“Gender diversity and financial performance in executive positions in German companies”

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GENDER DIVERSITY AND FINANCIAL PERFORMANCE IN EXECUTIVE POSITIONS IN GERMAN COMPANIES

Abstract

An underrepresentation of women in executive positions has persisted for decades. This paper aims to analyze the financial impact of women in executive positions in German companies by examining the economic value added and exploring the effects of Environmental, Social, and Governance (ESG) factors and female supervisory board members on female board members. The results indicate that in the 200 largest German companies, the share of female executives increased between 2018 and 2022. Regardless of industry, female executives started at very low levels at around 4% in 2018; in 2022, this figure reached around 11%. Thereby, the financial sector showed the highest share of female executives at around 14% in 2022, and the industrial sector at around 9%. A closer look reveals that large companies have higher shares of female executives than smaller companies. Large companies show an average of 17% compared to small ones, and in 2022, only 8%. There is a positive correlation between the share of female supervisory board members and female executives, arguing that female supervisory board members seem to hire more female executives. Companies with more female executives tend to have lower ESG controversy scores, and companies with more female executives, measured by the economic value added, perform better financially than companies with few or no women. Companies with female executives show about 2 percentage points higher economic value added than those with the lowest share of females (no or few female executives). Thus, it seems that female executives matter and make a difference in companies.

Keywords
corporate governance, corporate financial performance, diversity, ESG, Germany

INTRODUCTION

The underrepresentation of women in executive positions has persisted in the business world for decades. This issue is not unique to Germany. AllBright, a German foundation committed to promoting cultural change in companies, reveals that in 2023, 66 companies have no women on their board of directors, with nine having no women on either the board or supervisory board. Interestingly, AllBright states that there are more male CEOs named Christian than female CEOs (Allbright, 2023).

The lack of women in executive roles is a multifaceted issue with various causes. Several barriers that women encounter while striving for leadership positions are gender discrimination, bias, organizational structures, and cultural barriers. Despite the significant progress that has been made toward gender equality, women continue to face significant barriers. The pervasiveness of gender discrimination and bias in the workplace that hinders women’s opportunities for advancement is an ongoing issue. However, there
are arguments that diverse teams achieve better results. Furthermore, legislation has been passed to ensure that more women get into management positions. Accordingly, it is important to examine the financial effects this will have on companies and whether it may even be worthwhile for companies to make such changes voluntarily (e.g., as financial performance is better than before).

1. LITERATURE REVIEW

One of the principal obstacles to women's progress in the corporate world has been discrimination and bias. Past studies indicate that females, particularly working mothers, are often perceived as less capable or less devoted to their careers than men and are, therefore, less likely to be promoted or given leadership opportunities (Cuddy et al., 2004; Heilman, 2001). Furthermore, mothers are often judged more harshly than men in the workplace and face higher standards regarding qualifications and job performance (Fuegen et al., 2004; Etaugh & Folger, 1998). More recent research shows that these stereotypes tend to change. Traditional gender roles, however, persist to some extent today, and mothers – even today – perform a larger share of unpaid work (Selvarajan et al., 2015; Farré et al., 2022; Samtleben & Müller, 2022; Ervin et al., 2022). Moreover, working mums are still seen as busy, multitasking, determined, and tired, but they are also hardworking (Odenweller & Rittenour, 2017). However, O’Neill and O’Reilly (2010) argue that the number of hours worked is a central variable affecting income, i.e., any person, male or female, who works a smaller number of hours is likely to be disadvantaged in terms of payment.

A significant hindrance to the progression of women in the corporate world is the absence of mentors, informal networks, and role models, in addition to prevailing gender stereotypes. Mentoring and exclusion from networks are also impacting the career development of women (Shen et al., 2022; Chauhan & Mishra, 2021). Even though organizations use mentorship as a tool for the career development of women, it is hard to measure its impact and whether it helps improve diversity when it comes to senior leadership positions (Singh & Vanka, 2020). In addition, Ibarra et al. (2010) argue that although companies heavily invest in mentoring and developing their top female talent, such efforts do not necessarily result in promotions.

Generally, diverse teams lead to advantages for organizations, in particular, improve performance and outcomes (Gomez & Bernet, 2019; Díaz-García et al., 2013). However, male-dominated organizations with a hierarchical culture are less likely to promote women to leadership roles (Campuzano, 2019; Brady et al., 2011). Additionally, inflexible work-family policies and a dearth of adaptable work arrangements create challenges for women in achieving a balance between their professional and personal obligations, resulting in a greater risk of burnout and turnover for women. Furthermore, Cook and Glass (2014) find that females on boards of directors increase the chance that a woman will be appointed as the CEO of the respective company. However, the number of women on boards of directors is also low.

Increasing the number of women in executive positions can have a positive effect on both organizations and society at large. Companies with more women in leadership roles tend to exhibit better financial performance, increased innovation, and improved social responsibility (Dezsö & Ross, 2012; Byron & Post, 2016; Hoobler et al., 2018). Insights from behavioral, economic, psychological, and social-based models (Adams & Ferreira, 2009) propose that board inequality can cause sub-optimal decisions, which might have a negative impact on corporate governance, other stakeholders, and shareholder performance. Additionally, workplace diversity enhances decision-making and fosters innovation (Gomez & Bernet, 2019; Luu et al., 2019). For instance, Zalata et al. (2019) report that women tend to make conservative and risk-averse financial decisions with positive outcomes in the long term. This shows how important it is to increase female representation in executive positions. It is, therefore, of interest to promote gender diversity in executive roles to ensure optimal outcomes.

Diversity in Germany attracts considerable academic attention. A Google Scholar search for the terms "Diversity & Germany" yields nearly 5 mil-
lion results. However, searching for the narrower term “female executives in Germany” produces only 200k results, covering diverse areas such as sports, medicine, psychology, politics, and business. From a business perspective, research on executives (CEOs, CFOs, etc.) is relatively scarce compared to research on supervisory board members. This trend is not only observed in Germany but also globally. However, the impact of executives on firm performance and decision-making is much more significant than that of the supervisory board. Female executives have a considerable influence on a company’s culture, pay, and HR policies.

Holst and Kirsch (2014) analyzed women on executive boards in German 200 largest listed companies. For the period from 2006 to 2013, they found a strong increase (from 4.6% to almost 18%) in companies that had at least one female executive. However, only 2% of CEOs are female. Looking at the top 100 companies, the numbers are even lower. The number is increasing when looking only at companies from the major German stock indices (e.g., Dax and M-Dax). The result is supported by Henrekson and Stenkula (2009), who find similar low rates. Only 75 female executive director appointments in the period from 1999 to 2014 were reported by Bechtoldt et al. (2016). Gagliarducci and Paserman (2015) show that women in the top layer of management in German companies are in the range of 15% in a large sample of companies. Kirsch (2017) further analyzes executives and the regulations and reports only an incremental increase in recent years. Similar to Holst and Kirsch (2014), Holst and Wrohlich (2017) report a further increase of executives in the set of companies. However, the difference to supervisory boards remains large. Kirsch et al. (2022) found that a greater number of women were appointed to executive boards in 2021. They also report that there was no or only “sluggish” growth in the prior years. Summing up, women now make up 14% of executive directors. Sousa and Santos (2022) address gender imbalances in executive decision-making positions and demonstrate that European countries applying quotas not only return higher levels of female members but also record higher growth rates over states without quotas. Due to new laws, it is expected that the share of female executives will increase, as a board of directors of a listed company with equal co-determination consisting of more than three members must in future have at least one woman and at least one man.

Financial performance is a crucial factor for companies. Thus, an increase in the value of the company’s financial management is found when the company is led by women (Zulvina & Adharianib, 2019; Agyemang-Mintah & Schadewitz, 2019). Bechtold et al. (2016) find that after the decision to make an appointment with a female executive member, companies perform better than their competitors when appointing men. Hong and Kim (2022) report a higher Tobin Q for companies led by a female CEO, and Brahmo et al. (2021) evidence a positive relationship between gender diversity and financial development. Their results become highly significant when more females are appointed to the board of executives. In addition,Schumann et al. (2024) discovered that gender diversity has a positive impact on accounting quality in Germany and Austria. Skala and Weill (2018) showed that financial institutions with a female CEO are less risky for the shareholders and other capital providers, as they show higher capital adequacy and also better equity ratios.

Another strand in the literature focuses on innovation and ESG performance. Miller and del Carmen Triana (2009) discovered a positive relationship between executive board gender diversity and innovation, as well as a synchronized relationship between board racial diversity and both firm reputation and innovation. Nadeem et al. (2020) show that gender diversity on the board level has a significant positive connection with environmental progress. Furthermore, according to Velte (2016), female decision-makers in German companies have a positive impact on ESG firm performance. Birindelli et al. (2019) argue that gender diversity is a strong driver of eco-friendly sustainability in financial institutions.

To sum up, the increasing number of studies in the area show the increasing importance of women in companies. However, the overall number of studies is still scarce. Research indicates that women lead to better performance or lower risk (Zulvina & Adharianib, 2019; Bechtoldt et al., 2016; Hong & Kim, 2022), and there is a positive impact on ESG performance (Velte, 2016). In addition, exist-
ing studies primarily cover financial performance from a capital market view (Hong & Kim, 2022), calculating a Tobin Q.

The purpose of this study is to analyze the financial effects of women in executive positions in German companies by analyzing the economic value added. In addition, this paper analyzes the effects of ESG and the effects of female supervisory board members on female board members.

2. METHOD

To examine the current state of gender diversity among executives in Germany, this paper analyzed the 200 largest publicly traded companies headquartered in Germany between 2018 and 2022 based on total market capitalization. The data were taken from Refinitiv and match companies with executive leader characteristics and ESG scores. Furthermore, any missing data were obtained by investigating pertinent information in the respective annual reports. Financial company and market data are sourced from Refinitiv Eikon to compute the economic value added (EVA).

To differentiate among companies, the sample is divided into four groups based on the company’s market capitalization at the end of the analyzed period. Table 1 displays the summary statistics for the 50 companies per subgroup. It also shows that the subgroup with the largest firms exhibits the highest average ESG score.

Table 1. Summary statistics

<table>
<thead>
<tr>
<th>Group</th>
<th>#</th>
<th>Ø Market Cap</th>
<th>Ø Revenue</th>
<th>Ø ESG-Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Large</td>
<td>50</td>
<td>33,061</td>
<td>38,426</td>
<td>80.40</td>
</tr>
<tr>
<td>Large Cap</td>
<td>50</td>
<td>4,897</td>
<td>6,066</td>
<td>63.60</td>
</tr>
<tr>
<td>Mid Cap</td>
<td>50</td>
<td>1,667</td>
<td>2,682</td>
<td>56.06</td>
</tr>
<tr>
<td>Small Cap</td>
<td>50</td>
<td>698</td>
<td>894</td>
<td>46.03</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>10,081</td>
<td>12,026</td>
<td>61.52</td>
</tr>
</tbody>
</table>

Note: # – number of companies per sub-group; Ø Market Cap – average market capitalization of the companies at the end of the analyzed period in million euro; Ø Revenue – average revenue of the companies in million euro; Ø ESG-Score – average environmental, social and governance rating.

This investigation employs Ehrbar’s (1999) widely-utilized economic value added (EVA) model for analyzing financial performance. Economic value added is a performance measurement tool that calculates the true economic profit of a company after deducting the cost of capital. It measures the difference between a company’s net operating profit after taxes and the cost of all capital invested in the business, including equity and debt. The concept aims to provide a clearer picture of a company’s economic performance by considering the cost of financing and the impact of investments on overall value. To compute the EVA for each of the 200 companies, the following formula is applied.

\[
EVA = \frac{\text{NOPAT}_t}{\text{AC}_t} - \frac{\text{NOPAT}_t}{\text{AC}_t} \left(\frac{E_t}{(E_t + D_t)} \cdot r_f + \beta \cdot (r_m - r_f) \right) \times \left(\frac{1}{(E_t + D_t)} \cdot r_D \cdot (1-T)\right) + \text{SF}_t
\]

For a simpler comparison between the companies, the EVA shortfall is calculated. It expresses how much additional value each of the 200 companies is generating compared to its weighted average cost of capital relative to the adjusted capital. To compute the shortfall (SF) of the economic value-added, the following formula is used:

\[
\text{EVA}_{SF,t} = \frac{\text{NOPAT}_t}{\text{AC}_t} - \left(\frac{E_t}{(E_t + D_t)} \cdot r_f + \beta \cdot (r_m - r_f) \right) \times \left(\frac{1}{(E_t + D_t)} \cdot r_D \cdot (1-T)\right),
\]

where NOPAT\(_t\) describes the net operating profit after taxes in year \(t\), AC\(_t\) is the adjusted capital in year \(t\). AC is calculated as the sum of total debt and equity adjusted for goodwill amortization, minority interest, preferred stock, and the present value of operating lease obligations. WACC is the weighted average cost of capital. \(E_t, D_t, T, r_f, r_m, r_D\) and \(\beta\) are describing the equity, debt, corporate tax rate, risk-free rate, market return, cost of debt, and systematic risk of a company in the respective year. Beta is the 5-year average beta as calculated by Refinitiv. The market return is the 5-year average market return of the MSCI Index.
3. RESULTS AND DISCUSSION

In line with Holst and Kirsch (2014), the share of female executives is on the rise. Figure 1 presents the development of gender diversification among the top 200 companies in Germany. In the period from 2018 to 2022, the average number of females on a board increased from 3.74% to 10.87%. This trend is also supported by the FüPoG II rules, as a board of a listed company with equal co-determination consisting of more than three members must have at least one female member.

Upon closer examination of company size, it is evident that larger companies have a greater proportion of female executives. This tendency was not limited to recent times, but was already evident at the start of this study period. Generally, the number of executives typically increases with company size (e.g., Allianz has nine executives while many smaller companies just have two), which results in a considerable number of smaller companies lacking any female executives. However, there is a clear increase in all four groups, with growth rates even higher for smaller companies compared to larger ones. Interestingly, the trend among smaller companies appears to be flattening out. On the one hand, companies may have already implemented the regulations outlined in FüPoG II. On the other hand, competition for the best female managers is intensifying, resulting in greater difficulty in finding suitable candidates.

Figure 1 presents the female executive members in the German top 200 companies in %. Part A) shows the total sample, while part B) presents the sample split into four groups based on the market capitalization of the underlying companies.

For a deeper analysis, the sample is split into industry sectors, looking for differences between the companies. Table 2 shows the results. Overall, it seems that the sector has only a limited impact. Regardless of the industry, female executives started at very low levels in 2018, and the number now ranges around 11%. The financial industry is the highest with 14%, and the industrial industry is the lowest with below 9% female executives. Regarding the financial sector, the comparatively high number is due to banks (such as Deutsche Bank with 1/5 female executives) and not to the same extent due to the insurance sector (e.g., Talanx with only one female executive, nominated in May 2022). In addition, there are some differences in the energy sector. Large and traditional energy companies (such as RWE) have higher shares of female executives than new and renewable energy companies.

Literature suggests that already existing diversity among the decision-makers in a company, not financial performance, increases the likelihood of women being promoted to top leadership positions (Cook & Glass, 2014; Cohen et al., 1998). Therefore, with a higher percentage of female supervisory board members, the number of female executives may increase. While Fleischer (2022) finds no signs that women on supervisory boards have the skill to adjust the diversity in the management board, Kirsch and Wrohlich (2020) argue that there is an obvious trend that a quota will increase the presence of women on boards.

![Figure 1. Female executive members in German top 200 companies](http://dx.doi.org/10.21511/ppm.22(2).2024.44)
Figure 2 illustrates a slightly positive correlation between more female supervisory board members and female executives. However, the trend is not statistically significant. Figure 2 also presents that even though companies have female representation on supervisory boards, this does not necessarily result in female executives. This is also driven by the fact that smaller companies have only two board members, and they often do not change frequently. This finding confirms the arguments of Fleischer (2022).

Female executives have higher intentions to act more ethically than males (Valentine & Rittenburg, 2007), and males are said to exhibit relative over-confidence in significant corporate decisions as compared to female executives (Huang & Kisgen, 2013). To test differences between more companies’ executives being more and less female-heavy, the sample is split by the share of females and matched with the ESG controversies score. The ESG controversies score is taken from Refinitiv Eikon. Refinitiv calculates the score based on 23 ESG controversy topics (e.g., anti-competitive behavior, business ethics controversies, or intellectual property controversies) and measures a company’s exposure to environmental, social and governance controversies and negative events reflected in global media (LSEG Data & Analytics, 2023). A low score shows

<table>
<thead>
<tr>
<th>Sector</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>22</td>
<td>3.60</td>
<td>5.83</td>
<td>5.01</td>
<td>6.09</td>
</tr>
<tr>
<td>Information Technology</td>
<td>25</td>
<td>2.06</td>
<td>3.34</td>
<td>1.39</td>
<td>8.28</td>
</tr>
<tr>
<td>Real Estate</td>
<td>12</td>
<td>2.78</td>
<td>9.03</td>
<td>7.64</td>
<td>12.10</td>
</tr>
<tr>
<td>Materials</td>
<td>14</td>
<td>5.00</td>
<td>6.91</td>
<td>5.00</td>
<td>10.85</td>
</tr>
<tr>
<td>Communication Services</td>
<td>15</td>
<td>4.27</td>
<td>7.96</td>
<td>3.83</td>
<td>10.52</td>
</tr>
<tr>
<td>Consumer Goods</td>
<td>31</td>
<td>5.27</td>
<td>10.60</td>
<td>9.85</td>
<td>10.27</td>
</tr>
<tr>
<td>Energy</td>
<td>10</td>
<td>0.00</td>
<td>2.50</td>
<td>0.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Financial sector</td>
<td>17</td>
<td>8.31</td>
<td>11.02</td>
<td>9.04</td>
<td>12.79</td>
</tr>
<tr>
<td>Industrial sector</td>
<td>52</td>
<td>2.81</td>
<td>5.56</td>
<td>4.23</td>
<td>7.82</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.33</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>3.74</td>
<td>6.83</td>
<td>5.22</td>
<td>9.15</td>
</tr>
</tbody>
</table>

Note: Female executive members are shown in %. “#” indicates the number of companies per sector.

Figure 2. Share of female supervisory board members and related female executives.
controversies at a company, and a high score shows a good result. Table 3 presents the outcomes.

Overall, the average controversies score of the 200 biggest German companies is very high, indicating an A grade and heavily tending toward an A+ grade in 2022, based on Refinitiv Eikon’s methodology (LSEG Data & Analytics, 2023). The results show that an increase in the number of female executives leads to a decrease with respect to the controversies score. Companies with few or no female executives have excellent controversy scores of almost 100. However, regarding this analysis, one has to take into consideration that the companies with more women are, at the same time, larger companies. On the one hand, larger companies are more in public focus, thus more likely that negative business practices or headlines will make waves and be uncovered at all. To survive and be economically successful in the long term, it is positive for a company when negative business practices are discovered and remedied as soon as possible, considering an example of p. ex. Wirecard that has been covering up for a long time. Therefore, generally revealing negative aspects does hurt in the short term but helps a company in the long run. Thus, maybe women in exposed positions can help uncover negative habits and improve them. This might also be reasoned by the fact that women are more risk-averse than men (Skala & Weill, 2018). This finding, therefore, supports the general argument that female executives are generating more positive outcomes. Thus, due to women in leadership, controversies and negative information might be revealed.

Finally, this paper provides evidence on whether a higher number of females in executive positions leads to superior financial performance for companies. This study used the widely used economic value added (EVA) model by Ehrbar (1999). Figure 3 presents the average EVA shortfall per group. The shortfall indicates the extent to which each company outperforms its weighted average cost of capital. Companies with a small amount or no women show small or negative values, implying that there is no or only small economic value added in the years 2019 to 2021. Only in 2018, companies with no or small numbers of women in executive positions were able to outperform their weighted average cost of capital.

<table>
<thead>
<tr>
<th>Female Executives</th>
<th>#</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>50</td>
<td>80.35</td>
<td>86.86</td>
<td>83.68</td>
<td>86.41</td>
<td>85.17</td>
</tr>
<tr>
<td>High</td>
<td>50</td>
<td>77.52</td>
<td>78.20</td>
<td>77.15</td>
<td>74.81</td>
<td>82.81</td>
</tr>
<tr>
<td>Mid</td>
<td>50</td>
<td>95.42</td>
<td>100.00</td>
<td>99.45</td>
<td>96.62</td>
<td>93.09</td>
</tr>
<tr>
<td>Small / No</td>
<td>50</td>
<td>97.25</td>
<td>100.00</td>
<td>98.45</td>
<td>99.31</td>
<td>99.16</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>84.95</td>
<td>90.33</td>
<td>88.98</td>
<td>89.10</td>
<td>90.06</td>
</tr>
</tbody>
</table>

**Figure 3.** EVA shortfall sorted by the number of female executives

http://dx.doi.org/10.21511/ppm.22(2).2024.44
to generate higher EVAs. However, even in 2018, the results were still below those of companies with a high share of women in executive positions. In all five years, the group has the lowest average economic value added.

Having a closer look at the groups representing companies with very high, high, and mid number of female executives, the results demonstrate that a further increase in board representation does not necessarily add additional value. This suggestion can also be derived from the average numbers between 2018 and 2022. In particular, Figure 3 presents that there is a gap of at least 2 percentage points between companies with small or no women and companies with more women. To sum up, the presence of females on executive boards seems to create added financial value for companies.

This finding supports previous literature analyzing the impact of females and gender diversity on firm performance or the value of a company. While Flabbi et al. (2019) suggest significant costs of female underrepresentation in leadership by regressing several firm-specific factors such as sales per employee, Zulvina and Adharianib (2019) and Agyemang-Mintah and Schadewitz (2019), using the Tobin’s Q, show an increase in the value of the firm’s financial management when it is led by women.

**CONCLUSION**

This paper aimed to analyze the financial effects of women in executive positions in German companies. The results show an apparent trend. Within the past few years, the share of women has increased in the 200 largest German companies. A closer look reveals that large companies are already further along in the process than smaller companies. Explanations may be that bigger companies have more board seats, and the bigger a company is, the more it is in public focus. Moreover, large companies also have stricter legal requirements (e.g., currently, a sustainability report is only required for specific companies). Thus, it is obvious that legal requirements such as FüPoG II (Zweites Führungspositionen-Gesetz) rules contribute to the steadily rising share of female executives in German companies. This development is observed regardless of the industry.

This paper supports the hypothetical assumption that women in executive positions matter and make a difference in companies. On the one hand, there is a positive (yet not significant) correlation between the share of female supervisory board members and female executives. On the other hand, companies with a higher number of female executives have better economic values added than those with few or no women. Last, the data show that companies with more female executives tend to have lower controversy scores. Overall, these findings suggest that gender diversity might have a positive impact on firms in various ways. As a practical use case of the findings, companies without female representation in respective functions could look for the right talents to close this gap. Future research should focus on extending the analysis to smaller firms and more countries. In addition, the combination of financial market-driven aspects (e.g., financial returns) and the value-added models could be an interesting area for future research.

**AUTHOR CONTRIBUTIONS**

Conceptualization: Felix Roessle, Kathrin Roessle.
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Formal analysis: Felix Roessle.
Funding acquisition: Kathrin Roessle.
Investigation: Felix Roessle, Carolin Fleischmann.
Methodology: Felix Roessle, Carolin Fleischmann.
Project administration: Kathrin Roessle.
REFERENCES


