention, but not necessarily its ability to achieve a certain gender representation in the future. Therefore, in the context of self-determined gender targets, firms have both options, truthful and false signaling.

While both intent signals and quality signals exist, most studies theorize about quality signals exclusively (Connelly et al. 2011). I therefore borrow the concept of *"aspirational talk"* (Winkler et al. 2019) from CSR literature for my theorizing on intent signals. The concept of intent signals is very similar to the concept of aspirational talk from CSR research, defined as "communication, which announces ideals and intentions rather than reflect actual behaviors" (Christensen et al. 2013, p. 373). If formally announced intention and implementation in practice deviate from one another, the term *"decoupling"* applies (Bromley and Powell 2012; Meyer and Rowan 1977). In the context of gender targets, decoupling refers to a false intent signal, an ambitious target that does not get fulfilled subsequently. Decoupling occurs as firms balance conflicting demands between institutionalized external pressures and their internal capabilities in order to obtain legitimacy (Meyer and Rowan 1977).

Decoupling is likely, among others, if a firm's implementation capacity is weak (Cole 2005; Lim and Tsutsui 2011). Implementation capacity represents a firm's ability to establish structures to bridge the gap between status quo and formally communicated ambition. If firms lack the capacity to alter their structures in favor of their stated ambitions, decoupling will likely result, as summarized by Meyer et al.: *"It is easier to create a cabinet ministry with appropriate policies [...] for the protection of women than to [...] organize social services implementing these policies."* (1997, p. 157).

While aspirational talk is often associated with decoupling and deception (Bromley and Powell 2012; Heil and Robertson 1991), a number of researchers emphasize its performative nature (Christensen et al. 2013). Although firms may not be able to initially reconcile discrepancies between external pressure and internal practice, decoupling could be transitory and hence decreasing over time as a firm acquires the actual quality it claims to have (Haack et al. 2012).

Aspirational talk can bring a topic on the firm's agenda and empower the organization to change which may then lead to at least partial policy adoption (Christensen et al. 2013; Haack et al. 2012; Winkler et al. 2019). In the case of gender targets this would mean a higher likelihood of increases in gender diversity after ambitious target announcement over time.

2.2. Hypotheses

Ambitious targets and increases in diversity

I derive my hypothesis on the association between ambitious targets and diversity increases based on three assertions of goal setting theory. Firstly, more ambitious targets lead to higher goal-performance as higher task difficulty leads to higher efforts and as a result performance (Latham and Locke 1975; Locke and Latham 2002, 2006). This relationship has been extended to firm level targets (Mensi-Klarbach et al. 2019). Thus, in a similar manner ambitious gender targets should also lead to higher female representation than unambitious targets (Klettner et al. 2014).

Secondly, I argue that the way self-determined targets instill public scrutiny increases the goal-commitment of firms that have set ambitious targets thereby leading to higher goal performance in the form of diversity increases. The introduction of the self-determined target as a regulatory measure makes the gender dimension more salient as a societal norm and hence firms' board gender representation is subject to elevated levels of public scrutiny (Knippen et al. 2019; Guldiken et al. 2019). Furthermore, reporting requirements on targets make it easy for outsiders to observe whether targets are fulfilled and hence increase target efficacy (Sojo et al. 2016). Therefore, meeting their formally stated ambition is important for firms to protect their integrity (Terjesen and Sealy 2016; Miller and del Carmen Triana 2009; Mensi-Klarbach et al. 2019). Since the public nature of targets increases the importance of target fulfillment as a

matter of legitimacy, self-determined targets should have elevated levels of goal-commitment among firms (Locke and Latham 2006, 2002). To put it differently: “(...) *although talk may be cheaper than other actions it is not as cheap as it used to be.*” (Christensen et al. 2013, p. 383).

Thirdly, determining their own targets increases firms’ ownership for their ambition levels and in turn leads to higher goal-commitment (Klettner et al. 2014; Locke and Latham 2006). Target setting is likely the result of information exchanges between internal stakeholders. This exchange leads to the formulation of an informed strategy with the necessary commitment of the stakeholders involved in the discussion. I argue that a firm that formally commits to a planned increase in board gender diversity as opposed to merely signaling adherence to its existing status quo is likely highly committed to implementing its ambition since it may lose legitimacy otherwise (Lim and Tsutsui 2011).

I acknowledge that target fulfillment is voluntary and hence goal commitment may be lower in the absence of sanctions (Gregorič et al. 2015; Sojo et al. 2016) than it would be for mandatory quotas. However, I argue that for goal commitment following ambitious targets, the theorized combination of public scrutiny and target ownership weighs heavier than a lack in legal coercion. Therefore, I summarize my argument on the relationship between ambitious target setting and diversity increase by hypothesizing that:

H1: Ambitious targets to increase the number of female executive directors lead to subsequent female appointments into the executive board.

The moderating effect of profitability

While I have argued that more ambitious self-determined targets should generally lead to higher performance measured as actual diversity increases, I acknowledge that this association may differ between firms. Decoupling between ambition and actual firm activities depends on a firm's capacity to implement its ambition (Bromley and Powell 2012; Cole 2005; Lim and Tsutsui 2011). One of the determining aspects of implementation capacity is a firm's financial ability to afford changes. Consequently, financial capacity has also been identified as a source of decoupling in different contexts such as adoption of voluntary standards (Dietz et al. 2019; Christmann and Taylor 2006). In the context of gender targets, I argue that profitability as a measure of financial capacity and hence an important proxy of implementation capacity overall acts as a moderator of the relationship between targets and appointments. To derive my hypotheses on the direction of the relationship, I argue that a firm's general financial situation is a relevant context factor. Therefore, in the following, I look at firms that are in financially precarious situations separately from those that are not.

Decoupling has been associated with financial performance as firms determine their targeted implementation quality based on the consideration of cost and benefits (Christmann and Taylor 2006). Firms are more likely to engage in decoupling if they have a poor financial record (Westphal and Zajac 1994). If a firm has recently experienced financial underperformance, it will attempt to signal change in governance to stakeholders while avoiding structural changes (Kulich et al. 2015). As female leadership traits are often identified as better suited in crisis than stereotypically male traits (Eagly and Carli 2003; Kulich et al. 2015), women frequently get appointed into board positions by firms in precarious situations to signal such change. However, they will quite often be associated with the precarious situation and get replaced soon

after. This phenomenon is coined the so-called “*glass cliff*” (Ryan and Haslam 2005; Ryan et al. 2015).

While glass cliff studies investigate actual female appointments, I argue that in the presence of a self-determined target regulation, financially distressed firms may opt for less costly degrees of implementation while attempting to reap short-term reputational benefits. Therefore, they may signal changes in governance to get out of crisis through ambitious female targets instead of actual appointments, which can be more costly than target setting alone (de Anca and Gabaldon 2013). Self-determined target setting in two stages gives distressed firms the opportunity to reap potential short-term benefits from signaling their willingness to change through the female target set at t_0 without having to actually make a female appointment at t_1 .

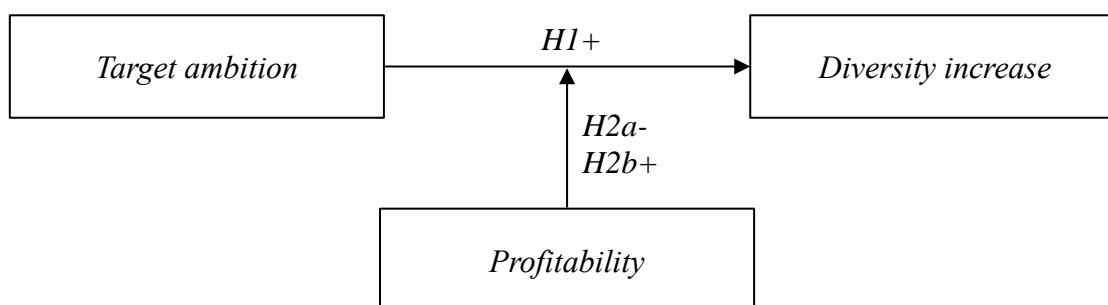
In contrast to firms in financially precarious situations, firms that are not under financial strain may base their target setting decision on different aspects than signaling change in governance. They may signal ambition to increase gender diversity because they are under increased stakeholder pressure if women are underrepresented compared to their peers (Chang et al. 2019; Dezső et al. 2016). Alternatively, they may believe in the instrumental advantages of gender diversity such as better CSR or innovation performance (Bear et al. 2010; Miller and del Carmen Triana 2009; Díaz-García et al. 2013). Regardless of the firm motive, committing to change incurs initial setup and maintenance cost (Christmann and Taylor 2006). Finding a suitable female candidate for an executive position incurs search cost while the long-term retention of female talent requires further discretionary spending on diversity management measures, which mostly profitable firms are able to afford (Surroca et al. 2010; Waddock and Graves 1997). Therefore, I argue that firms need enough available financial resources to fulfill their stated diversity ambitions as an indicator of implementation capacity.

Summarizing both perspectives, I argue that financial performance plays a relevant, albeit different, role in target fulfillment for firms under distress and those that are well-endowed.

H2a: Profitability negatively moderates the association between ambitious targets and female appointments such that unprofitable firms are less likely to appoint women into the executive board after setting ambitious targets.

H2b: Profitability positively moderates the association between ambitious targets and female appointments such that profitable firms are more likely to appoint women into the executive board after setting ambitious targets.

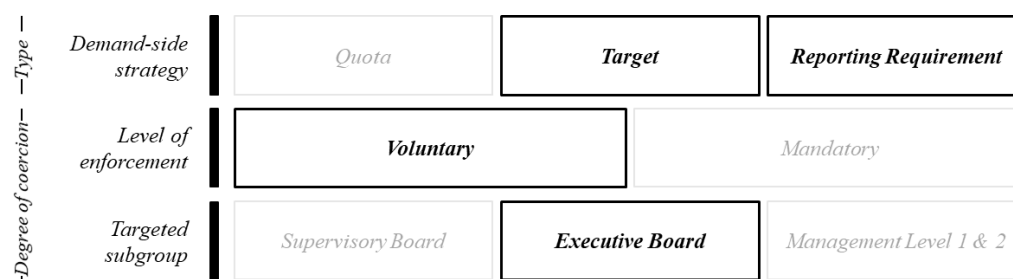
2.3. Overview of research model



3. Methodology

3.1. Empirical setting: the German voluntary self-determined target

Figure 2: The German voluntary target for the executive board



Source: Own representation

The German equal opportunity regulation for leadership positions from 2015, the so-called *FüPoG*¹⁰, requires publicly traded and equally co-determined firms to set a target ambition for the female representation on their executive board as well as the first and second management layer below the executive board. At the same time, a mandatory 30% female quota applies to the supervisory board. Firms are required to report both their target ambitions for the executive board and subsequent management layers and their realized female representation in those hierarchy levels in their annual reports.

Since the introduction of the regulation, firms had to state their targets at a minimum two points in time: Firstly, in 2015 firms were asked to set targets for mid-2017 and thereafter for a specified point in time no more than five years in the future (Bundesanzeiger 2015). Firms do not face any sanctions for failure to report or fulfill targets and hence the regulations fall within the category of voluntary targets as defined by Mensi-Klarbach and Seierstad (2020). In *Figure 2* I specify the configuration of the German voluntary target for the executive board as the

¹⁰ “Führungspositionen Gesetz“ – Leadership position law

empirical context of this study along the two dimensions *type of intervention* and *degree of coercion* proposed by Mensi-Klarbach und Seierstad (2020).

3.2. Sample

I analyze a sample of 264 German firms that are either publicly traded and / or fall under the German codetermination law since they have more than 500 employees over the horizon from 2015 to 2018 for a total of 1056 firm year observations. I received data on firm targets set in 2015 from the German Federal Ministry for Family Affairs (BMFSFJ), Senior Citizens, Women and Youth. Data on gender diversity in executive and supervisory boards as well as targets set in late 2017 were gathered from annual reports and supplementary firm materials. Further financial firm data was gathered from SNL. I confirmed that observations were available for all firms across all sample years to ensure a balanced sample in my final dataset.

3.3. Measures

Dependent variable

Increase in diversity: I measure the dependent variable increase in diversity as a binary measure coded 0 if a firm's female executive board representation as a percentage of total board seats at t0 year-end of target setting is below or equal to the female representation at t1 year-end. If female representation at t1 is higher than at t0 I assign a value of 1 respectively. I measure this for a horizon of one and two years between t0 and t1 respectively.

Independent variable

Female target ambition: target ambition is a binary measure, coded 0 if female executive board representation as a percentage of total board seats at t0 is higher or equal to the target for female executive board representation set by the firm at t0. If the target ambition exceeds female board representation at t0, the variable is coded as 1.

Moderating variable

Profitability: I measure the moderator variable profitability as the return on assets (RoA) for a given year t0 and cross-check my results with the return on equity (RoE) (Adams and Ferreira 2009; Hoobler et al. 2016).

Control variables

I include firm age to control for inertia as a potential antecedent of decoupling into my models (Hillman et al. 2007). Furthermore, I include executive board size to control for relative influence of individual board members that may make policy-decoupling more likely (Bromley and Powell 2012). To account for baseline representation levels and considerations of group composition (Kanter 1977), I include the number of women on the executive and supervisory board at t0. To account for visibility and potential outside stakeholder pressure (Terjesen and Sealy 2016) I include total revenues as well as a dummy variable distinguishing between firms which were listed in the Dax30 Index, MDax Index, SDax Index or in no index at all at the end of the respective year. Finally, I include an industry dummy based on the SIC code to account for the different shares of women in different industries (Hillman et al. 2007) as well as a dummy variable to control for year effects and time since target imposition (Knippen et al. 2019; Sojo et al. 2016).

3.4. Analyses

I construct a GEE population-averaged model and specify Huber-White standard errors to account for potential correlation within my responses (Ballinger 2004). Similar to other studies in the field of board gender diversity (Knippen et al. 2019; Hillman et al. 2007; Mensi-Klarbach et al. 2019), I chose this approach over a fixed effects model given the lack of variance in the dependent variable over time for most of my observations, which would mean a substantial loss in data and potentially compromising external validity (Hill et al. 2019). I test my hypotheses H1, H2a and H2b individually. To draw conclusions on the validity of H1 I interpret the significance of my coefficients as well as the odds ratios. To test for the theorized interaction effect in H2a and H2b I calculate marginal effects to understand the effect of ambitious target setting on the probability of an increase in diversity at different profitability levels (Brambor et al. 2005; Berry et al. 2010). For the calculation of marginal effects, I hold all measures other than my interaction effects constant at their respective means.

I winsorize continuous variables included in my model, namely total revenues, firm age and return on assets at the 1% and 99% level to avoid driving results by outlier values (Yang et al. 2019; Sila et al. 2015; Arena et al. 2014). The next section reports descriptive statistics, an overview of my model outputs as well as corresponding robustness checks.

4. Findings

4.1. Descriptive statistics

16% of the firm year-observations point to an ambitious target in the overall sample. Increases in diversity are registered for 5% of observations within a one-year timeframe and 9% for a two-year timeframe respectively. I report correlations between independent variables as well as further sample statistics in *Table 1*. Furthermore, I provide the distribution of categorical variables and variables with integer ranges in *Table 2*.

Table 1: Pairwise correlations

Variables	(0.1)	(0.2)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Mean	SD	Min	Max
<i>(0.1) Increase 1 Year</i>	1.00										0.05	0.22	0.00	1.00
	-													
<i>(0.2) Increase 2 Year</i>	0.621***	1.00									0.09	0.29	0.00	1.00
	(0.000)	-												
<i>(1) Ambitious target</i>	0.172***	0.167***	1.00								0.16	0.37	0.00	1.00
	(0.000)	(0.000)	-											
<i>(2) Return on assets (RoA)</i>	-0.003	0.094	-0.039	1.00							3.19	6.61	-27.97	21.69
	(0.912)	(0.760)	(0.208)	-										
<i>(3) Board size</i>	0.124***	0.132***	0.132***	0.091***	1.00						3.39	1.73	1.00	12.00
	(0.000)	(0.000)	(0.000)	(0.003)	-									
<i>(4) Executive female number</i>	-0.026	-0.040	-0.008	-0.042	0.525***	1.00					0.20	0.46	0.00	2.00
	(0.393)	(0.197)	(0.797)	(0.171)	(0.000)	-								
<i>(5) Supervisory female number</i>	0.156***	0.227***	0.196***	0.037	0.531***	0.378***	1.00				2.03	2.08	0.00	9.00
	(0.000)	(0.000)	(0.000)	(0.226)	(0.000)	(0.000)	-							
<i>(6) Total revenues</i>	0.093***	0.108***	0.165***	0.015	0.667***	0.483***	0.539***	1.00			6348	16,917	2.08	105,494
	(0.002)	(0.000)	(0.000)	(0.639)	(0.000)	(0.000)	(0.000)	-						
<i>(7) Firm age</i>	0.042	0.053*	0.023	0.090***	0.178***	0.092***	0.256***	0.180***	1.00		73.72	56.92	7.00	232.00
	(0.171)	(0.086)	(0.453)	(0.003)	(0.000)	(0.003)	(0.000)	(0.000)	-					
<i>(8) Industry</i>	0.021	0.052*	-0.070**	0.024	-0.064**	-0.031	0.005	-0.010	-0.230***	1.00	4.34	2.25	1.00	9.00
	(0.494)	(0.093)	(0.024)	(0.436)	(0.037)	(0.308)	(0.876)	(0.739)	(0.000)	-				

*P-values in parentheses under correlation coefficients, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Year dummies and index dummies excluded*

Table 2: Variable distribution

Variable	Frequency	Variable	Frequency
Dependent Variable		Control Variables (continued)	
<i>(0.1) Increase 1 Year</i>		<i>(4) Executive female number</i>	
0	1003 (95%)	0	867 (82%)
1	53 (5%)	1	163 (15%)
<i>(0.2) Increase 2 Year</i>		2	
0	960 (91%)	<i>(5) Supervisory female number</i>	
1	96 (9%)	0	315 (30%)
Independent Variables		1	252 (24%)
<i>(1) Ambitious target</i>		2	128 (12%)
0	887 (84%)	3	97 (9%)
1	169 (16%)	4	119 (11%)
Control Variables		5	55 (5%)
<i>(3) Board size</i>		6	51 (5%)
1	64 (6%)	7	26 (2%)
2	288 (27%)	8	7 (1%)
3	330 (31%)	9	6 (1%)
4	179 (17%)	<i>(8) Industry</i>	
5	84 (8%)	Construction	8 (1%)
6	35 (3%)	Finance, Insurance, Real Estate	148 (14%)
7	32 (3%)	Manufacturing	532 (50%)
8	25 (2%)	Mining	4 (0%)
9	13 (1%)	Public Administration	4 (0%)
10	4 (0%)	Retail Trade	36 (3%)
11	1 (0%)	Services	188 (18%)
12	1 (0%)	Transport & Public Utilities	108 (10%)
		Wholesale Trade	28 (3%)

4.2. Population-averaged model

Table 3 shows the results of my population-averaged model for all hypotheses over a timeframe of one and two years. I report results in odds ratios for ease of interpretation. Odds ratios express how much more likely on outcome of 1 rather than 0 for the dependent variable is per unit increase of the respective independent variable. Odds ratios above 1 express a positive relationship while odds ratios smaller than 1 express a negative relationship (Hosmer et al. 2001).

Hypothesis 1 posits that firms that send an ambitious intent signal will follow through with an increase in female representation on their executive board as a quality signal. My findings

support hypothesis 1 based on the positive association between ambitious target setting for both the 1-year and the 2-year horizon (p -value = 0.000, 0.005; β = 4.002, 2.499) for the total sample. Firms are approximately 4 and 2 times more likely to increase gender diversity on the executive board over the 1 and 2-year horizon respectively if they signal ambitious targets in t_0 .

Table 3: Results population-averaged model

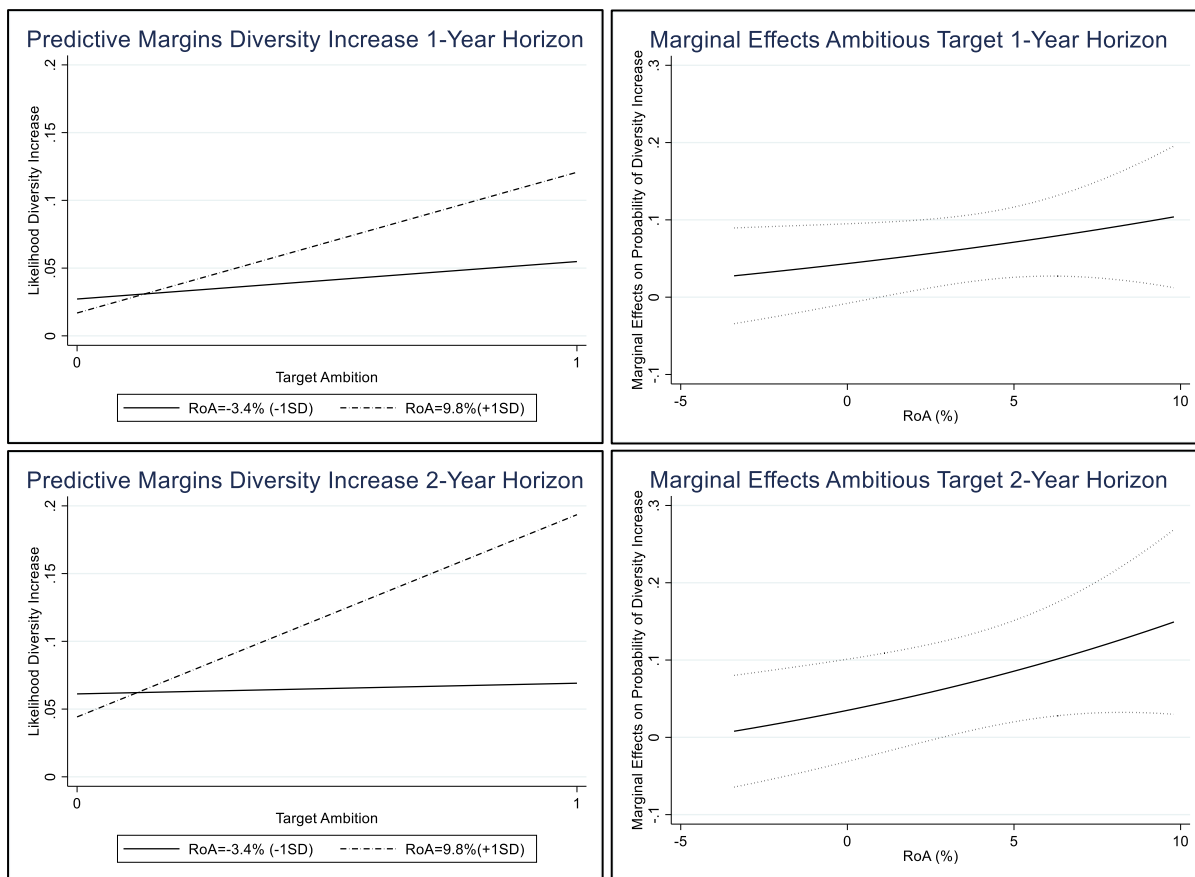
	<i>Model 1</i> <i>1-year</i> <i>horizon</i>	<i>Model 2</i> <i>2-year</i> <i>horizon</i>	<i>Model 3</i> <i>1-year</i> <i>horizon</i>	<i>Model 4</i> <i>2-year</i> <i>horizon</i>	<i>Model 5</i> <i>1-year</i> <i>horizon</i>	<i>Model 6</i> <i>2-year</i> <i>horizon</i>
<i>Control Variables</i>						
<i>Board size</i>	1.496*** (0.001)	1.338** (0.010)	1.519*** (0.001)	1.344*** (0.008)	1.533*** (0.001)	1.353*** (0.007)
<i>Executive female num.</i>	0.150*** (0.000)	0.155*** (0.000)	0.164*** (0.001)	0.169*** (0.001)	0.164*** (0.001)	0.169*** (0.001)
<i>Supervisory female num.</i>	1.436*** (0.000)	1.480*** (0.000)	1.420*** (0.000)	1.464*** (0.000)	1.415*** (0.000)	1.463*** (0.000)
<i>Total revenues</i>	1.000 (0.678)	1.000 (0.690)	1.000 (0.609)	1.000 (0.632)	1.000 (0.730)	1.000 (0.753)
<i>Firm age</i>	1.001 (0.714)	1.001 (0.688)	1.002 (0.566)	1.001 (0.604)	1.002 (0.496)	1.002 (0.540)
<i>Industry</i>	1.024 (0.756)	1.070 (0.312)	1.029 (0.704)	1.078 (0.266)	1.024 (0.758)	1.073 (0.295)
<i>Independent Variables</i>						
<i>Target</i>			4.002*** (0.000)	2.499*** (0.005)	2.938** (0.023)	1.682 (0.230)
<i>RoA</i>			0.988 (0.536)	0.995 (0.811)	0.964** (0.032)	0.974 (0.187)
<i>Target x RoA</i>					1.108 (0.135)	1.122** (0.047)
<i>Observations</i>	1056	1056	1056	1056	1056	1056
<i>Wald Chi²</i>	44.81	70.37	48.77	77.91	55.58	91.54
<i>Prob > Chi²</i>	0.00	0.00	0.00	0.00	0.00	0.00

*P-values in parentheses under coefficients, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Year dummies and index dummies included in model, but not reported*

Hypotheses 2a and 2b hold that the relationship between ambitious target setting in t0 and an increase in diversity in t1 is negatively moderated by profitability for unprofitable firms and positively moderated for profitable firms. My model output suggests that there is no overall significant positive relationship between the interaction term and the increase in executive board gender diversity over the 1-year horizon ($p=0.132$; $\beta=1.108$). However, I find a significant interaction coefficient over the 2-year horizon ($p=0.047$; $\beta=1.122$). While the coefficients reported in the results table suggest partial support for my hypothesis that there is an interaction effect between ambitious target setting and profitability, I reject hypothesis 2a and find partial support for hypothesis 2b based on the analysis of marginal effects. To interpret the interaction, I plot predictive margins and marginal effects as well as corresponding confidence intervals in *Graph 1* and *Graph 2* (Berry et al. 2010; Brambor et al. 2005).

Graph 1:
Predictive Margins interaction variable

Graph 2:
Marginal effects interaction variable



Graph 1 depicts predictive margins for the 1 and 2-year horizon based on *Model 5 and Model 6* for RoA values one standard deviation below (-3.4%) and above (9.8%) the sample mean. The plot shows that an increase in the likelihood of ambitious target setting is higher over the 2-year than the 1-year horizon and that the slope differences are more pronounced over the 2-year horizon.

To understand in which area the interaction is significant, I calculate marginal effects and plot them in *Graph 2*. The bold line depicts the marginal effects of having signaled an ambitious target as opposed to an unambitious target at a certain level of profitability within my sample range for the 1-year and the 2-year horizon. 95% significance intervals are marked by the dotted lines. The areas where 0 is not included in the 95% confidence interval marks where the marginal effects are significantly different from 0.

For the 1-year horizon I register a negative marginal effect on subsequent increases in diversity for firms with a negative profitability. This effect turns positive for firms with RoA values above -10%. The effect, however, is only significant within a 95% confidence interval for positive RoA values ranging between around 1% and 11% with an overall positive total effect of the interaction on the likelihood of an increase in executive board diversity of between 5% and 11% in the respective range. This interval includes 74% of the overall sample, 82% of firms within 1 standard deviation above and below the mean and 85% of profitable firms in the sample.

I observe a similar pattern of negative and positive marginal effects of ambitious target setting on increases in diversity for the 2-year horizon. For RoAs ranging between 3% and 14% there is a significant increase in the likelihood of an increase in diversity upon signaling ambitious

targets between 6% and 22% respectively. This significance interval captures a fraction of 49% of the overall sample and 53% of firms within 1 standard deviation above and below the mean which translates into 57% of profitable firms.

As for my controlling variables, I can see that board size is positively associated with increases in diversity, which is not surprising since board size has been associated with female board representation in past research (Hillman et al. 2007). Secondly, the positive association of the supervisory board female number with an increase in gender diversity on the executive board may be a function of women supporting the nomination of female directors (Guldiken et al. 2019). Lastly, the number of female executive directors at the time of target setting is significantly negatively correlated with increases in diversity which may point to a tendency of firms not to appoint additional women once there is a woman on the board (Dezső et al. 2016). No other controlling variables are significant in my models.

4.3. Robustness checks

General robustness checks

To further ensure the overall robustness of my results, I conduct several standard tests and address concerns of endogeneity. I calculate QICs to ensure that correlation matrixes are adequately specified (Ballinger 2004). I rule out multicollinearity as an issue by calculating Variance Inflation Factors which range from 1.06 to 2.69 and hence are within generally accepted boundaries (O'brien 2007). In addition, I apply Kalnins' three step approach which does not flag any multicollinearity issues (Kalnins 2018). Furthermore, I specify a pooled logit model with robust standard errors yielding similar results to the GEE model. I then calculate AICs for the pooled logit model to confirm that my independent variables of interest create significant variance compared to the controls-only models.

As for endogeneity, I rule out reverse causality for my analysis since my response variables are lagged by 1 and 2 years respectively for all my models. I cannot, however, based on my methodology rule out that a firm had already decided to increase diversity before t_0 and set targets accordingly. Furthermore, I use year dummies to control for macro effects, thereby decreasing the risk of omitting important variables. Lastly, I reduce the sample to t_0 observations from the respective years in which firms had to set targets, thereby reducing my observations to 528 firm-year observations and again obtain similar results. I also repeat my testing without winsorizing the sample and confirm that results are the same in direction, significance and magnitude.

Robustness checks for all hypotheses

I test whether the results for all hypotheses are the same if I apply a different dependent variable, namely non-zero targets instead of ambitious targets. Results confirm my findings for both hypotheses in directionality and significance while yielding slightly higher effect sizes than ambitious targets for diversity increases. I apply RoE as an alternative profitability measure for RoA and again obtain similar results in significance and direction which capture 90-97% of the profitable firms in the sample and explain up to 14% and 29% increase in probability of a diversity increase over the one and two-year horizon respectively. Furthermore, I repeat my hypothesis testing with altered RoA values and again receive similar results. Specifically, I use RoA at t_1 instead of t_0 as implementation capacity as well as the average RoA over the 1 and 2-year horizon between t_0 and t_1 to account for potential changes.

5. Discussion

This study seeks to shed light on firms' follow-through after signaling ambitious gender targets on the executive board level along two main research questions: Firstly, do firms increase their board diversity, once they have signaled an ambition to do so? Secondly, does profitability influence firms' decisions on follow-through such that firms that are unprofitable at the time of target setting are less likely to fulfill their targets and similarly firms that are profitable are more likely to fulfill their targets? I firstly summarize my three key findings and then discuss implications from a theory and policy perspective as well as limitations and avenues for future research.

1) Targets lead to initial increases in diversity; however, these may not be sustained over time:

My analysis shows that ambitious targets are associated with an up to four times higher likelihood of an increase in diversity over the 2-year and the 1-year horizon than targets which are not ambitious. This is in line with past reasoning suggesting that targets are indeed effective in increasing gender diversity, especially if they are ambitious. The picture, however, is more differentiated: my results also show higher effect sizes and significance levels over the 1-year horizon than over the 2-year horizon implying that increases in diversity may not be fully sustained over time. While a significant number of firms appoint female executives within a year of target setting, many firms also seem to be unable to retain board gender diversity. This underlines the need to supplement targets with supporting structural measures that enable retention of female executive board members e.g., work-family programs and general diversity management programs.

2) Targets are more effective in increasing gender diversity among profitable firms:

The need to supplement demand-side measures with structural supply-side measures assumes that firms are willing and able to undertake costly changes and hence provides a segue into my second key finding. I look at firm profitability as a boundary condition for the relationship between ambitious target setting and actual increases in diversity. I find that this relationship is positive and limited to profitable firms. I do not find any direct evidence of a glass cliff effect in my context of gender targets.

Results suggest that profitable firms are more likely to implement ambitious gender targets than those less endowed with resources, supporting the perspective that profitability may serve as implementation capacity and therefore replicating previous research (Christensen et al. 2013; Dietz et al. 2019) in the field of gender interventions. Firms with more resources at their disposal may be able to approach gender diversity more holistically through resource intensive long-term structural initiatives such as the hiring of diversity professionals or the setup of mentoring schemes rather than opportunistic short-term appointments.

3) Targets without a minimum threshold are unlikely to move the needle

Despite being voluntary in nature, the German gender target leads firms to signal mostly truthfully. However, much of the truthful signaling is driven by firms that openly admit they are not planning to increase gender diversity on their executive boards. In the absence of a minimum threshold, mean female executive board representation in my sample went from 4% to 6% between 2015 and 2018 – far away from rates of more binding regulation in countries such as Norway and far away from meaningful minority representation as outlined by past research (Kanter 1977). At the same time, the share of firms without female executive directors merely fell from 85% to 78% and almost on par with the share of firms which set target

ambitions of zero or their status quo representation. While ambitious targets may lead to marginal improvements, target regulation without a minimum threshold may not lead to ambitious target setting in the first place.

From a policy perspective, a lack of target ambition could certainly be addressed by a higher degree of coercion e.g., a minimum (above zero) gender target threshold and / or sanctioning for unfulfilled targets or even the threat of mandatory measures (Mensi-Klarbach et al. 2019) to avoid circumventing by firms (Lim and Tsutsui 2011). This kind of coercion may achieve female representation beyond token level through increased accountability and goal commitment. However, results of my study also suggest that expanding focus beyond merely demand-side oriented strategies should be part of long-term efforts to increase and retain women on executive boards. Research on supply-side measures such as formal diversity functions, mentoring, network building etc. addresses relevant ideas that should be part of a future policy agenda (Gabaldon et al. 2016; Dobbin et al. 2007).

From a theoretical perspective, my empirical findings have implications for signaling theory in the gender context. I show that signaling of intent can lead to subsequent signaling of quality. I show that the notion of aspirational talk as performative in the gender diversity context may be especially true for firms that are endowed with resources. While I do not find evidence that firms in more precarious situations use aspirational talk to deceive, my results imply that such firms may not see any benefit in expressing their intent to address seemingly soft issues such as gender diversity at all.

Given the relative uniqueness of the German gender target, I acknowledge several limitations and resulting avenues for future research for this study. Firstly, my methodology is based on

secondary data and, as such, does not allow for an investigation of causal relationships at a deeper level. A supplementary mixed-method analysis of firms' communications around target setting as well as management interviews or even documentations of board meetings could shed light on the intentions behind target setting. Furthermore, an analysis of the type of appointments and female career journeys following target setting could address the distinction between policy-practice decoupling, the context of this paper, and means-end decoupling to see whether target fulfillment leads to tokenistic appointments or to actual female empowerment. Another important consideration to be tested for in the future is the type and magnitude of stakeholder pressure. While in my study I controlled for industry-level differences, a more differentiated analysis will shed light on potential goal conflicts faced by firms with a diverse stakeholder base. From the point of view of implementation capacity, future research could assess the influence of more targeted measures of implementation capacity such as firms' diversity budgets as well as their change over time.

Secondly, the limited time frame and number of firms subject to the quota along with the overall low female representation in German executive boards limits the variance to be analyzed. Decoupling could be studied in shifting institutional environments as proposed by Bromley and Powell (2012) e.g., by comparing progress in female representation before the introduction of the target, during the target phase and potentially after future changes in regulation as has been done in other quota constellations such as by Wang and Kelan (2013) and Mensi-Klarbach et al. (2019).

Finally, cultural and institutional aspects other than the quota regulation itself may influence firm behavior on signaling of intent and female appointments. While this study is focused on the German market, the study of quotas that apply to firms from different institutional or

cultural backgrounds may be worthwhile. Examples could be samples of firms listed in indices that have diversity requirements in places such as the NASDAQ which presented a diversity proposal in late 2020.

From a practical perspective, I provide an empirical example of firm responses to self-determined targets which will prove insightful for regulators. I point out ways to improve regulation to ensure a substantial shift away from decoupling and ceremonial target adoption towards female empowerment through the combination of supply and demand-side measures. This should be food for thought for all firms that have previously considered only one side of the coin or neither.

To close off this study, I take a step back and remind the reader that the scientific questions discussed in this paper solely focus on the study of demand-side measures to increase gender diversity. It is important, however, to recall that in addition to demand-side measures firms must foster a sustainable pipeline of highly qualified female talents. After all, a successful holistic gender policy as a quality – and not first and foremost a signal – should make the term “quota woman” obsolete, a primary motivation for the research in this paper.

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Paper III

More diversity, better equality – do self-determined gender targets affect perceptions of equality within firms?

Abstract

This paper investigates whether gender targets for the executive board set by firms are associated with employees' perceptions of equality. To conduct this quantitative empirical study, a unique dataset of 38,460 employee reviews recorded from 2016 to 2020 for 68 German firms that reported gender targets is used. Statistical analyses are run through a GEE population-averaged model. Results suggest that gender targets are only associated with higher levels of perceived equality among employees if ambitions exceed a ratio of 1:5 or around 20% and are followed by a female appointment. Meanwhile, irrespective of target setting, female executive board representation is positively associated with employees' equality perceptions. This work contributes to research on gender policy by providing a first quantitative study on equality perceptions following gender target setting and by introducing employee reviews as a new data source to the field of gender interventions.

Keywords: *Gender diversity, voluntary target, perceived equality, employee reviews, executive board female representation*

1. Introduction

More than 70% of MSCI firms subject to gender quotas reach the hallmark of 30% female board representation compared to a mere 20% of those that do not fall under any quota regime (MSCI 2019). While gender quotas mechanically lead to a narrowing of the gender representation gap (Sojo et al. 2016; Wang and Kelan 2013), they are perceived as unfair by many who consider them reverse discrimination (Zehnter and Kirchler 2020; Mors and Wiersema 2016; Kirsch 2017). In the light of this criticism, enquiry on gender interventions has moved beyond its focus on mandatory quotas towards alternatives such as voluntary representation targets and reporting requirements. These interventions give firms more leeway to set and own their individual agendas in pursuit of gender equality (Klettner et al. 2014). To understand whether they constitute a cultural shift within organizations, research needs to assess to what extent targets and reporting requirements are perceived to be equitable.

Past research posits that gender targets, especially if they abide by the principles of goal setting theory i.e., high specificity and ambition (Locke and Latham 2006, 2002) can incite a gradual cultural shift in an organization by providing women with equality of access to positions and by reducing overt discrimination (Klettner et al. 2014; Mensi-Klarbach et al. 2019; Seierstad and Opsahl 2011). Yet, firms may face a dilemma when implementing gender policy interventions. While such policies are perceived as necessary by both male and female employees, allegations of preferential treatment based on gender make it difficult for women to gain acceptance (Zehnter and Kirchler 2020) and thus hinder a sustained shift towards more egalitarian organizational cultures. Resentment is often based on grounds of reverse discrimination and supposed decrease in overall qualification (van den Brink and Stobbe 2013).

Experiments, however, suggest that assumptions of diminished qualification following gender policy interventions are ill-founded: benefits from increases in the number of qualified female candidates for a role that result from the imposition of gender policy exceed the potential cost of the respective intervention (Niederle et al. 2013). Empirical evidence from the Norwegian gender quota for corporate boards further substantiates this discovery: compared to male directors, female directors had more qualifications before and after the introduction of the quota (Wang and Kelan 2013). Moreover, business decisions by Norwegian management teams after the quota introduction were not less profitable (Matsa and Miller 2013). Despite resentment and notions of unequal treatment, there seems to be little empirical ground for a decrease in qualification after gender interventions are imposed.

This apparent contradiction between board qualification post intervention and resentment based on reverse discrimination highlights the need to understand when policy intervention contributes to the perception of equality. While research has investigated outcomes of gender-

related diversity interventions from several angles, such as gender representation, financial outcomes and workplace relationships (Seierstad and Opsahl 2011; Sojo et al. 2016; Wang and Kelan 2013; Ahern and Dittmar 2012; Ip et al. 2019; Labelle et al. 2015), employees' perceptions of equality after self-determined target setting have not been studied. Moreover, compared to existing research on mandatory quotas, research on self-determined targets as a specific type of intervention comes with added complexity. Employees' reactions to targets must be divided into the reaction to the target itself and the reaction to potential subsequent female appointments.

Target setting and follow-through represent different types of signals from a *signaling theory perspective* (Connelly et al. 2011). Female representation and appointments are "*quality signals*" which firms use to showcase their adherence to social norms of supporting gender equality (Miller and del Carmen Triana 2009). The need to attract and retain female talent makes appointing female executive directors costly for the firm, which in turn makes the signal credible (Cohen and Dean 2005; Certo 2003; Lee 2001). Gender targets, on the other hand, represent "*intent signals*" which express a firm's intention to achieve a certain gender representation in the future. Unlike female appointments, targets do not incur direct cost and as such remain mere statements or "*cheap talk*," which makes them less credible than quality signals *ceteris paribus* (Heil and Robertson 1991; Austen-Smith and Banks 2000). Given the differences in credibility, perceptions of equality of both signal types may differ among employees. Empirical studies assessing these effects are a missing puzzle piece in the research on gender equality interventions (Seierstad et al. 2020; Seierstad 2015). This study therefore addresses the question "*Do firms' gender targets for their boards and subsequent female board appointments affect employees' perceptions of equality?*".

Addressing the research question is important; firstly, to introduce the employee perspective to the field of gender equality interventions since employees' perceptions have been linked to relevant outcomes such as job satisfaction and knowledge sharing (Hofhuis et al. 2016). This will be a step towards a more differentiated and stakeholder-focused assessment of the effects of gender interventions (Hillman 2014). Secondly, it is important for practitioners and researchers to better understand the potential trade-offs of gender target setting and subsequent follow-through, namely perceived inequality (Acker 2006), and how to avoid them. Finally, research on gender interventions beyond the pioneering example of the Norwegian quota (Wang and Kelan 2013; Ahern and Dittmar 2012; Matsa and Miller 2013) often lacks empirical grounding and hence requires testing in the "real world".

To investigate the relationship between targets and employees' perceptions of equality, I derive working hypotheses based on *signaling theory* as well as findings from research on *affirmative action*, specifically gender interventions. As a research setting, I use the natural experiment of the German voluntary gender target introduced in 2015. I chose this setting because Germany requires firms to set self-determined female representation targets without a reference threshold. This allows for an assessment of employee reactions to targets that are entirely self-determined by firms. I assess employee ratings on equality from the a online job portal and match them with firm-level data of board gender composition and executive board gender targets. The time horizon spans reviews from 2016 through 2020 for 68 publicly traded firms. The final dataset comprises 340 firm-year observations on which a GEE population-averaged model is constructed for analyses.

This study's contributions are three-fold. Firstly, I extend theory on two dimensions. I add to theory on outcomes of gender interventions by providing a perspective on equality outcomes

of targets. I also bring together two branches of signaling theory, *intent signals* and *quality signals*, into one study. Secondly, I provide quantitative empirical evidence of the effects of self-determined gender targets as a valuable addition to the existing theoretical reasoning and qualitative evidence established by past research. Lastly, I pioneer employee reviews, which are increasingly used to observe employees' perceptions of different aspects of firm culture across years (Huang et al. 2015; Green et al. 2019) in the field of gender studies, as a promising data source for future research.

In the next section, working hypotheses on the relationship between gender targets and employees' perceived equality are derived based on signaling theory and existing work on affirmative action. Subsequently, the research methodology applied for hypothesis testing is explained. After reporting the results of the statistical analyses, implications and avenues for future studies in the field of diversity targets are discussed.

2. Theory

2.1. Theoretical background

Gender diversity interventions

Gender targets are a demand-side diversity intervention that establishes goals for the expected representation of women in leadership positions. As such, targets are often not associated with enforcement or sanctioning (Sojo et al. 2016). Based on goal setting theory, researcher posits that higher gender targets are more effective in increasing female representation (Locke and Latham 2002, 2006). Furthermore, targets are more effective when accompanied by reporting requirements as accountability mechanisms. In the case of gender targets, policy threats to move from voluntary targets to mandatory quotas also increase target effectiveness (Sojo et al. 2016; Mensi-Klarbach et al. 2019). Targets foster a deeper, albeit more gradual, cultural shift towards higher gender diversity than mandatory quotas in organizations as they allow firms to set their individual agenda and own their targets instead of merely complying with a mandatory quota determined by the government (Klettner et al. 2014; Seierstad and Opsahl 2011).

Signaling theory in the context of diversity interventions

While gender targets primarily constitute interventions to narrow gaps in representation between genders, they can also be viewed as a signal that an organization sends to convey that underrepresented groups are treated procedurally fairly (Kaiser et al. 2013). Actual female representation on corporate boards is often viewed from a signaling perspective (Miller and del Carmen Triana 2009). Signaling theory posits that firms attempt to overcome information asymmetries between themselves and outsiders by disseminating signals of their unobservable qualities (Spence 1973). These “*quality signals*” are costly to produce, which makes it prohibitively expensive for firms that do not possess the underlying quality to produce a signal (Connelly et al. 2011; Spence 1973). In the context of gender diversity, board gender

composition is seen as a signal which a firm disseminates to inform outsiders that it is abiding by societal norms such as fostering gender equality and that it is able to attract and retain female talent (Connell 2005; Miller and del Carmen Triana 2009).

Signal outcomes are determined by signal characteristics such as their credibility and observability (Connelly et al. 2011). Signal credibility depends on honesty and fit of the signal i.e., the extent to which a firm possesses the underlying quality it signals to have (Arthurs et al. 2009; Busenitz et al. 2005). Signal credibility is enhanced by the cost incurred to produce the signal (Cohen and Dean 2005; Lee 2001; Certo 2003) and using different, complementary signals (Balboa and Martí 2006). Signal observability, on the other hand, describes the strength of a signal based on its visibility and intensity (Connelly et al. 2011). Signals with low observability and credibility are less effective in conveying the intended message to outsiders (Goranova et al. 2007).

In contrast to actual gender representation, gender targets express a firm's intention to achieve a certain female representation in the future. Thus, targets are better characterized as so-called "*intent signals*". Intent signals are indications of future actions that are sent to outsiders purposefully (Connelly et al. 2011; Heil and Robertson 1991). As opposed to quality signals, producing an intent signal is not necessarily costly. This makes intent signals less credible and difficult to interpret since they may be false (Heil and Robertson 1991; Austen-Smith and Banks 2000). In the context of gender targets, firms do not incur substantial cost from setting a target in the absence of sanctions. As a result, even firms that do not have the quality or actual intention to hire women into their boards may claim to intend to do so and set targets accordingly.

For self-determined targets the distinction between the target itself as an intent signal and the status of subsequent fulfillment is important. Firms may choose to send signals about future intentions that they do not fulfill and hence engage in so-called “*decoupling*” (Bromley and Powell 2012; Christensen et al. 2013). Signals that are not fulfilled over time may incur penalties such as damage to a firm’s reputation (Heil and Robertson 1991; Chung and Kalnins 2001). Likewise, a misalignment between visible lack of board gender diversity, as one of the most easily observable board characteristics (Brammer et al. 2009), and intentionally communicated diversity signals such as gender targets is perceived as a so-called “*diversity mixed message*” (Avery and Johnson 2008; Windscheid et al. 2016a). Such diversity mixed messages have low signal consistency and hence low credibility (Heil and Robertson 1991) and compromise a firm’s image by diminishing its perceived behavioral integrity (Windscheid et al. 2016b). Thus, there may be a negative impact on perceptions of a firm’s gender diversity efforts and equality if targets are not met over time.

Diversity interventions and equality perceptions

Equality constitutes the absence of “*systematic disparities between participants in power and control over goals, resources, and outcomes; workplace decisions such as how to organize work; opportunities for promotion and interesting work; security in employment and benefits; pay and other monetary rewards; respect; and pleasures in work and work relations.*” (Acker 2006, p. 443). Equality is a well-discussed theme in gender literature including, but not limited to accounts on the wage gap between men and women, female underrepresentation in leadership and time to career advancement (Stamarski and Son Hing 2015; Terjesen and Sealy 2016). The matter of equal treatment of all genders has been approached from an ethical viewpoint, but also from the potential utility that derives from the existence of diverse perspectives in organizations that are open toward and appreciative of individual differences

(Terjesen and Sealy 2016; Hofhuis et al. 2016; Kirsch 2017; Seierstad 2015). Organizations benefit most from diversity when all groups regardless of background are treated equal and justly (Hofhuis et al. 2016). As I refer to the level of individual justice, naturally, the perception of the equality of treatment in an organization may differ across members. Therefore, I will use the term “*Perceived Equality*” in the remainder of this paper.

While I establish that targets may lead to increases in gender diversity, employees’ perceptions whether an organization that sets targets in an equitable environment are more complex. There is often general support for gender diversity even among male organizational members mostly based on the utility as exemplified by the business case for diversity and ethical considerations (Sharp et al. 2011; van den Brink and Stobbe 2013). Yet, there is resentment against demand-side diversity interventions across genders based on notions of reverse discrimination or marginalization and tokenism (Matheson et al. 1994; Sharp et al. 2011; van den Brink and Stobbe 2013; Williams et al. 2014; Zehnter and Kirchler 2020; Seierstad 2015).

While gender targets for female representation lower overt discrimination (Klettner et al. 2014), it remains questionable whether they solve actual issues of inequality, especially if they are not followed by female appointments (Williams et al. 2014). The mere existence of diversity measures such as targets may create so-called “*illusion(s) of fairness*” which could even hinder the detection of discrimination within an organization up to an extent where discrimination claims come to be seen as unjustified (Kaiser et al. 2013). Similarly, higher female representation in the upper echelons may decrease disturbance with other types of inequality through overgeneralization of female access to the top level (Georgeac and Rattan 2019). In consequence, policies targeting individual diversity chapters may violate the principle of equality of differences (Williams et al. 2014). While targets may signal an organization’s

attempt to foster equality, they may not necessarily create perceptions of equality to the same extent among all different members of the organization.

2.2. Hypotheses

Gender targets and perceived equality

I derive the association between gender targets and perceived equality among employees based on two assertions: Targets are relevant signals and they convey a firms' commitment to diversity.

Firstly, I argue that voluntary targets are perceived as a relevant signal despite their characterization as intent signals rather than costly quality signal. Gender targets are disclosed by firms in their annual communications, which makes them subject to public scrutiny. Therefore, there are reputational costs attached to both target setting and target fulfillment. These reputational costs increase firms' accountability and hence make the target as a signal more interpretable for receivers (including employees) compared to mere claims that do not need to be disclosed.

In a similar manner, requirements to publicly report target fulfillment as well as the specified time frame within which targets must be fulfilled further increase the general quality of the signal. Therefore, despite being intent signals, I argue that self-determined gender targets will not be disregarded as mere "cheap talk" that does not affect the outcomes of firms' signaling activities.

Secondly, I argue that self-determined targets for female executive board representation are interpreted as signals expressing whether firms commit to and intend to foster diversity in the

future. Low or even zero targets will be perceived as unjust since the need for representation of diverse genders is a generally agreed upon principle (van den Brink and Stobbe 2013). As a result, firms with low or zero targets are perceived to breach the principle of equality of genders, which may lead to negative perceptions of equality.

In a similar manner, firms with higher targets signal their commitment to above zero female representation on their boards. By doing so, they do not only signal their adherence to the social norm of diversity, but also that they are capable of understanding and serving the needs and demands of female stakeholders (Miller and del Carmen Triana 2009; Hillman et al. 2007). As a result, they serve both the ethical and utility argument behind equality and should be able to achieve higher perceived equality than their peers with less ambitious targets. While targets may still be shy of meaningful representation of 30% or above (Kanter 1977), I argue that higher targets will be interpreted as higher commitments to gender diversity and hence should be associated with higher perceived equality.

Accordingly, I argue that targets are both a relevant signal that is not merely disregarded by employees and a measure of a firm's commitment to gender diversity. Such commitments to diversity should be associated with higher perceived equality leading to the following hypothesis:

H1: Higher targets for female executive board representation are associated with higher perceived equality among employees.

The moderating role of female appointments

While I predict a generally positive relationship between targets and perceived equality based on signaling theory, credibility and observability of the target presents relevant context factors. Firstly, if evidence of costly efforts to increase gender diversity in the form of subsequent female appointments is missing as a complementary signal, the credibility of targets may be undermined. In addition, ambitious targets may create an “illusion of fairness” among members of the upper echelons of the organization. Such an illusion caused by one high-profile diversity measure can lead to impressions, that the organization is generally fair. As a result, an organizational environment where claims of discrimination are regarded as illegitimate may develop (Kaiser et al. 2013). Paradoxically, overall perceptions of equality may be compromised as a result of such illusions of fairness despite positive diversity intent expressed by the firm through its gender target.

Both missing complementary signals and potential resulting illusions of fairness constitute a disconnect between the diversity environment employees experience and the firm’s signal that diversity is valued and promoted. This decoupling between the announced policy and the observable practice, can lead to perceived unfairness (Avery and Johnson 2008). Thus, ambitious targets are more credible if they are followed through while the opposite should be true if they are not.

Secondly, apart from signal credibility, targets may attract more receiver attention if they are more observable (Connelly et al. 2011). Target observability may increase if targets are followed by one or multiple complementary quality signals since this increases signal frequency (Janney and Folta 2003; Balboa and Martí 2006). Again, a subsequent female executive board appointment may make firms’ self-determined targets more salient. Salient

signals may be more easily observable and hence recognizable. Consequently, they may invoke countersignals from the receiver, in this case equality ratings by employees.

Given the agreement across genders that diversity is beneficial for an organization (Sharp et al., 2012; van den Brink & Stobbe, 2014) I believe that appointments should be observed as favorable in terms of fostering equality if a firm had previously signaled an ambitious intent to foster diversity. For firms that have communicated little diversity management efforts and hence have engaged in diversity signaling with low frequency the opposite may be true. Lower frequency of signals decreases their observability and the likelihood of correct interpretation (Filatotchev and Bishop 2002). As a result, in the absence of frequent signals that a firm is actively trying to attract and train qualified women through supplementary measures such as appointments or mentoring, targets may be interpreted as mere reverse discrimination even if the intent is truthful.

Based on reasoning about credibility and observability, targets should be more likely associated with positive perceptions of equality if they are sufficiently high and followed through with appointments.

H2: Female appointments after target setting positively moderate the association between targets for female executive board representation and perceived equality among employees.

Female executive board representation and perceived equality

Like female appointments, overall female executive board representation irrespective of target setting constitutes a quality signal of a firm's ability to attract women into top-level positions. The higher the number of female directors, the higher the chance that a firm either has enough internal supply of qualified women or that the firm provides an attractive enough environment

for qualified outside hires to accept a job offer. Regardless of internal or external talent pool, female representation is likely the result of successful diversity management through measures such as mentoring, networks and initiatives supporting family friendliness (Dobbin et al. 2007), which in turn lead to perceptions of equal opportunity.

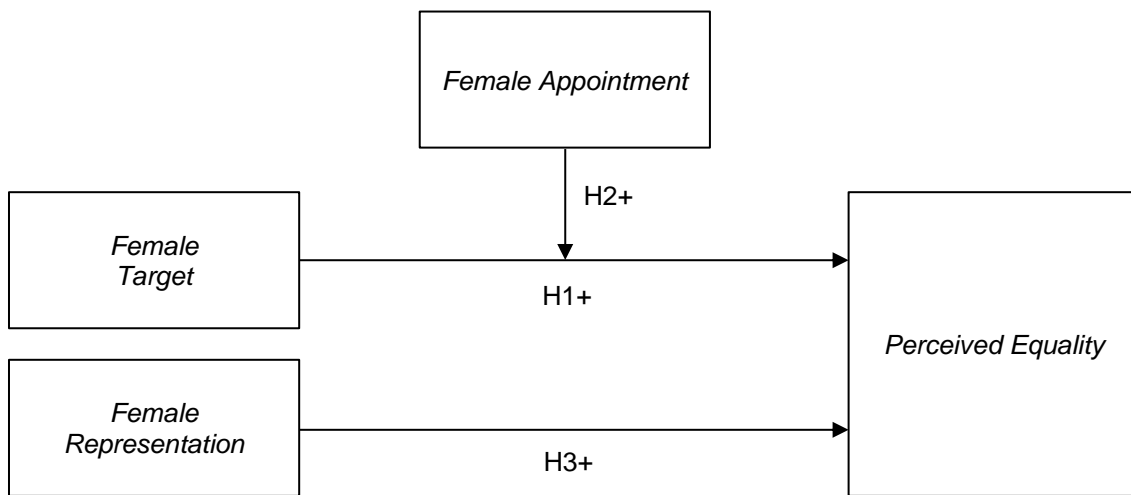
Female representation at the top-level tends to trickle-down in the organization via different mechanisms such as the overall signaling of advocacy, availability of role models and increased efforts by senior female leaders to foster gender equality (Kirsch 2021; Gould et al. 2018). Firms with higher female representation on the board are perceived to be more ethical by outsiders (Larkin et al. 2012). Over time, exposure to female leaders reduces biases and increases perceptions of female leadership effectiveness (Beaman et al. 2009; Seiderstad 2015). Similarly, higher female board representation and in consequence higher female representation throughout the organization should be positively related with perceived equality among employees.

The link between female representation and perceived equality can be further accentuated through overgeneralization. Perceptions about the ability of a whole social group to advance within an organization can be altered through the success of one individual in that group (Georgeac and Rattan 2019). This is enabled through exemplar-based information processing (Kahneman and Miller 1986), which leads to incidental judgements about social groups e.g., based on salient members (Bodenhausen et al. 1995). Accordingly, the presence of a woman on the executive board can lead to the general perception of equality within the organization, regardless of existing discrimination on other dimensions such as against racial minorities or outside of the board (Georgeac and Rattan 2019). While such crowding out of other minorities in favor of gender equality is harmful for the notion of equality of differences, it may

paradoxically still lead to overall higher perceptions of equality. Summarizing these points, I hypothesize that:

H3: *Female executive board representation is positively associated with perceived equality among employees.*

2.3. Overview of research model



3. Methodology

3.1. Empirical setting: the German voluntary self-determined target

The empirical setting of the German female target for executive boards which was first imposed by the federal government in 2015 is used as context for hypothesis-testing. The German regulation is the only one the author is aware of that lets firms determine their own quantifiable targets without giving a minimum reference threshold. Therefore, the German setting provides a unique natural experiment to measure the relationship between firm targets and employees' perceived equality. Firms that are publicly traded or codetermined must set a target ambition for the female representation on their executive boards. Targets had to be set for the first time by the end of 2015 and then for a second time end of 2017 with subsequent revisions at least every five years. While targets cannot be lower than status quo representation for firms with fewer than 30% women on the executive board, there is no minimum-threshold. Furthermore, an annual reporting requirement of the target and the status quo representation is in place, yet, there are no sanctions for not reporting or fulfilling targets (Bundesanzeiger 2015). With its low degree of coercion, the German executive board gender target is characterized as a voluntary demand-side intervention (Mensi-Klarbach and Seierstad 2020).

3.2. Sample

A unique dataset composed of 38,460 reviews written by employees of 68 German firms over the period from 2016 to 2020 translates into 340 firm-year observations and is deployed for statistical analyses. Reviews were gathered from a online job portal in the end of 2020 and enriched with firm targets published in the end of 2015 and 2017 as well as data on executive board composition and additional secondary data corroborated from the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, SNL, annual reports and corresponding firm communications. Apart from data availability, firms qualified for the final

sample based on two criteria: firstly, they were traded in the Dax30, MDax or SDax, the most relevant German stock indices, on 31.12.2015; secondly, there were more than five employee reviews with a rating for the category “*Gleichberechtigung*¹¹” available for every individual firm year on the online job portal. I choose this threshold to avoid results driven by idiosyncratic employee opinions but am also wary of introducing a source of sample selection bias by setting the threshold too high. Observations were available for all firms across all sample years to ensure a balanced sample in my final dataset.

3.3. Measures

Dependent variable

Perceived Equality:

The dependent variable *Perceived Equality* is measured as the mean of all ratings in the category “*Gleichberechtigung*” on the platform recorded in a specific year for a respective firm.

Independent variables

Female Target:

Female executive board target share (in the following abbreviated as “*Target*”) is measured as the targeted percentage for female representation on the executive board, published by a specific firm in late 2015 for the time horizon from 2016 to 2017 and the target published in late 2017 for the horizon from 2018 to 2020.

¹¹ “*Gleichberechtigung*” (German for “equality”) is rated on a scale from 1 to 5 with 1 being the lowest score and 5 the highest score.

Female Representation:

Female executive board representation (in the following abbreviated as “*Representation*”) is measured as the mean percentage of female executive directors on the executive board at the date of a corresponding employee review for a specific firm-year.

*Moderator variable***Female Appointment:**

Female executive board appointment following target setting (in the following abbreviated as “*Appointment*”) is a dichotomous variable coded 1 if the mean number of female appointments between target setting and employee review date for a specific firm year is above 0. It is coded 0 if there were no female appointments between target setting and any relevant employee review in a firm-year.

Control variables:

Firm age measured in years since establishment is included to control for inertia regarding target setting and female appointments (Hillman et al. 2007). In addition, firm size measured as total revenues in a given year controls for considerations of institutional pressures and isomorphism (DiMaggio and Powell 1983). To control for the financial situation which might affect overall employee satisfaction, profitability measured as the return on assets (RoA) as well as leverage measured as the debt-to-equity ratio in a given year are included (Adams and Ferreira 2009; Hoobler et al. 2016; Huang et al. 2015). Furthermore, executive board size controls for relative visibility and influence of individual board members and considerations of group composition (Hillman et al. 2007; Kanter 1977). The model also controls for the mean number of male appointments between target announcement and review date to rule out general effects of executive appointments on employee ratings. Finally, industry female share is

included to account for the different shares of women in different industries (Hillman et al. 2007) as well as a dummy variable to control for year effects (Knippen et al. 2019).

3.4. Analyses

A GEE population-averaged model with Huber-White standard errors and an auto-regressive correlation structure to account for correlation within responses forms the basis for statistical analysis (Ballinger 2004). Similar to other studies in the field of board gender diversity (Knippen et al. 2019; Hillman et al. 2007; Mensi-Klarbach et al. 2019), this approach is chosen given the lack of variance in *Target*, *Representation* and *Appointment* over time for a high share of observations. Hypotheses are tested individually, and a full model is subsequently constructed.

Continuous variables namely total revenues, number employees, firm age, debt-to-equity ratio and return on assets are winsorized at the 1% and 99% level to avoid driving results by outlier values (Yang et al. 2019; Sila et al. 2015; Arena et al. 2014; Green et al. 2019).

4. Findings

4.1. Descriptive statistics

Table 1: Pairwise correlations

	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Mean	SD	Min	Max
(0) <i>Perceived Equality</i>	1.000											3.7	0.5	2.0	4.8
(1) <i>Representation</i>	0.212*** (0.000)	1.000										7.5	11	0.0	50.0
(2) <i>Target</i>	0.169*** (0.002)	0.481*** (0.000)	1.000									11.6	11.9	0.0	40.0
(3) <i>Appointment</i>	0.100* (0.066)	0.317*** (0.000)	0.180*** (0.001)	1.000								0.1	0.3	0.0	1.0
(4) <i>Male appointment</i>	0.050 (0.362)	0.105* (0.052)	0.036 (0.506)	0.222*** (0.000)	1.000							0.5	0.7	0.0	3.0
(5) <i>Board size</i>	0.278*** (0.000)	0.343*** (0.000)	0.217*** (0.000)	0.210*** (0.000)	0.229*** (0.000)	1.000						4.6	2.0	1.9	10
(6) <i>Total revenues</i>	0.253*** (0.000)	0.338*** (0.000)	0.233*** (0.000)	0.267*** (0.000)	0.153*** (0.005)	0.756*** (0.000)	1.000					19.6	28.2	0.2	104.2
(7) <i>Leverage</i>	-0.125** (0.021)	0.059 (0.280)	-0.038 (0.484)	0.165*** (0.002)	0.038 (0.481)	0.024 (0.660)	0.135** (0.013)	1.000				98.8	125.2	0.2	1109.0
(8) <i>Firm age</i>	-0.076 (0.164)	-0.090* (0.097)	-0.035 (0.519)	0.058 (0.283)	0.056 (0.304)	0.083 (0.128)	0.114** (0.035)	-0.118** (0.029)	1.000			93.3	53.8	8.0	209.0
(9) <i>Industry female share</i>	0.052 (0.339)	0.134** (0.014)	0.115** (0.035)	-0.040 (0.458)	-0.018 (0.735)	0.107** (0.050)	0.033 (0.544)	0.046 (0.401)	-0.419*** (0.000)	1.000		0.3	0.2	0.0	0.8
(10) <i>RoA</i>	0.298*** (0.000)	-0.085 (0.118)	-0.077 (0.159)	-0.121** (0.026)	-0.040 (0.467)	0.088 (0.106)	-0.076 (0.164)	-0.337*** (0.000)	-0.199*** (0.000)	-0.068 (0.212)	1.000	3.3	3.9	-13	20.6

*P-values in parentheses under correlation coefficients, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Year dummies excluded*

4.2. Population-averaged model

Table 2: Results population-averaged model

	<i>Model 0: Controls</i>	<i>Model 1: Target</i>	<i>Model 2a: Appointment</i>	<i>Model 2b: Target x Appt.</i>	<i>Model 3 Representa- tion</i>	<i>Model 4a: Full Model w/o Interact.</i>	<i>Model 4b: Full Model w/ Interact.</i>
Control Variables							
<i>Male appointment</i>	0.031 (0.310)	0.031 (0.316)	0.028 (0.370)	0.029 (0.348)	0.028 (0.368)	0.026 (0.398)	0.027 (0.374)
<i>Board size</i>	0.002 (0.922)	0.001 (0.970)	0.001 (0.973)	-0.001 (0.962)	-0.002 (0.928)	-0.002 (0.922)	-0.003 (0.904)
<i>Total revenues</i>	0.004*** (0.003)	0.004*** (0.004)	0.004*** (0.004)	0.004*** (0.001)	0.003** (0.011)	0.003** (0.011)	0.004*** (0.003)
<i>Leverage</i>	-0.000 (0.686)	-0.000 (0.706)	-0.000 (0.627)	-0.000 (0.547)	-0.000 (0.742)	-0.000 (0.704)	-0.000 (0.609)
<i>Firm age</i>	-0.000 (0.676)	-0.000 (0.692)	-0.000 (0.672)	-0.000 (0.704)	-0.000 (0.815)	-0.000 (0.802)	-0.000 (0.814)
<i>Industry female</i>	0.109 (0.566)	0.105 (0.578)	0.117 (0.532)	0.129 (0.488)	0.092 (0.622)	0.098 (0.595)	0.114 (0.538)
<i>RoA</i>	0.033*** (0.000)	0.033*** (0.000)	0.034*** (0.000)	0.035*** (0.000)	0.034*** (0.000)	0.035*** (0.000)	0.035*** (0.000)
Independent Variables							
<i>Target</i>		0.001 (0.581)		-0.001 (0.770)		0.000 (0.885)	-0.002 (0.398)
<i>Appointment</i>			0.076** (0.041)	-0.130 (0.126)		0.040 (0.326)	-0.150* (0.077)
<i>Target x Appointment</i>				0.012*** (0.005)			0.012** (0.013)
<i>Representation</i>					0.005*** (0.001)	0.005*** (0.005)	0.005*** (0.007)
<i>Observations</i>	340	340	340	340	340	340	340
<i>Wald Chi2</i>	58.57	58.48	87.23	90.96	72.3	90.29	97.6
<i>Prob > Chi2</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*P-values in parentheses under coefficients: *** $p < .01$, ** $p < .05$, * $p < .1$; Year dummies included, but not reported*

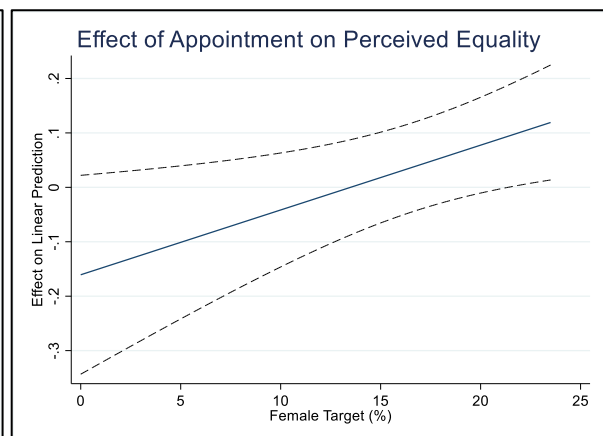
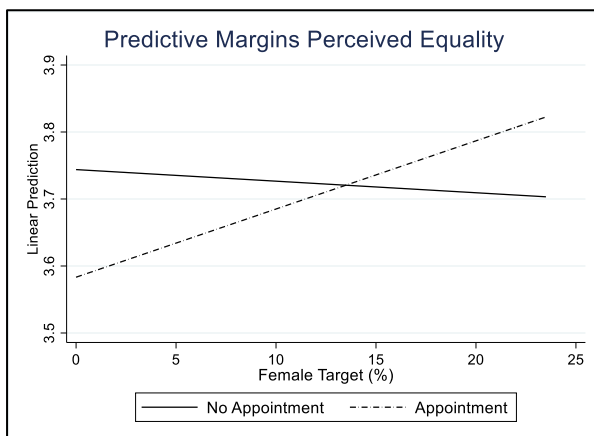
Descriptive statistics as well as the results of the GEE models are reported in *Table 1* and *Table 2*. For hypothesis-testing, firstly individual models are constructed including all controlling variables. The respective dependent variables are tested in isolation of each other and then combined in a full model to account for total effects.

Firstly, to test H1 *Model 1* is constructed including *Target* as independent variable. Results do not suggest support for the hypothesis that *Target* is positively associated with *Perceived Equality* ($p=0.581$; $\beta=0.001$).

Secondly, H2 is tested by constructing *Model 2b* which includes an interaction term between *Appointment* and *Target*. There is a significantly positive interaction between both variables ($p=0.005$; $\beta =0.012$) and therefore support for H2. I plot the interaction as well as the marginal effect of *Appointment* on *Perceived Equality* at different levels of *Target* in *Graph 1* as well as *Graph 2*.

Graph 1: Predictive margins of interaction Target and Appointment

Graph 2: Marginal effects of Appointment at different Target levels



The predictive margins in *Graph 1* show that *Target* followed by *Appointment=0* before the review date is slightly negatively associated with *Perceived Equality*. *Target* followed by *Appointment=1* is associated with higher *Perceived Equality* the higher the value of *Target*. *Appointment=1* after *Target=0* is associated with relatively lower *Perceived Equality* than *Target=0* with subsequent *Appointment=0*.

Graph 2 shows that marginal effects of *Appointment=1* after target setting are negative if *Target* is lower than approximately 14% which is equivalent to a target of one woman among seven board members. For higher targets, the marginal effect of a female appointment on *Perceived Equality* is positive. Considering confidence intervals, however, marginal effects are only significant for *Target* above approximately 20% at a 95% confidence level. This indicates that the positive effect of *Appointment=1* is only meaningful for *Target* translating to at least a female representation of one in five board members. For these targets, female appointments have a positive effect on the relationship between *Target* and *Perceived Equality*. I conduct simple slope tests which are significant ($p=0.017$), confirming that the simple slopes of *Appointment=0* and *Appointment=1* are significantly different.

Finally, to test H3 *Model 3* is constructed including the dependent variable *Representation* as well as all relevant controlling variables. The results indicate support for the hypothesis that *Representation* is positively associated with *Equality* ($p=0.001$; $\beta =0.005$).

I further substantiate findings by constructing *Models 4a* and *b* as full models with and without the interaction term. Both models support the findings from above in magnitude, direction and significance.

4.3. Robustness checks

Several analyses are conducted to ensure the robustness of results. Firstly, potential sources of endogeneity, namely omitted variable bias, selection bias, and reverse causality are addressed. I construct a fixed effects model, which allows to hold constant changes within firms over time and hence reduce the chance of omitted variable bias. The fixed effects model shows largely similar results to the GEE model in significance, magnitude and direction for all three hypotheses.

To control for potential selection bias stemming from the exclusion of firms with few or no employee reviews on equality, a *Two-Stage Heckman Correction* is conducted. The first-stage selection model shows that the number of employees is a valid instrument to predict selection into the sample. The *Inverse Mills Ratio* (“*IMR*”) is calculated in a next step and included in the second stage main model. Since the *IMR* proves insignificant ($p > 0.1$) results are not driven by sample selection based on the number of employee reviews available.

Further, models are rerun with a subsample of firm-year observations that only accounts for firms that were part of the Dax30, MDax and SDax indices through 2015 to 2020 with the same results in direction, magnitude and significance. In addition, results are validated by limiting observations to firm-years with at least 15 reviews, a threshold applied in similar studies (Green et al. 2019).

Lastly, reverse causality is mitigated since female representation and potential female appointments are measured after target setting and before the respective employee review dates.

Besides endogeneity, several more general concerns of robustness including the specification of the correlation matrix as well as multicollinearity are addressed. Firstly, the QIC is used to confirm that the deployed third-degree autoregressive structure is adequate compared to other structures such as exchangeable or independent for the GEE model (Cui 2007). To rule out that coefficients are inflated due to multicollinearity, firstly the *Variance Inflation Factors* (“VIF”) are calculated. They do not exceed 2.79 and should hence be within generally applied boundaries. To further substantiate that multicollinearity is not an issue, Kalnins’ three-step approach and mitigations are applied, again ruling out concerns (Kalnins 2018).

5. Discussion

This study's aim is to understand the implications of firms' gender targets and subsequent follow-through from the perspective of employees' perceived equality. The results teach three major lessons.

Firstly, targets by themselves are not related to any changes in perceived equality for better or worse. Firms will neither be able to create positive perceptions of equality by merely setting ambitious targets for female representation nor will they suffer from perceptions of reverse discrimination. They may, however, be able to openly state lacking ambition to increase female representation without employees perceiving the environment as unequitable.

Secondly, firms can improve their employees' perception of equality by doubling down on targets and female appointments. Firms that start off signaling low ambitions will not be able to see their employees' perceptions of equality increase, even if they appoint a female executive director at a later point in time. Interestingly, for targets that are followed by a female appointment to have an impact, they only need to be around 20% or roughly one in five female members on the executive board in this study. This is well below the threshold of one in three for female representation often cited as the tipping point for meaningful representation of a minority subgroup within a group (Kanter 1977). There seems to be a discrepancy regarding what is perceived as a positive signal towards equal gender representation by employees i.e., a target of one in five women on the executive board followed by a female appointment on the one hand and actual meaningful female representation beyond one in three on the other hand.

Finally, female board representation as an expression of a firm's ability to attract women and to adhere to social norms is associated with higher perceived equality. Alternatively, results

could imply that female directors influence decision-making towards a higher focus on diversity climate within organizations. While this study cannot prove causality beyond doubt, results make a strong case that building up structural measures to foster gender diversity pays off.

This study has important implications from several perspectives. From a theoretical point of view, I extend signaling theory by empirically dissecting the difference between quality signals and intent signals. I show that employees do not respond to intent signals without a costly demonstration of the underlying quality when it comes to gender targets. For my specific empirical setting I show that female representation as quality signal can always move the needle, while targets as mere intent signals need to be strong and followed by actual quality signals to have an impact on perceived equality. My extension makes signaling theory more applicable to the increasingly differentiated discourse on gender interventions beyond mandatory quotas towards voluntary targets and reporting requirements. From a methodological point of view, I introduce employee reviews as a promising data source to gender literature. Such reviews are already used in other fields of management research and provide new opportunities, such as measuring corporate culture and employee perceptions.

While my study yields several interesting implications, there are some limitations inherent in the study design that may be addressed by future research. Equality perceptions are subjective and while I try to create a robust measure by using averages across employees, I cannot ensure that every employee rates equality on the same scale and with a focus on gender equality. Furthermore, I cannot guarantee that all respondents in my database were at the time of their review aware of their organizations' respective gender targets.

While I believe in the power of anonymous employee reviews as a data source, both limitations could be addressed in future studies by applying a variety of qualitative designs including experiments. This analysis could also be enriched by a study of the influence of demographic characteristics, prior experience and education as well as the specific types of roles female directors take on after target setting on equality perceptions of employees. From a longitudinal perspective, future research may want to test my results over a longer time horizon as soon as data availability allows for it. Past studies (Seierstad 2015) have suggested that perceptions of the justness of diversity interventions such as the Norwegian quota may change in the long-run along the adoption curve. Lastly, while I was fortunate that the German regulatory setting allowed for this natural case study, perceptions of the justness of diversity interventions such as targets need validation in other national cultures to paint a more detailed picture.

From a practical point of view, I show that firms need to not only set a target, but also recruit female executive board members and vice versa, if they want to instill a cultural shift towards higher perceived gender equality. Further, in the wake of target imposition and under the threat of binding quotas, demand for highly qualified female executives will likely increase and hence firms need to be prepared to offer an attractive workplace to potential recruits. While my setting does not allow for conclusions on any negative effects regarding perceptions of equality from target setting and subsequent hiring, executive boards with low or no female representation might be subject to increasing amounts of backlash in the future.

Although my results seem promising regarding the positive impact of ambitious targets and eventual follow-through, negative side-effects cannot be ruled out. Female representation may well lead to a crowding-out of other diversity chapters such as cultural and social background, sexual orientation and gender identity or disability because of overgeneralization. Practitioners,

both among corporate decision makers and law makers will have to ensure that diversity initiatives and regulation embrace a wholistic understanding of diversity to account for the equality of differences. Targets may have some merit in the pursuit of fostering a gender egalitarian culture, however, they are likely less effective as a first step to promote other types of diversity that are less observable.

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