

# Corporate reporting provides insight into companies' commitment to gender equality

By Anja Kirsch, Virginia Sondergeld, Philipp Alexander Thompson, and Katharina Wrohlich

## ABSTRACT

Many companies in Germany must provide information beyond financial figures in their annual reports. For some years now, legislators have increasingly required information on non-financial aspects, such as the shares of women in leadership positions. Using a quantitative text analysis of annual reports, this second report in the 2023 DIW Berlin Women Executives Barometer shows that the major publicly listed corporations in Germany implement the reporting requirements very differently. Reporting about women and leadership positions increased overall between 2009 and 2020 in line with the requirements. However, there were clear differences in the companies' focus: There is an equality-oriented group of companies that reports extensively about concrete measures to increase the share of women in leadership positions. This group has significantly more women on their supervisory boards than the other group, compliance-oriented companies, which seem to be mainly concerned with fulfilling the legal requirements. Companies' reporting on women and leadership positions is thus an indicator and useful signal to outside stakeholders of how serious companies are about gender equality.

In this second report in the 2023 DIW Berlin Women Executives Barometer, the impact of the changing statutory reporting requirements on the disclosure of the largest publicly listed companies in Germany is analyzed, based on quantitative text analyses of their consolidated annual reports<sup>1</sup> from 2009 to 2020.<sup>2</sup>

## Statutory reporting requirement about women in leadership positions since 2015

Since the introduction of the Equal Participation of Women and Men in Leadership Positions in the Private and Public Sectors Act (*Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst*, FüPoG) in 2015, much has happened in the upper echelons of companies in Germany. There has been a strong increase in the number of women on supervisory boards and an upward trend can also be seen for executive boards.<sup>3</sup> While most public attention has focused on the law's gender quota for supervisory boards and inclusion requirement for executive boards, a lesser-known fact is that it also includes a reporting requirement regarding the representation of women in leadership positions. Together with the CSR Directive Implementation Act (*CSR-Richtlinie-Umsetzungsgesetz*, CSR-RUG),<sup>4</sup> which was introduced in 2017, corporate or consolidated group reporting (hereinafter referred to as corporate reporting) on women's participation in leadership positions was changed fundamentally.

<sup>1</sup> In this study, consolidated annual reports are analyzed as a special form of the annual report, as all companies analyzed in this report are consolidated groups. In contrast to the parent company's annual report, the consolidated annual report presents the situation of the consolidated group as a whole.

<sup>2</sup> This research was funded by the Berlin University Alliance as part of the German federal and state governments' excellence strategy.

<sup>3</sup> Cf. the other report in this issue, Anja Kirsch, Virginia Sondergeld, and Katharina Wrohlich, "Number women on top boards of large companies keeps growing; momentum from the inclusion requirement for executive boards is waning," *DIW Weekly Report*, no. 3/4 (2023): 20–31.

<sup>4</sup> The CSR Directive Implementation Act transposes the non-financial reporting directive adopted at the EU level into German law and thus aims to strengthen corporate social responsibility (CSR). The core of this legislation, according to the European Commission, requires companies "to disclose information on their risks and opportunities arising from social and environmental issues, and on the impacts of their activities on people and the environment. This helps investors, civil society organizations, consumers, and other stakeholders to evaluate the sustainability performance of companies, as part of the European green deal" (available online).

## Leadership Positions Act

The FÜPoG came into effect in May 2015 and was further supplemented in August 2021 by the Law to Expand and Modify the Regulations for the Equal Participation of Women and Men in Leadership Positions in the Private and Public Sectors Act (*Gesetz zur Ergänzung und Änderung der Regelungen für die gleichberechtigte Teilhabe von Frauen an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst, FÜPoG II*).

The law mandates that publicly listed companies with equal representation of shareholders and employees on their supervisory board (full co-determination) fulfill a gender quota of at least 30 percent on their supervisory boards. The supervisory boards of companies that are either publicly listed or have full co-determination must set their own target for the share of women on their supervisory board and a deadline by which this target should be achieved.

FÜPoG II contains a further requirement for the publicly listed companies with full co-determination if their executive board has more than three members: Such executive boards must include at least one woman and at least one man. In companies that are either publicly listed or have full co-determination, and to which the above inclusion requirement does not apply, the supervisory board must set a target for the share of women on the executive board and a deadline for achieving said target. The executive board of such companies is required to set targets for the share of women on the two management levels below the board level and a corresponding deadline.

Less public attention has been paid to the fact that the FÜPoG also includes reporting requirements. Accordingly, companies must describe the targets and deadlines they have set in their management report. If they fail to achieve any of the targets by the deadlines, they must explain why. Companies subject to the 30 percent gender quota on the supervisory board must also provide an explanation if they fail to meet the quota.

A 2021 provision requires companies that set a target of zero women on their supervisory or executive boards or in the upper management levels to provide a detailed explanation of the reasons behind the decision.

## CSR Directive Implementation Act

A non-financial reporting directive was introduced at the European Union (EU) level in 2014. It includes a statutory reporting obligation requiring companies to provide information publicly on the composition and functioning of the administrative, management, and supervisory boards; to describe their diversity policy for these boards; and to report on its implementation and results.<sup>5</sup> In April 2017, this direc-

tive was transposed into German law in the CSR Directive Implementation Act (*Gesetz zur Stärkung der nichtfinanziellen Berichterstattung der Unternehmen in ihren Lage- und Konzernlageberichten*).

Since then, major publicly traded companies are required to describe their diversity policy as it relates to the composition of the executive and supervisory boards. The diversity policy may include aspects such as age, gender, education, or professional background. Companies must describe the policy's objectives, how it was implemented, and the results achieved in the fiscal year. If a company does not have a diversity policy, it must explain why.

## Using corporate reporting to promote socio-political goals is gaining in significance

The primary purpose of corporate reporting is to provide information on a company's financial position and performance to investors and other stakeholders. The management report in particular should summarize information on the company's economic condition, assess the position and development of the company in relation to the market as a whole and to the economic situation, provide supplementary information beyond that contained in the financial report, and contain forecast-oriented information.<sup>6</sup>

Over the past two decades, however, corporate reporting has taken on an additional purpose that has grown in importance: It is now also meant to foster companies' social responsibility by requiring them to disclose their activities transparently to stakeholders.<sup>7</sup> In this way, legislators pursue environmental and social aims by requiring the disclosure of non-financial information in corporate reporting, instead of imposing direct regulations. In other words, they use reporting requirements to achieve socio-political objectives.<sup>8</sup>

This approach has the benefit of granting companies more flexibility in fulfilling their social responsibilities. The disadvantage, however, is that this approach may not lead to any substantial behavioral changes by companies, but rather only to symbolic compliance, expressed in standardized statements in corporate reports.<sup>9</sup> To be effective, mandated transparency, which is not an end in itself, must be followed by a change in corporate practice. This can happen in two ways: Firstly, companies can use the published information to compare themselves with other companies (benchmarking) and to develop best practices. Secondly, stakeholders

<sup>5</sup> Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance (available online).

<sup>6</sup> Klaus Ruhnke, Sönke Sievers, and Dirk Simons, *Rechnungslegung nach IFRS und HGB: Lehrbuch zur Theorie und Praxis der Unternehmenspublizität mit Beispielen und Übungen* (Freiburg: 2018) (in German).

<sup>7</sup> David Hess, "Social reporting and new governance regulation: The prospects of achieving corporate accountability through transparency," *Business Ethics Quarterly* 17, no. 3 (2007): 453-476.

<sup>8</sup> Barnali Choudhury and Martin Petrin, "Corporate governance that 'works for everyone': Promoting public policies through corporate governance mechanisms," *Journal of Corporate Law Studies* 56, no. 2 (2018): 381-415.

<sup>9</sup> Gregory Jackson, Julia Bartosch, Emma Avetisyan, Daniel Kinderman, and Jette Steen Knudsen, "Mandatory non-financial disclosure and its influence on CSR: An international comparison," *Journal of Business Ethics* 162, no. 2 (2020): 323-342.

Box

Methods and data

The findings of this study are based on an analysis of the consolidated annual reports of all DAX-30 and DAX-40 companies from 2009 to 2022. Five hundred and fifty-four German-language reports from 51 companies, covering the reporting years 2009 to 2020, were taken from the *Bundesanzeiger's* online company register, where companies subject to mandatory disclosure must file their annual reports in a standardized format.<sup>1</sup> The data on the shares of women on supervisory and executive boards are taken from the annual DIW Berlin Women Executives Barometers.

All paragraphs containing a combination of keywords for women ("woman," "female") and leadership positions ("management," "supervisory board," "executive board") were identified as passages relevant to the topic of women and leadership positions.

For the content analysis of the reports, topic modeling was implemented using the Latent Dirichlet Allocation (LDA) algorithm, a method frequently used in exploratory text mining<sup>2</sup> to identify latent topic structures<sup>3</sup> but is also used in the analysis of genetic

structures, among other things.<sup>4</sup> The LDA algorithm models the composition of texts (here: paragraphs) from one or more topics, which in turn are characterized by different probability distributions for the occurrence of individual words. In this way, extensive quantities of text can be linked to different topic categories. A key challenge in implementing the LDA algorithm is determining the number of topics to be identified. Here, the number was determined by a combination of statistical performance metrics and qualitative content comparisons of different topic solutions. The LDA algorithm was "trained" using text passages from the 2009 to 2020 annual reports and identified eight different topics. The large amount of text enables the algorithm to identify the topics precisely. Four topics relate specifically to gender equality in corporate leadership. Four other topics (departmental assignments and personnel changes, compensation of the supervisory and executive boards, committee composition, and a residual category) contained the keywords used for the text selection without reference to gender equality. For this reason, only the four topics classified as relevant were included in the more extensive trend analyses and comparisons.

To find groups ("clusters") of companies with similar thematic focuses in their reporting on women and leadership positions, a hierarchical cluster analysis was performed based on the (Euclidean) distances between the average proportions of topics. The period for this analysis was limited to 2015 to 2020 to focus on the more recent characteristics of corporate reporting.

<sup>1</sup> Since individual companies in the sample were newly listed or lost their listing within the study period from 2009 to 2020, reports are not available for all companies for all twelve years. On average, 10.86 reports per company were included in the analysis.

<sup>2</sup> Text mining is "the task of extracting meaningful information from text." This is a computer-aided task performed with the help of statistical methods and machine learning or artificial intelligence. See Mehdi Allahyari et al., *A brief survey of text mining: Classification, clustering and extraction techniques* (2017) (available online).

<sup>3</sup> David M. Blei, Andrew Y. Ng, and Michael I. Jordan, "Latent Dirichlet Allocation," *Journal of Machine Learning Research* 3 (2003): 993-1022.

<sup>4</sup> Jonathan K. Pritchard, Matthew Stephens, and Peter Donnelly, "Inference of population structure using multilocus genotype data," *Genetics* 155, no. 2 (2000): 945-959.

can use the information to put pressure on companies to change their behavior.

The statutory reporting requirements for women in leadership positions and companies' diversity policies are indirect measures for achieving a socio-political goal, namely gender equality in economic decision-making positions. The reporting requirements are indirect because they do not dictate the composition of the boards; rather, they require companies to disclose information on the boards' composition as well as their decisions and plans about it. Companies can report on this in more or less detail. This increased transparency makes it possible for stakeholders to better assess companies' commitment to gender equality.

Civil society organizations such as the *AllBright Foundation* and *Frauen in die Aufsichtsräte* (FidAR) regularly analyze corporate reporting on women in leadership positions and publish their findings.<sup>10</sup> As a result of their work, it has become widely known that many companies have set a target of zero

women, especially for the share of women on their executive boards, and that most companies set targets that they had already achieved.<sup>11</sup>

**Reporting on women in leadership positions has changed substantially over time**

The empirical results presented here are based on the analysis of the consolidated annual reports of all companies that were listed in the DAX-30 or DAX-40 index from 2009 to 2022; this is a total of 554 reports from 51 companies in the reporting years 2009 to 2020. Quantitative text analysis methods were used, that allow statistically sound evaluations of large amounts of text (Box). All paragraphs dealing with women and leadership positions were identified as relevant passages for these analyses.

When considering the overall development of corporate reporting on women and leadership positions, it becomes clear that the companies under study report significantly

<sup>10</sup> AllBright Foundation, *Battle for the Best Minds: Competition for female directors is increasing* (2022) (available online); FidAR, *Women-on-Board-Index 185* (2022) (in German; available online).

<sup>11</sup> AllBright Stiftung, *Zielgröße: Null Frauen. Die verschenkte Chance deutscher Unternehmen* (2016) (in German; available online).

more on the topic over time. For example, the average quantity of corporate reporting on women and leadership positions, measured by number of words, was about nine times as high in 2020 as it was in 2009 (Figure 1). Particularly striking is the sharp increase from 2009 to 2011. During this period, in May 2010, the recommendation was included in the German Corporate Governance Code (DCGK) that supervisory boards should set concrete targets for supervisory board composition and ensure that women are adequately considered as candidates. These targets are to be published in the annual report. The next abrupt increase occurred between 2014 and 2015. In May 2015, the FÜPoG I came into force, with the reporting requirements described earlier. Since then, the average number of words on the topic has remained at a level of around 650 to 850 per report.

A closer look at the content of corporate reporting on women and leadership positions using topic modeling (Box) reveals four central topics:

- Quota and targets for the supervisory and executive boards
- Targets for management levels below the executive board
- Qualifications in the supervisory and executive boards
- Measures for increasing the share of women in leadership positions

These topics are characterized by typical terms that appear with varying frequency in the reports. A selection of key terms for each topic are illustrated in the form of a word cloud (Figure 2).

The first two topics mentioned (quota and targets for supervisory and executive boards, targets for management levels below the executive board) are compliance-related topics whose primary function is to signal compliance with statutory regulations and reporting requirements on quotas and targets. The “qualifications of the supervisory and executive boards” topic is dedicated primarily to legitimating the composition of the boards by presenting their members’ qualifications and diversity. The diversity emphasized here is less related to gender and more to internationality, age, and expertise. Finally, the “measures for increasing the share of women in leadership positions” topic sets out ways in which companies actively promote gender equality in leadership positions, i.e., the “how” of achieving equality. These include measures to identify women for leadership positions within the company, to attract female recruits from the external labor market, and to identify and eliminate factors that hinder women’s careers and internal promotions. It also involves establishing responsibility structures for gender equality in the company, increasing gender and diversity awareness among managers, and training, advice, and networking for women.

## Two reporting orientations

Beyond the overall reporting trends, a continuing divergence between two groups of companies can be found. Using the identified topics, it is possible to determine the shares of text in each report that represent each of the topics. When

Figure 1

### Reporting on women and leadership positions in the annual reports of DAX companies<sup>1</sup>

Volume, measured by number of words



- 1 The evaluation is based on the consolidated annual reports of all companies that were in the DAX 30/DAX 40 between 2009 and 2022 (51 companies in total).
- 2 German Corporate Governance Code (DCGK).
- 3 Equal Participation of Women and Men in Leadership Positions in the Private and Public Sectors Act (FÜPoG I).
- 4 CSR Directive Implementation Act (CSR-RUG).

Source: Authors' survey.

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The average scope of reporting on women and leadership positions was about nine times higher in 2020 as it was in 2009.

analyzing the relevant text shares in corporate reporting from 2015 to 2020, the DAX companies can be grouped into two clusters of similar sizes: An equality-oriented cluster and a compliance-oriented cluster. The two clusters each include companies with a similar thematic focus in their reporting on women and leadership positions. On average, the 23 companies in the equality-oriented cluster focus on measures aimed at increasing the share of women in leadership positions (Figure 3). The 28 companies in the compliance-oriented cluster focus their reporting on compliance with statutory reporting requirements, in particular quotas and targets in the supervisory and executive boards. On average, the companies in this cluster are much less concerned with proactive measures for ensuring equality.

The reporting trends of both clusters show similarities as well as differences. Both clusters increased reporting about quotas and targets for the supervisory and executive boards as well as targets for management levels when the statutory reporting requirements were introduced. Thus, the jump in the average reporting volume from 2015 is primarily due to the increase in compliance reporting related to the FÜPoG.

Figure 2

Word clouds of the topics identified in the annual reports of DAX companies<sup>1</sup>

The bigger the word, the more frequent the appearance

Measures for increasing the share of women in leadership positions



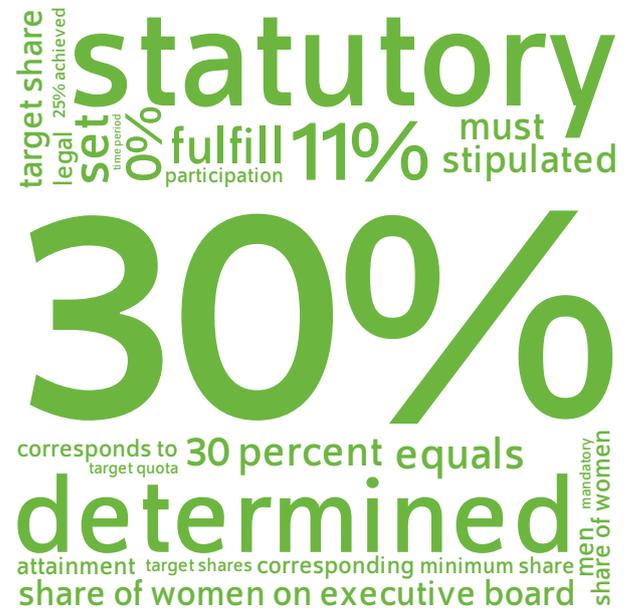
Targets for management levels below the executive board



Supervisory and executive board member qualifications



Quotas and targets for supervisory and executive boards



<sup>1</sup> The evaluation is based on the consolidated annual reports of all companies that were in the DAX 30/DAX 40 between 2009 and 2022 (51 companies in total).

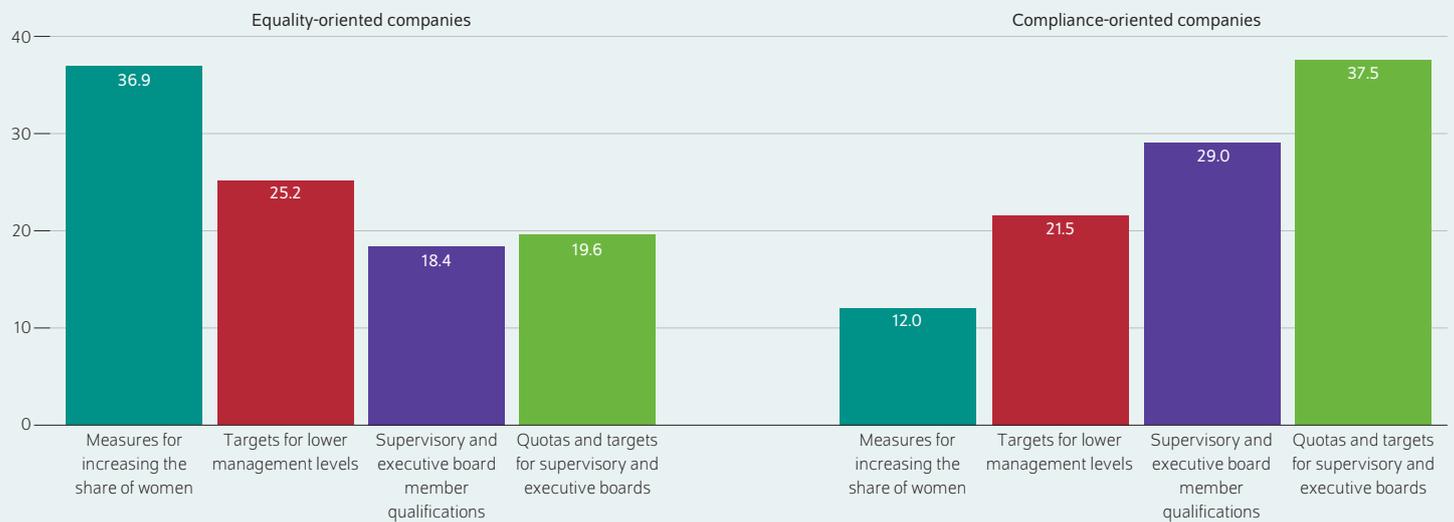
Sources: Authors' surveys and calculations.

The topics analyzed are characterized by typical words. The word clouds illustrate a selection of central terms for each topic.

Figure 3

**Distribution of the information on women and leadership positions in the annual reports of DAX companies<sup>1</sup>**

Shares in percent



<sup>1</sup> The evaluation is based on the consolidated annual reports of all companies that were in the DAX 30/DAX 40 between 2009 and 2022 (51 companies in total). There are 23 companies in the equality-oriented cluster and 28 companies in the compliance-oriented cluster.

Sources: Authors' surveys and calculations.

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While equality-oriented companies report the most on the implementation of measures to increase the share of women, compliance-oriented companies report on this topic the least.

In contrast, a clear difference emerges between the clusters when it comes to the question of *how* equality will be achieved: The equality-oriented cluster shows a considerable increase in reporting on measures to increase the share of women in leadership positions (Figure 4). In the compliance-oriented cluster, in contrast, the reporting on this topic has visibly decreased on average since 2011. Overall, following the introduction of diversity recommendations in the DCGK in 2010, the FùPoG in 2015, and, in particular, the CSR Directive Implementation Act in 2017, the differences in reporting between the two clusters have increased significantly.

Thus, only companies in the equality-oriented cluster, which consists of slightly less than half of the companies analyzed, take the opportunity to comprehensively report on proactive efforts toward gender equality and thus present themselves as modern, diverse organizations. The other half of the companies in the compliance-oriented cluster primarily limit themselves to showing compliance with the new statutory reporting requirements.

**Thematic focus signals corporate commitment to gender equality**

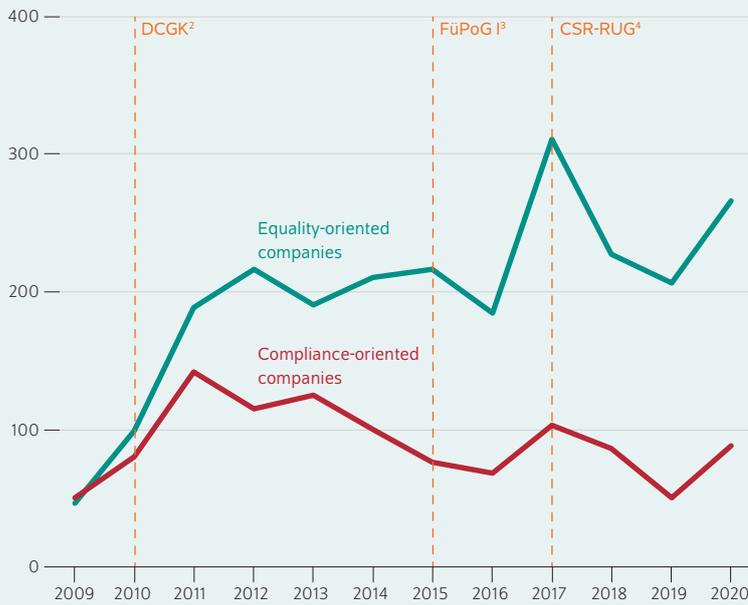
The analyses show that despite uniform statutory reporting requirements on women and leadership positions, there are still differences in how companies address the issue. With

these differences as well as the potential reputational impact of corporate reporting in mind, the question arises to what extent these differences indicate whether companies are substantially committed to gender equality in leadership positions, or merely focused on achieving compliance with statutory regulations.

To answer this question, the correlations between equality orientation and compliance orientation in the annual reports on the one hand, and the share of women on the supervisory boards and executive boards of the companies on the other were examined. In 2022, companies in the equality-oriented cluster had a markedly higher share of women on their supervisory boards, at an average of 40 percent compared to companies in the compliance-oriented cluster, where the share was 34 percent (Table). This difference is also statistically significant.<sup>12</sup> With a 13-percentage-point increase in the share of women on supervisory boards since 2015, the increase in the equality-oriented cluster was somewhat higher than the increase in the compliance-oriented cluster (11 percentage points). Both clusters had equal shares of women on their executive boards in 2022 at 20 percent. Here, too, the 15-percentage-point increase in the share of women since 2015 in the equality-oriented cluster was somewhat higher than the increase in the compliance-oriented cluster

<sup>12</sup> In a conservative two-sided T-test for different means, with  $p < 0.05$  and assumed heteroskedasticity.

**Figure 4**  
**Reporting on measures for increasing the share of women in the annual reports of DAX companies<sup>1</sup>**  
 Volume, measured by number of words



1 The evaluation is based on the consolidated annual reports of all companies that were in the DAX 30/DAX 40 between 2009 and 2022 (51 companies in total).  
 2 German Corporate Governance Code (DCGK).  
 3 Equal Participation of Women and Men in Leadership Positions in the Private and Public Sectors Act (F&UoG I).  
 4 CSR Directive Implementation Act (CSR-RUG).

Source: Authors' survey.

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The equality-oriented companies have significantly expanded their reporting on how they will actually increase women's representation.

(12 percentage points). In concrete terms, this means that the average number of women on executive boards from 2015 to 2022 at the equality-oriented and compliance-oriented companies increased from 0.33 to 1.18 and from 0.55 to 1.16, respectively.<sup>13</sup>

Thus, among the large publicly listed companies, those that focused their reporting on concrete measures to increase the share of women in leadership positions had a higher share of women on their supervisory boards and an equally high share of women on their executive boards in subsequent years. In addition, these companies experienced a greater increase in the share of women on both boards than the companies whose reports were predominantly focused on compliance with mandatory legal disclosures. In this respect, corporate reporting on measures for increasing the share of women in leadership positions sends a signal to stakeholders: Through it, they can identify companies that actively and concretely want to improve gender equality in leadership positions.

**Conclusion: Statutory reporting obligations increased companies' transparency about gender equality**

As the analyses show, the introduction of statutory, non-financial reporting requirements via the F&UoG and the CSR Directive Implementation Act has fundamentally changed corporate reporting on women and leadership positions. For example, major publicly listed companies now provide significantly more information on this topic in their annual reports on average than they did a few years ago. At the same time, there are significant differences in the way companies report on women and leadership positions as well as in the content of the reports, and these differences have increased further since the introduction of statutory reporting requirements. The different thematic focuses in corporate reporting provide insight into the motives and strategic orientations with which companies react to societal demands for gender equality in leadership positions.

The analyses reveal that a good half of the companies under study focus on compliance, meaning they primarily pay attention to meeting the minimum legal reporting requirements with regard to targets and the share of women on their boards. Here, gender equality is presented as an external demand on which the company takes a stance. This comparatively low commitment is also reflected in the actual share of women on the supervisory boards of these companies, which is only slightly above the quota requirement of 30 percent on average.

In contrast, the other half of the companies provide information above and beyond the statutory requirement, reporting on their concrete, proactive measures for gender equality in leadership positions. For these companies, reporting

<sup>13</sup> On average, the companies analyzed had around a five-member executive board (5.49) and around a 15-member supervisory board (14.86) in 2022.

**Table**

**Shares of women on boards at DAX companies<sup>1</sup> by topical orientation**

In percent

	Share of women on supervisory board		Share of women on executive board	
	2015	2022	2015	2022
Equality-oriented companies	27	40	5	20
Compliance-oriented companies	23	34	8	20

1 The evaluation is based on the consolidated annual reports of all companies that were in the DAX 30/DAX 40 between 2009 and 2022 (51 companies in total). There are 23 companies in the equality-oriented cluster and 28 companies in the compliance-oriented cluster.

Sources: Authors' surveys and calculations.

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requirements are an opportunity to present more in-depth strategies for improving gender equality. Such reporting can function as a signal of a substantial (and not merely symbolic) commitment to gender equality in leadership positions. This is evident both in terms of a greater share of women on the supervisory boards of these companies and in terms of the range of reported initiatives that have the potential to increase the number of women in leadership positions.

Thus, in addition to the information on the current shares of women and targets for boards, the unstructured content of the reporting on women and leadership positions is also a valuable source of information: Stakeholders, competitors, and the public can gain insight into the current state of gender equality in companies, compare different approaches, and identify best practices. Legal reporting requirements have consequently increased corporate transparency by making it clearer where companies stand on the issue of gender equality.

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## LEGAL AND EDITORIAL DETAILS

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