

Closing the gender wage gap in the boardroom: the role of compliance with governance codes

Gender wage
gap in the
boardroom

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Abstract

Purpose – This paper aims to analyse the gender wage gap (GWG) in the board of directors at the executive-director level. The authors aim to answer two questions: (1) Is the GWG explained by differences between males and females, by discriminatory causes or by both? and (2) what are the main factors that cause or increase the existence of GWGs? Specifically, the authors pay special attention to compliance with good governance codes as a fundamental variable in explaining the GWG.

Design/methodology/approach – The study uses a sample of directors in Spanish companies listed on the continuous market from 2013 to 2021 and uses Blinder–Oaxaca decomposition and unconditional quantile regressions to analyse the GWG.

Findings – The findings demonstrate both discriminatory reasons and differences between individuals when explaining the GWG and showing that compliance with remuneration practices issued by good governance codes considerably reduces the GWG for all remuneration components.

Practical implications – The study confirms adequacy of regulator remuneration recommendations but highlights GWG persistence within boards. To counter this, enforcing pay transparency aids female directors' advancement, reducing bonuses' impact on wage disparity, necessitating monitored laws for fairer compensation systems and meeting 40% of women directors' proposals.

Social implications – Primarily, this study significantly influences public attitudes towards GWG. Specifically, it calls for companies to not only increase female leadership representation but also to ensure equitable remuneration aligned with their male counterparts, conduct regular pay equity assessments, implement pay transparency policies and support work-life balance through flexible hours and parental leave. Furthermore, the work serves as a crucial resource for female directors, empowering them to advocate for their rights in the context of GWG.

Originality/value – This research offers nuanced insights into the GWG in corporate boards, corrects the main limitations of previous studies and calls for regulatory reinforcement and the active involvement of female directors and firms in creating equitable policies.

Keywords Board of directors, Glass ceiling, Director compensation, Female directors, Gender wage gap (GWG)

Paper type Research paper

1. Introduction

The gender wage gap (GWG) has been a persistent issue in the workplace for decades (Aavik *et al.*, 2023; Maoret *et al.*, 2023). Women continue to earn less than men on average, and this disparity is especially pronounced in leadership positions (Santero-Sánchez and



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Núñez, 2022). In the boardroom, where decisions are made that affect the entire company, the GWG is a particularly concerning issue. Despite the significant progress made in promoting gender equality in the workplace in recent years, the GWG persists (Fraile and Alcalde Fradejas, 2020; Santero-Sánchez and Núñez, 2022), and it remains a significant challenge to achieving full gender parity (Rebérioux and Roudaut, 2019). Understanding the determinants that cause these wage gaps is crucial to be able to mitigate this problem. This challenge has gained special importance in recent years for academics, firms and regulators.

Most of the GWG studies in top corporate positions look at the high executives (Carter *et al.*, 2017; Cook *et al.*, 2018; Grund, 2015) or CEO position (Gupta *et al.*, 2018). However, the research focused on the board of directors is limited (Pucheta-Martínez and Bel-Oms, 2015), highlighting the works of Kulich *et al.* (2011) and Geiler and Renneboog (2015), which analysed the GWG in executive directors, the work of Goh and Gupta (2016) in external directors and, finally, the work of García Martín and Herrero (2019), which focused on disaggregating by type of directors. Nevertheless, none of these works has focused on separating what part of the GWG is not explained (i.e. for discrimination reasons) and what part of the gap is produced by the differences between men and women. In this sense, it is interesting to analyse how these differences between men and women affect the formation of GWGs.

The purpose of this work is to analyse the GWG within the board of directors at the executive-director level. This study extends the literature by answering the following questions:

- Q1. Is the GWG explained by differences between males and females, by discriminatory causes (unexplained part) or by both? and.
- Q2. What are the main factors that cause or increase the existence of GWGs?

Among these factors, we highlight the importance of compliance with good governance codes, being the first paper to propose a negative relationship between compliance and GWG.

We do this by correcting the main limitations of some previous papers. The first one has to do with the heterogeneity of the samples used. According to Grund (2015), we specifically choose to analyse the executive directors' group since the literature seems to demonstrate that the GWG mainly exists in this category (García Martín and Herrero, 2019). Considering the whole boardroom could lead to biased results. The comprehensive analysis of all categories of directors comprising the boardroom, viewed as an undifferentiated whole, holds the risk of producing results that are influenced by preconceived notions. This arises from the fact that each category of director harbours unique and distinct personal as well as professional interests that diverge from those of their counterparts (Grund, 2015). In addition, their remuneration policies vary significantly across these distinct directorial groups. Consequently, an approach that fails to acknowledge and dissect these substantial discrepancies could inadvertently introduce partiality into the findings. The second limitation lies within the heterogeneity observed within the remuneration components documented in prior literature. Following Grund (2015) and García Martín and Herrero (2019) suggestions for future research, our analysis extends beyond total compensation. We meticulously break down compensation into fixed, variable and other compensation components. The third limitation is current in GWG studies since most of them date back a decade or more. Thus, as far as we know, this is the first contemporary paper that conducts a comprehensive analysis of the factors influencing the GWG within the context of board of directors, and it is the first that analyses compliance when explaining the GWG.

As a foretaste, the results demonstrate both discriminatory reasons (unexplained part) and differences between individuals when explaining the GWG, with each of these two parts weighting totally different depending on the type of remuneration considered. In addition, compliance with remuneration practices issued by good governance codes considerably reduces the GWG for all remuneration components.

This study makes several contributions. First, it adds to the existing literature on GWG and contributes to the debate concerning the gaps caused by differences in individuals or by discrimination reasons. Second, it corrects the main limitations of previous studies when analysing GWG, avoiding biased results. Third, this is the first paper to analyse the relationship between compliance and GWG. This is the main novelty of this research, since compliance with good governance practices becomes a crucial characteristic in explaining their potential influence on mitigating GWG.

These findings have direct implications for researchers, female directors, firms and policymakers. The academic implications are related to the need to consider compliance when studying wage gaps in the boardroom and the need to study heterogeneous samples (i.e. groups of individuals and groups of compensation components). The main practical implications concern regulators and policymakers, as our work demonstrates that good governance practices within good governance codes improve the transparency and legitimacy of a company. This leads to much more equitable remuneration between genders within the board of directors. Therefore, this study encourages regulators to continue issuing recommendations of this type and even normal mandatory compliance, which are aimed at eliminating this important social problem, such as the GWG. And on the other hand, regulators should implement transparency policies to avoid the GWG. Above all, it is necessary to enact laws that monitor variable remuneration to develop fairer compensation systems, since GWG is higher in the variable remuneration components. Our results can also be useful for companies. Policies that avoid inequality in remuneration should be promoted when designing remuneration policies for boards of directors. That is, implementing a policy that ensures that individuals in similar roles and positions are paid equally regardless of gender. This includes addressing any historical disparities, conducting regular pay equity audits, promoting women to reach CEO and chair positions and belonging to compensation committees. Finally, this work is important for female directors, who must be aware of the gender pay gap to defend their rights. They should also actively participate in nomination and compensation committees to design the board's compensation policies.

2. Literature review and hypothesis development

The GWG is a persistent issue in the corporate world ([Aavik et al., 2023](#)), particularly in the higher echelons of decision-making ([Maoret et al., 2023](#)), such as the board of directors ([Cook et al., 2018](#)). While progress has been made in recent years towards closing this gap, there is still a significant disparity between the compensation received by men and women serving in the same role in the boardroom ([Geiler and Renneboog, 2015](#); [Goh and Gupta, 2016](#); [Kulich et al., 2011](#); [Rebérioux and Roudaut, 2019](#)).

Few studies have examined the factors that contribute to the GWG in corporate boardrooms ([Glass and Cook, 2018](#); [Pucheta-Martinez and Bel-Oms, 2015](#)), and a few key findings emerge. One key factor is gender bias, which can manifest itself in various forms such as stereotypes or social norms, which leads to a discrimination pattern ([Schneider et al., 2021](#)). Thus, [Adams and Ferreira \(2009\)](#) found that gender bias plays a significant role in the selection and compensation of female directors, resulting in a wage gap between male and female directors.

On the other hand, the literature has found some other factors, different from discrimination, which lead to GWGs. Some of these factors have to do with individual characteristics, such as job experience (Grund, 2015; Rebérioux and Roudaut, 2019), educational background (Pucheta-Martínez and Bel-Oms, 2015) and networking opportunities (Adams and Ferreira, 2009). Regarding individual differences, studies have shown that male directors tend to have more job experience and educational qualifications than female directors, which may contribute to the GWG (Carter *et al.*, 2010). In contrast to these ideas, several recent studies show that in recent years, in developed countries, and specifically in Spain, women have achieved higher levels of education than men (García-Román, 2023). Women not only access higher education in higher proportions but also obtain higher performance and qualifications than men (García-Román, 2023). This occurs at all educational levels, but especially in university education (Klesment and Bavel, 2017). In Spain, although the educational level of women increased considerably, their educational expansion began much later (Ortiz and Rodríguez Menés, 2016). Consequently, women's higher educational performance does not translate into greater general training for female managers. The average age of directors in Spain is 61 years (CNMV, 2022). Therefore, almost 40 years would pass since women finish their university studies and occupy board positions. In addition, men may have greater networking opportunities, which can lead to better compensation (Adams and Ferreira, 2009).

Furthermore, there may also be differences between female and male directors due to the positions they reach within the board of directors, such as chair or CEO positions (Frye and Pham, 2018; Withisuphakorn and Jiraporn, 2017). By way of example, some studies have highlighted the existence of a glass ceiling for female directors (Lewellyn and Muller-Kahle, 2020), even within high-level hierarchical positions in companies, such as the boardroom. In this sense, some studies have pointed out the scant presence of women in CEO positions within the firms (Frye and Pham, 2018). Similarly, firm characteristics (e.g. firm size, firm risk, profitability), where these directors work, as well as board or corporate governance characteristics, can also affect the gender pay gap (Frye and Pham, 2018; Geiler and Renneboog, 2015; Jones and Kaya, 2023; Pucheta-Martínez and Bel-Oms, 2015; Withisuphakorn and Jiraporn, 2017). Concerning these factors, several studies have shown that companies with a higher percentage of women in executive roles have a smaller GWG in the boardroom (Adams and Ferreira, 2009; Carter *et al.*, 2017; Geiler and Renneboog, 2015).

Summarizing the above, we can point out that a part of the gender pay gap has a discriminatory component, and another part of it is due to differences between male and female directors, according to their individual characteristics and the differences between the companies and boardrooms where they work. As explained above, individual characteristics refer to aspects such as experience, educational training, connections or relationships with other boards, time spent on the board and positions held on the board or on board committees. On the other hand, differences at the board level reflect variables such as board ownership control, independence of the nomination and compensation committee, gender diversity in the nomination and compensation committee and CEO-chairperson duality. Finally, the differences at the firm-level refer to the size of the company, the level of debt or the performance of the companies where the directors work, among others. Therefore, we establish the following hypotheses:

- H1.* There is a GWG on the board that can be explained by individual and firm-level differences between male and female directors.

H2. There is a GWG on the board that cannot be explained by individual and firm-level differences between male and female directors (discrimination).

Concerning board characteristics, good corporate governance can play a critical role in reducing GWGs in corporate boardrooms. One of the key ways in which good governance can reduce the GWG is through greater transparency and accountability in the selection and compensation of directors. By requiring companies to disclose their gender diversity policies and the gender composition of their board of directors, stakeholders can hold companies accountable for their actions and promote greater gender parity in the boardroom (Ben-Amar *et al.*, 2017).

Consequently, compliance could be an important aspect of good corporate governance that can help to reduce GWGs in the boardroom. Compliance refers to a company's adherence to legal and ethical standards and regulations, among which are the good governance codes (Carrasco and Laffarga, 2007; Cuomo *et al.*, 2016). These codes contain recommendations on good governance practices, which increase the firm's legitimacy before investors (Zattoni and Cuomo, 2008). Good governance practices are a tool that facilitates the creation of an environment of trust, transparency and accountability (Mallin, 2013; OECD, 2019). Therefore, compliance with good remuneration practices (GRP) can help to ensure that companies are not discriminating against women in their hiring and compensation policies. By establishing clear guidelines for the selection and compensation of directors and regularly auditing and monitoring these practices, companies can ensure that they are complying with anti-discrimination laws and regulations (Ben-Amar *et al.*, 2017).

Therefore, companies that prioritise compliance and ethical behaviour are likely to have more diverse and inclusive cultures (Weber and Wasieleski, 2013), which consequently could help to reduce GWGs in the boardroom. Research has shown that companies with more diverse and inclusive cultures are more likely to have better financial performance (Simionescu *et al.*, 2021) and to be more innovative (Griffin *et al.*, 2021). By creating a culture that values diversity and inclusivity, companies can attract and retain top talent, including women, and promote greater gender parity in the boardroom (Weber and Wasieleski, 2013).

Complying with these recommendations leads to remuneration of directors in a more objective, fair and equitable manner (CNMV, 2020). This would consequently lead to a reduction in the remuneration differences between males and females, that is, reduce the GWG. In other words, the greater the compliance with soft law, the smaller the differences between male and female directors, so the GWG will be lower. Despite not finding any paper in the literature that relates compliance to the mitigation of the GWG, the previous reasonings lead us to propose the following hypothesis:

H3. Compliance with GRP leads to narrowing the GWG.

3. Methods

3.1 Data

The database is made up of a sample of panel data that includes information on all the directors that belong to the boards of directors of Spanish-listed companies on the Continuous Stock Market during the period 2013–2021. 2013 was chosen as the starting point since it was the first year in which the National Securities Market Commission published a standardised remuneration document for listed companies in which the remuneration of each director was broken down into different categories (ECE Order/461/2013, of March 20). Previously, this information was not publicly available.

As a result, the sample comprises 10,745 director-year observations belonging to 127 different firms. Of these 10,745 director-year observations, there are a total of 2,494 unique directors (each director might serve more than one company) who can belong to the categories of executive, institutional, independent or other director. From the whole sample, we selected executive directors, representing 14.89% (1,600 director-year observations). We choose this category since the literature has demonstrated that GWG is mainly present in executive directors (García Martín and Herrero, 2019).

The data relating to the compensation variables were manually collected from the Annual Remuneration Report, while the information corresponding to individual directors and the board of directors was taken from the Annual Corporate Governance Reports. Finally, firm characteristics were obtained from the SABI database.

3.2 Variables

The main variable to analyse is *Totcomp*, which represents the total compensation earned by each director in one year. The total remuneration of each director is composed of a fixed compensation (*Fixcomp*), a variable compensation (*Varcomp*) and other remunerations (*Othcomp*). Therefore, *Totcomp* is calculated as:

$$\text{Totcomp} = \text{Fixcomp} + \text{Varcomp} + \text{Othcomp} \quad (1)$$

The *Fixcomp* variable consists of four remunerative concepts: base salary; fixed wages; attendance fees; and remuneration for membership. The *Varcomp* variable is also computed as the sum of four components: short-term bonus; long-term bonus; equity-based pay; and long-term incentive plans. The *Othcomp* variable includes redundancy payment and other compensations such as wages in kind.

The grouping variable is the *gender* of the directors. We use a dichotomous variable that takes the value of one if the director is a woman and zero otherwise.

The main independent variable is the good remuneration practices index (*GRP_Index*). We compute it following Melón-Izco *et al.* (2020). The Spanish Codes of Good Governance make a series of recommendations that have to do with the remuneration policy of companies. Good governance practices on board remuneration correspond to recommendations 56–64 of the Good Governance Code in 2020 (CNMV, 2020). For example, recommendation number 56 displays:

That the remuneration of directors be necessary to attract and retain directors of the desired profile and to reward the dedication, qualification and responsibility that the position requires, but not so high as to compromise the independence of judgment of non-executive directors.

Each of these recommendations may be fully complied with, partially complied with, not complied with or not applicable. This variable measures the proportion of these specific recommendations that a company has totally or partially complied with, weighted by importance. The recommendations with which a company had totally complied were assigned a weight of 1, and the recommendations with which a company had partially complied were weighted at 0.5. The computation of the index is as follows:

$$\text{GRP} = \frac{\text{recommendations totally complied with} \times 1 + \text{recommendations partially complied with} \times 0.5}{\text{total recommendations} - \text{recommendations not applicable}} \quad (2)$$

The rest of the control variables are shown in Table 1, as well as the way they are measured.

3.3 Methodology and empirical models

The Blinder–Oaxaca decomposition method is the most widely used method for decomposing the estimated GWG into the effects of differences in means and coefficients (i.e. differences in the returns to the characteristics). The most common explanation for unexplained compensation differentials (i.e. differences in pay that remain after having controlled for a set of characteristics) can be discriminatory. Nonetheless, we acknowledge that unexplained compensation differentials may also be influenced by a range of non-discriminatory factors that have not been accounted for in our analysis. These non-discriminatory factors could include aspects such as individual negotiation skills, industry-specific dynamics or career trajectories that contribute to variations in compensation beyond the variables included in our model. To minimise the inevitable impact of omitted variable bias, we did our best efforts to include a wide array of characteristics that best capture the factors contributing to compensation differentials.

The following regression model, according to Blinder–Oaxaca, is proposed:

Variable	Label	Measurement
<i>Dependent variable</i>		
Total compensation	Totcomp	Log of (1 + total compensation)
Fixed compensation	Fixcomp	Log of (1 + fixed compensation)
Variable compensation	Varcomp	Log of (1 + variable compensation)
Other compensation	Othcomp	Log of (1 + other compensation)
<i>Grouping variable</i>		
Gender	Gender	Dummy value (0 = man; 1 = woman)
<i>Independent variable</i>		
Good remuneration practices index	GRP_Index	Proportion of compliance in remuneration recommendations
<i>Control variables</i>		
Committees' presence	Committees	Log of the number of committees in which a director participates
CEO position	CEO	Dummy value (0 = no; 1 = yes)
Chairperson position	Chair	Dummy value (0 = no; 1 = yes)
Factor time	Factime	Proportion of board time in a year
Tenure	Tenure	Log of the number of years that a director serves on the board
PhD qualifications	Qualifications	Dummy value (0 = no; 1 = yes)
Relationships	Relationships	Log of the number of boards to which each director belongs
Board ownership	Board_Own	Proportion of shares held by the board
Independence of the nomination and compensation committee	NCC_Indep	Proportion of independent directors in this committee
Women presence in the nomination and compensation committee	NCC_Women	Dummy value (0 = no; 1 = yes)
CEO and chairperson duality	CEO_duality	Dummy value (0 = no; 1 = yes)
Firm size	Firm_Size	Log of the number of workers in the firm
Leverage ratio	Leverage	Total liabilities divided by total assets
Performance	Performance	EBIT divided by total assets (ROA)

Source: Authors' own creation

Table 1.
Variables definition

$$\overline{\text{Comp}}^M - \overline{\text{Comp}}^F = (\overline{X}^M - \overline{X}^F)\hat{\beta}^N + \overline{X}^M(\hat{\beta}^M - \hat{\beta}^N) + \overline{X}^F(\hat{\beta}^N - \hat{\beta}^F) \quad (3)$$

where $\overline{\text{Comp}}^M$ and $\overline{\text{Comp}}^F$ are the average values of compensation for male and female directors, \overline{X}^M and \overline{X}^F are vectors with the average characteristics for the two genders, and $\hat{\beta}^M$ and $\hat{\beta}^F$ are the OLS estimates of relevant coefficients. $\hat{\beta}^N$ is a non-discriminatory coefficient structure obtained from the pooled regression of males and females. The first term in equation (3) is part of the outcome differential, explained by group differences in the predictors (the explained component), the second is the male advantage and the third is the female disadvantage. The sum of the second and third terms constitutes the unexplained component referred to previously.

4. Results and discussion

4.1 Descriptive statistics

Table 2 contains the descriptive statistics of both the dependent variables (compensation variables) and the independent and control variables. For each variable, Table 3 shows its mean and standard deviation, differentiating the group of female directors from the group of male directors. The differences between these two groups are also shown through a parametric mean contrast (Student's *t*-test) for unequal variances.

Regarding compensation variables, the differences between female and male directors are huge. On average, male executive directors earn almost four times more than female

Variables	Female directors		Male directors		Difference	Differences t-test	<i>p</i>
	Mean	SD	Mean	SD			
Totcomp	394.385	543.515	1,533.177	2,550.547	1,138.793	12.152***	0.000
Fixcomp	250.938	223.104	549.429	537.629	298.490	9.664***	0.000
Varcomp	138.600	359.170	837.117	1,993.059	698.517	10.330***	0.000
Othcomp	4.846	10.673	146.632	973.536	141.786	5.698***	0.000
GRP_Index	0.912	0.142	0.843	0.195	-0.070	-3.811***	0.000
Committees	0.092	0.423	0.418	0.553	0.326	6.000***	0.000
CEO	0.323	0.471	0.555	0.497	0.232	3.878***	0.000
Chair	0.092	0.292	0.328	0.470	0.235	6.175***	0.000
Factime	0.899	0.225	0.927	0.198	0.028	0.990	0.326
Tenure	8.329	9.573	9.777	9.227	1.448	1.196	0.236
Relationships	0.200	0.617	0.287	1.528	0.087	1.008	0.316
Qualifications	0.077	0.269	0.065	0.247	-0.012	-0.347	0.729
Board_Own	0.307	0.276	0.224	0.258	-0.084	-2.399**	0.019
NCC_Indep	0.581	0.243	0.591	0.231	0.010	0.324	0.747
NCC_Women	0.554	0.501	0.588	0.492	0.034	0.533	0.596
CEO_duality	0.415	0.497	0.341	0.474	-0.074	-1.179	0.242
Firm_Size	4,431,855	15,985,066	8,546,533	19,594,031	4,114,679	2.012**	0.048
Leverage	0.912	0.142	0.843	0.195	-0.070	-3.811***	0.000
Performance	0.067	0.241	0.019	0.291	-0.048	-1.561	0.123

Notes: This table shows the descriptive statistics of all the variables included in the regression models, analysing the differences between female and male directors. These differences have been computed through a parametric mean test (student's *t*-test) for unequal variances. *significant at 10%; **significant at 5%; ***significant at 1%

Source: Authors' own creation

Table 2.
Summary statistics

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Gender	1.000															
(2) GRP_Index	0.07***	1.000														
(3) Committees	-0.021	0.010	1.000													
(4) CEO	-0.002***	-0.012	-0.082***	1.000												
(5) Chairperson	-0.100***	-0.024	0.061***	0.022	1.000											
(6) Factime	-0.028	0.033	0.061**	-0.012	0.076***	1.000										
(7) Tenure	-0.050**	0.039	0.099***	-0.067***	0.311***	0.372***	1.000									
(8) Relationships	-0.011	0.013	0.029	0.001	0.012	0.047*	0.031	1.000								
(9) Qualifications	0.009	0.062**	0.222***	-0.057**	0.160***	-0.022	0.091***	-0.018	1.000							
(10) Board_Own	0.064**	-0.013	-0.063**	-0.083***	0.023	0.079***	-0.014	-0.132***	-0.014	1.000						
(11) NCC_Indep	-0.008	-0.047*	-0.004	0.058**	0.019	0.018	-0.024	0.027	0.021	-0.045*	1.000					
(12) NCC_Women	-0.014	0.044*	0.090***	0.059**	-0.012	-0.064**	-0.022	0.049**	0.064**	-0.196***	-0.039	1.000				
(13) CEO_dual	0.031	-0.075***	-0.065***	0.183***	0.330***	-0.023	0.119***	-0.046*	0.036	0.046*	0.150***	-0.048*	1.000			
(14) Firm size	-0.096***	0.147***	0.200***	0.066***	-0.037	0.002	0.027	0.087***	0.206***	-0.406***	0.073***	0.191***	0.025	1.000		
(15) Firm_Risk	0.063**	0.008	-0.029	0.020	0.011	-0.148***	-0.133***	-0.010	-0.026	-0.083***	-0.061**	0.067***	0.070***	-0.130***	1.000	
(16) Performance	0.033	-0.001	0.021	-0.042*	0.003	0.210***	0.104***	0.026	0.020	0.090***	0.021	-0.028	-0.034	0.127***	-0.358***	1.000
VIF	1.06	1.05	1.11	1.08	1.28	1.23	1.33	1.02	1.13	1.29	1.04	1.08	1.25	1.43	1.21	1.22

Notes: This table contains the correlation coefficients for the set of explanatory variables of directors' compensation, defined in Table 2. The variance inflation factors (VIFs) are also shown. ***significance at 1% level, **significance at 5% level, *significance at 10% level

Source: Authors' own creation

Table 3. Correlation matrix and variance inflation factors

directors (i.e. women earn, on average, €394,385 per year, while men receive €1,533,177), if total compensation is considered. These differences between the sexes are maintained for the three types of compensation, although the biggest difference is observed in variable remuneration, where the compensation received by men is six times that of women. These results are in line with those obtained by [Carter *et al.* \(2017\)](#), who document a greater GWG between female and male executives in S&P due to a greater risk aversion on the part of women. Similar results are obtained by [Kulich *et al.* \(2011\)](#) and [Coelho Duarte *et al.* \(2010\)](#).

Concerning individual characteristics, female directors participate less frequently in board committees than male directors (0.092 committees on average versus 0.418), and they reach the highest positions of CEO (32% of female executive directors hold CEO positions, while 56% of male executive directors hold that position) or chairperson (9% of female executive directors hold CEO positions, while 42% of male executive directors hold that position) much less frequently. These differences could be important when explaining the GWG, since the greater the number of committees in which a director participates, the greater the remuneration obtained. Likewise, directors who hold the positions of CEO and chair usually receive higher compensation for tasks related to these responsibilities. Moreover, women are less experienced in the boardroom, have fewer connections with other boards and are more qualified than men. However, there were no statistically significant differences in individual characteristics. Regarding board and firm characteristics, female directors remain on more controlled boards of directors as well as in smaller and more indebted companies. Thus, working in smaller and more indebted companies could explain the lower remuneration obtained by females. Finally, female directors sit on boards of directors that carry out best remunerative practices under the good governance code (91% compliance versus 84% compliance). In summary, from the study of the different characteristics of female and male directors, it can be observed that male directors have characteristics that are linked to higher remuneration of directors (e.g. the larger the company, the more likely it is to remunerate in a more generous way).

4.2 Explanatory analysis

As a previous step, [Table 3](#) provides the correlation matrix and the variance inflation factors (VIFs) for the variables used to explain the directors' compensation. This allows us to examine the possible problems of multicollinearity between these explanatory variables. Considering that significant correlations are all well below 0.7 ([Wooldridge, 2010](#)) and the VIFs are close to one ([Besley *et al.*, 2013](#)), it can be said that there are no collinearity problems among the explanatory variables. Specifically, correlation coefficients are between 0.008 and 0.406 in absolute terms and the highest VIF is 1.43.

After verifying that there were no problems of multicollinearity, we studied the determinants of GWG through the Blinder–Oaxaca decomposition in regression models. The results are shown in [Table 4](#).

The results of the Blinder–Oaxaca decomposition show that the predicted log of total compensation is 6.313 for males and 5.434 for females, yielding a predicted GWG of 0.879. Therefore, when the account is taken of gender differences in the covariates, the predicted GWG for total remuneration is 140.85% [$1 - \exp(0.879)$]. The twofold decomposition analysis indicates that 79.18% of this total gap is explained by differences in the characteristics of male and female board members, and this effect is statistically significant. The remaining 20.82% of the pay gap is unexplained and could be attributed to discrimination. However, the unexplained part is not statistically significant. These results suggest that, although GWG still exists at the top firm level, such as the boardroom, this gap

Variables	Total compensation		Fixed compensation		Variable compensation		Other compensation	
	Coefficient (<i>p</i> -value)	% Total	Coefficient (<i>p</i> -value)	% Total	Coefficient (<i>p</i> -value)	% Total	Coefficient (<i>p</i> -value)	% Total
<i>Panel A</i>								
Male	6.313*** (0.000)		5.719*** (0.000)		4.119*** (0.000)		1.735*** (0.000)	
Female	5.434*** (0.000)		5.178*** (0.000)		2.200*** (0.000)		0.754*** (0.000)	
Difference	0.879*** (0.000)	140.85	0.541*** (0.000)	71.77	1.918*** (0.000)	580.73	0.981*** (0.000)	166.71
<i>Panel B</i>								
Explained	0.696*** (0.000)	79.18	0.536*** (0.000)	99.08	1.031*** (0.000)	53.75	0.448*** (0.002)	45.67
Unexplained	0.183 (0.307)	20.82	0.006 (0.968)	1.12	0.887*** (0.010)	46.25	0.533*** (0.004)	54.33
<i>Panel C</i>								
GRP_Index	-0.072*** (0.003)	-8.19	-0.055*** (0.005)	-10.17	-0.115*** (0.003)	-6.00	-0.038* (0.058)	-3.87
Committees	0.007 (0.176)	0.80	0.009 (0.118)	1.66	-0.006 (0.566)	-0.31	-0.006 (0.426)	-0.61
CEO	0.129*** (0.001)	14.68	0.104*** (0.001)	19.22	0.175*** (0.001)	9.12	0.083*** (0.008)	8.46
Chair	0.053*** (0.018)	6.03	0.044** (0.019)	8.13	0.035 (0.358)	1.82	-0.029 (0.282)	-2.96
Factime	0.044 (0.332)	5.01	0.052 (0.326)	9.61	0.074 (0.326)	3.86	-0.021 (0.370)	-2.14
Tenure	0.053* (0.079)	6.03	0.037* (0.086)	6.84	0.038 (0.176)	1.98	0.032 (0.146)	3.26
Relationships	-0.003 (0.345)	-0.34	-0.002 (0.359)	-0.37	-0.007 (0.347)	-0.36	0.001 (0.996)	0.10
Qualifications	-0.010 (0.258)	-1.14	-0.001 (0.868)	-0.18	-0.034* (0.094)	-1.77	-0.012 (0.408)	-1.22
Board_Own	0.051** (0.045)	5.80	0.042** (0.043)	7.76	0.080* (0.058)	4.17	0.040* (0.091)	4.08
NCC_Indep	0.006 (0.747)	0.68	0.004 (0.747)	0.74	0.008 (0.748)	0.42	0.004 (0.749)	0.41
NCC_Female	0.006 (0.606)	0.68	0.008 (0.598)	1.48	0.007 (0.618)	0.36	-0.011 (0.599)	-1.12
Firm size	0.464*** (0.000)	52.79	0.348*** (0.000)	64.33	0.724*** (0.000)	37.75	0.308*** (0.000)	31.40
CEO_duality	0.014 (0.286)	1.59	0.002 (0.640)	0.37	0.050 (0.255)	2.61	0.035 (0.256)	3.57
Firm_Risk	-0.004 (0.827)	-0.46	-0.009 (0.568)	-1.66	0.029 (0.474)	1.51	-0.002 (0.881)	-0.20
Performance	-0.003 (0.632)	-0.34	-0.007 (0.357)	-1.29	-0.024 (0.195)	-1.25	0.004 (0.702)	0.41
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600

Notes: *Significant at 10%, **significant at 5%, ***significant at 1%
Source: Authors' own creation

Table 4.
Blinder–Oaxaca
Decomposition of
GWG

is caused by the different characteristics of the individuals and companies where these are located.

Precisely for this reason, it is interesting to analyse what factors have contributed to the formation of these differences between the sexes. This study focuses on the *GRP_Index*, which coefficient appears with a negative and statistically significant sign, suggesting that companies that comply with a greater number of good corporate governance remuneration practices have smaller wage gaps. In fact, this variable contributes to reducing the total GWG by 8.19%. Thus, compliance is indeed a good mechanism to reduce the GWG, facilitating the creation of an environment of trust, transparency and accountability (Mallin, 2013; OECD, 2019). Therefore, complying with these recommendations launched in the good governance codes assures companies that they are not carrying out discriminatory actions against female directors when establishing remuneration policies.

Nevertheless, analysing only the gap in total remuneration could lead to biased results since the gap might be camouflaged in different remuneration components. Thus, Grund (2015) and Garcia Martin and Herrero (2019) suggest that future gender pay gap studies include various payment components. For these reasons, we also analyse the GWG among remuneration components. Decomposition results show that the predicted GWG in other compensation is greater than in fixed compensation, and the GWG in variable compensation is even greater than the previous two. Then, the predicted GWG for fixed compensation is 71.77%, for variable compensation it is 580.73% and for other compensation it is 166.71%. If we look at the GWG for fixed compensation, practically the entire gap (99.08%) is explained by the differences between male and female characteristics. However, if we look at variable and other compensations, about half of the gap is explained by differences in characteristics, and the other half is unexplained (or explained by discriminatory issues). Specifically, for variable remuneration, 53.75% of the GWG is attributable to differences in the average value of variables (the remaining 46.25% is attributable to differences in the compensation for productivity characteristics); and for other remuneration, 45.67% of the GWG is attributable to differences in the average value of variables (the remaining 54.33% is attributable to differences in the compensation for productivity characteristics). In these last two cases, both the explained and unexplained components are statistically significant. Therefore, we can conclude that hypothesis *H1* is totally complied with, while hypothesis *H2* is partially verified (i.e. in variable and other compensation).

Concerning the *GRP_Index*, this variable appears again as a negative and statistically significant variable, narrowing the GWG to 10.17%, 6.00% and 3.87% for fixed, variable and other compensation, respectively. Therefore, compliance with good governance practices in remuneration avoids or reduces the GWG in every remuneration component. Consequently, hypothesis *H3* is complete fulfilment.

4.3 Robustness check

We first run logit and probit Blinder–Oaxaca models to study the determinants of GWG, where the dependent variable becomes a binary variable. The results were similar to those obtained in the main analysis. Second, we use unconditional quantile regression (UQR) to explore the GWG at particular quantiles of the wage distribution (i.e. 10th, 50th and 90th percentiles). When looking at the lower end (10%) of the distribution, it could be seen how the GWG was practically non-existent (9.75%), showing a total absence of sticky floors. However, when the upper end (90%) was considered, the GWG widened and was much larger than the gap at other points in the distribution (140.85%), showing a glass ceiling effect.

5. Conclusions

The gender pay gap is an issue that persists around the world, even though gender equality is a priority for the Organisation for Economic Co-operation and Development (OECD, 2019). The GWG also extends to highly qualified and well-paid jobs, as is the case with the board of directors. Studying the GWG in the boardroom is interesting since remuneration policies are more controlled both by the recommendations issued by legislators and by the scrutiny of society and stakeholders.

Contrary to several studies which justified the GWG due to discrimination issues, our work finds mixed results, depending on the type of compensation analysed. Thus, we found that about half of the GWG in variable and other compensation is unexplained or due to gender bias. However, if we look at the fixed remuneration components, the main reason for the existence of GWG is differences in individuals or firms where these individuals work. This highlights the importance of analysing homogeneous remuneration groups (García Martín and Herrero, 2019). If we had analysed only the total compensation, the results obtained would have been biased, and we would have missed important information and implications. Furthermore, we find a negative association between compliance with GRP and the level of GWG. This is a very important finding when considering compliance with soft law on equity in remuneration policies between female and male directors.

According to the above, this paper has some theoretical or academic implications. First, this study adds to the existing literature on GWG in the boardroom. The findings of this study are consistent with previous research, which has shown that the GWG persists despite efforts to address this issue. However, this study provides more nuanced insights into the determinants that contribute to the wage gap. Specifically, the study shows that good corporate governance can play a critical role in reducing GWGs in corporate boardrooms. By promoting transparency, accountability, compliance and inclusivity, companies can create a culture that values diversity and promotes greater gender parity in the boardroom. Second, it shows academic implications derived from the analysis of homogeneous groups of remuneration within the board of directors. Third, the findings suggest that efforts to address the GWG should take into account the unique characteristics of individual companies. For instance, bigger companies may need different interventions in equality policies than smaller ones.

The findings of this study also have practical implications. Specifically, they suggest that companies need to take a more proactive approach to addressing the GWG. Companies should focus on increasing the number of women in leadership positions and match their remuneration to that of men (for the same positions). They can also take steps to ensure that their compensation practices are fair and equitable. Thus, following the recommendations of good corporate governance, companies should establish and promote the work of a compensation committee that independently evaluates the remuneration policies for executive directors, analysing the salary structure, variable remuneration and salary differences between directors. In addition, it must be checked whether there is a relationship between the remuneration policy and the company's performance, and if, in turn, it complies with the principles of moderation and transparency (García-Izquierdo *et al.*, 2018). This can include conducting regular pay equity analyses to identify and address any disparities in pay between males and females. Companies can also consider implementing pay transparency policies, which can help to reduce the GWG by making it easier for employees to identify and address pay disparities and provide opportunities for females to advance in their careers. Performance-based pay and long-term incentive plans that are equitable for both males and females (i.e. stock options or deferred compensation programs) could also help avoid GWG as long as the directors decide to take the same percentage of variable remuneration. Finally, companies should implement policies that

support work-life balance, such as flexible working hours, parental leave and childcare facilities. These policies can enable more women to participate in leadership roles and, consequently, be more remunerated.

On the other hand, regarding practical implications for external stakeholders, our results show that the remuneration recommendations issued by regulators and policymakers are in the right direction. However, these are still not enough measures, as the GWG still exists within the boards. Therefore, they should implement policies (hard law) such as pay transparency policies to provide female directors with the support and resources they need to advance in their careers, reach leadership positions and be equally paid. Bonuses are the main cause of GWG in Spain and other European countries (Sánchez-Mira, 2017). These salary supplements, which are especially relevant on boards of directors, present significant discretion and are a key source of wage discrimination (Sánchez-Mira, 2017). Therefore, regulators should enact laws that monitor this variable remuneration to develop fairer salary systems. Likewise, regulators should force compliance to reach 40% of women directors by 2020, as proposed by European Commission.

Finally, with regard to the implications concerning female directors themselves, they should be aware of the GWG to defend their rights and to better negotiate their remunerations when they break the glass ceiling and reach the board of directors, especially at the top level. García-Izquierdo *et al.* (2018) demonstrated that the presence of female directors on the compensation committee has a significant impact on the CEO payment system. To avoid conflicts of interest that could interfere with the design of remuneration policies, these committees must present a high degree of independence, experience, knowledge and values (Hillman and Dalziel, 2003). Thus, gender diversity can provide these skills. Therefore, it is essential that female directors are aware of the GWG so that they proactively participate in these committees to design fairer and egalitarian remuneration policies.

Like most studies, this research is subject to certain limitations. For instance, we focus only on Spanish-listed companies, and remuneration practices may be influenced by the type of firm, the industry and the institutional context. The board of directors in Spain is a one-tier board system. Furthermore, no regulation strictly requires reaching a quota of female directors. Therefore, we must exercise caution when seeking to extrapolate our results. Furthermore, the low proportion of female directors in our sample of boards of directors should be noted, despite working with the entire population. Finally, the Blinder–Oaxaca decomposition provides a valuable framework for dissecting the factors contributing to compensation differentials. However, the potential influence of unaccounted variables that may not have been addressed in the research of our model should be kept in mind. Our findings create encouraging opportunities for future research. This research may be extended by analysing different institutional contexts and conducting an analysis of a longer period (when the data are available) in which the participation of female directors is similar to that of males and at a time when women with greater academic training have reached these board positions (as noted in the theoretical framework). Another line of research could be aimed at studying the cases of family firms where the role of women is essential.

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