

Breaking The Glass Ceiling: The Impact Of Boardroom Diversity On The Gender Pay Gap

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ABSTRACT

This bachelor thesis investigates the relationship between boardroom diversity and the gender pay gap in large firms based in the United Kingdom. Boardroom diversity is considered through two dimensions: gender diversity (share of female executives) and nationality diversity (origin of executives with attention to gender quota policies). The gender pay gap, a persistent indicator of structural inequality, may be influenced by the composition of top level leadership teams. Using a cross-sectional dataset of 1280 companies, this study merges UK government gender pay gap disclosures with board composition data from Orbis. The analysis employs multivariate regression, interaction models and non-linear robustness checks to assess the relationship between leadership diversity and gender-based pay disparities. Control variables include company size, industry type, and public or private sector status. The results show that gender diversity in executive leadership is significantly associated with a lower gender pay gap, particularly when the portion of female executives exceeds the 30% threshold, supporting the critical mass theory. Nationality diversity alone does not show significant effect, and the interaction between gender and nationality was also found to be insignificant. However, company size and public sector status were influential, with larger firms tending to have smaller pay gaps and public institutions displaying wider gaps. This research contributes to the literature by integrating the concept of critical mass into empirical board composition studies and by exploring the underexamined role of executive nationality. These insights may inform firms, policymakers and stakeholders interested in enhancing equity through better governance practices and more effective diversity initiatives at the executive level.

"During the preparation of this work, the author used ChatGPT in order to review the writing and discover potential mistakes. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the work."

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Keywords

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1. INTRODUCTION

Only 25.8% of board seats were occupied by women in 2023 (MSCI, 2023), even though research indicates that companies with women in leadership roles run more efficiently and perform better overall (Adams, 2009). Despite the growing awareness and research, boardrooms of large corporations remain homogenous. This leadership homogeneity contributes to the persistence of the gender pay gap, as decisions impacting compensation structures are frequently made without diverse perspectives or lived experiences.

One key structural barrier is the glass ceiling, which is a metaphor describing the invisible yet enduring limitations that prevent women from advancing into executive roles. Having more women on the board of a company can mean that the glass ceiling for female employees is lower and would allow them to have the same growth opportunities as their male counterparts. However, research suggests that simply appointing one or two women is often insufficient to drive structural change. According to critical mass theory, a threshold, often cited around 30%, must be reached before minority voices begin to meaningfully influence decision making and organisational culture (Kanter, 1977; Lefley, 2024a). Without this, women may be seen as symbolic or token members, with limited impact on outcomes such as pay equity.

To counteract underrepresentation, many countries have implemented gender quotas, mandating a minimum share of women on corporate boards.

Norway was the first country to introduce gender quotas for national public limited companies in 2003. The quota requirement in Norway is such that at least 40% of the board representatives is female (Adams, R. 2009). Another example, The Netherlands, implemented a gender quota of at least 30% female board representatives in 2011. This applies to large private and publicly owned companies, however, there is no deadline and the only measure is “comply or explain”. This means it should be mentioned in the annual report, thus not penalised (De Acutis, 2024).

Beyond gender, boardroom diversity can refer to geographically diverse top management. Nationality diversity may bring varied perspectives and governance styles. However, the relationship between nationality diversity and gender equity outcomes, particularly their impact on the gender pay gap, remains underexplored.

This thesis investigates whether boardroom diversity, defined both in terms of gender and nationality, affects the gender pay gap in large United Kingdom (UK) based companies. Using a quantitative approach, this study analyses a dataset combining UK government gender pay gap reports with board composition data (ORBIS).

The research will explore how female representation and executives' countries origin have measurable effects on the gender pay gap. Especially, if those executives are from a nation with enforced gender quotas.

This study aims to contribute to identifying even partial causes of the gender pay gap as it adds value and can aid towards resolving the issue or at least narrowing the gap. When a cause is detected in a specific sector, such as large corporations in the United Kingdom, it is easier to eliminate one source of the gap and slowly build towards systemic change that tightens the gender pay gap.

One of those issues could be that quotas are often not enforced or are only applicable to public limited companies, this diminishes the desired effect of the quotas. Therefore, this study could offer some insights onto their impact and help to shape future policy and governance strategies.

Given the aim and practical relevance of this thesis, the focus will be on the executives for both gender and nationality. Executives, also referred to as top managers, are responsible for making organisation-wide decisions and for setting goals and plans that guide the entire organisation (Robbins & Coulter, 2018). These individuals typically include senior leadership roles such as Chief Executive Officers (CEO's), Chief Financial Officers and other C-suite professionals. Their decisions influence not only firm strategy but also internal policies such as compensation structures, making them critical actors in the context of gender pay equity.

Considering context, The United Kingdom present and unique and valuable context for investigating the gender pay gap due to its legislative framework and data transparency obligations. Since the introduction of the Equality Act in 2010 and the 2017 Gender Pay Gap Reporting Regulations, UK companies with over 250 employees are legally required to disclose detailed pay data disaggregated by gender.

This mandatory reporting provides a rich empirical foundation for assessing the impact of executive-level diversity on wage disparities. Moreover, the UK's approach to boardroom quotas is less prescriptive compared to countries like Norway or France, relying instead on voluntary codes such as the Hampton-Alexander Review and the “Comply or Explain” principle. This creates a varied corporate landscape where the effectiveness of non-binding diversity efforts can be contrasted with more rigid quota-based systems elsewhere, making it an ideal case for examining whether diversity at the top truly correlates with pay equity outcomes.

Considering all of the previously mentioned variables, the important issue that this research will address is whether having boardroom diversity quota works given that the industry and company size is similar. The important relationship that will be explored is the effect of nationality diversity on the gender pay gap. Within this relationship the interaction effect between nationality diversity and gender will be tested, to see if executives from countries with a gender quota are part of a company that has a lower pay gap. The research will begin with a literature review to identify existing findings and theoretical gaps. This will be followed by quantitative analysis of a relevant dataset to explore correlations between boardroom diversity and the gender pay gap. The research will be quantitative to represent the relationship between the gender pay

gap and boardroom diversity. However, in the findings portion of the research, the results will be analysed and uncover potential causes. The causes and effects will be cross-referenced with the literature background formed earlier in the paper to narrow the knowledge gap.

2. THEORETICAL FRAMEWORK

2.1 Gender pay gap and board composition

The relationship between gender diversity in executive leadership and the gender pay gap can be theoretically grounded in Organisational Justice Theory, which distinguishes between distributive justice and procedural justice (Greenberg, 1987; Colquitt, 2001). Distributive justice refers to fairness in outcome distributions, such as pay. Procedural justice is the fairness of the processes that lead to these outcomes. When female executives are adequately represented, organisations may be more likely to consider equity-oriented values and inclusive practices, thereby increasing perceived fairness in compensation structures (Cropanzano et al, 2007). This shift could not only affect formal pay-setting procedures but also influence informal norms around advancement. Moreover, the presence of women in decision-making roles may improve perceptions of legitimacy and fairness among employees (Lind & Tyler, 1988), potentially reducing systemic bias that contributes to the gender pay gap.

A paper written by G Singh Raina (2024), focuses solely on public active firms from the United States from 2005 to 2018. The dependent variable is the gender pay gap and is dummy coded with female CEO as 1, the hypothesis predicted a U shaped relationship between the amount of women on the board and the gender pay gap. Singh concludes that past a given threshold and an average board size of 9 members, that adding only one female member to the board composition as a “token” leads to an increase in the gender pay gap. Having only one woman on the board would mean that she is not taken seriously or does not have a say in the decision making process. Whereas, when the proportion is more balanced then the pay gap tend to decrease and more diverse decisions are made. Although the research does not specifically explain why this U shaped relationship exists, it suggests that the lack of women on boards causes a lack of insight into issues such as the pay gap.

Another paper written by Renée B. Adams (2009) analyses women in the boardroom and the impact they have on the gender pay gap. Using a panel of director level S&P 500 firms between 1996 and 2003, and logistic regression Adams determines that women overall participate more actively, have better attendance and that there is a positive correlation between gender diversity and firm performance. Although this paper does not directly examine the gender pay gap it does find that gender diversity does

have a positive effect on overall compensation for all employees.

A different paper written by M. Mostak Ahamed (2019), uses the same data as this thesis, has implemented control variables of firm size, sales growth and average remuneration. The paper is focused on the nationality of the board representatives and therefore hypothesises that the influence of foreign directors can be significant in the long term. The results indicate that firms with a higher variations of nationalities in their board composition, have a lower gender pay gap. The results further indicate that having more nationalities and a lower pay gap is economically beneficial. Firms in their research with more foreign directors tend to operate more efficiently and therefore have better performance numbers. The paper does not provide any explanation or suggestion as to why these results are the way they are, the evidence is empirical and not qualitative. This paper is not directly related to the topic of this thesis, however, it does show that board composition is of value to the gender pay gap. This theory section shows different angles at which the gender pay gap have been approached, thus showing the gap in academic research that this paper will fill. Therefore, from this literature review section a hypothesis can be derived: *hypothesis 1: Having a larger share of female executives will result in a lower gender pay gap.*

2.2 Boardroom Nationality diversity and gender quotas

Having a geographically diverse board bodes well for firm performance which was discovered by Estélyi in 2016 and again by Chen in 2025. However, while the benefits of nationality diversity have been explored in relation to financial outcomes and governance quality, its potential effect on the gender pay gap remains largely under-researched. Estélyi discovered that investors have a large impact on the board room diversity. They found that greater investor homogeneity relates to a more diverse board of directors. Investor interests tend to guide how the board is comprised, nationality diversity interests investors because then companies can make swifter connections abroad and expand their operations. Lastly, Estélyi found that foreign nationality directors tend to be assigned to important committees such as auditing and governance (Estélyi and Nisar, 2016). When combining nationality diversity of directors Kaczmarek found that the difference in values and personality traits helps facilitate good governance (Kaczmarek, 2021). Although existing literature does not directly link nationality diversity to the gender pay gap, these findings suggest that international executives may bring more inclusive governance approaches, potentially narrowing the gender disparities in pay. Therefore, hypothesis II is formulated as follows: *Companies with geographically diverse executives have a narrower gender pay gap.*

This narrowing can be facilitated through good governance as both these papers highlight the

positive effects of geographical boardroom diversity and they both draw the connection of geographical diversity to good governance. Good governance can be done through multiple ways, one of which is quotas.

Gender quotas are described as “a means of changing the structural properties of power and its distribution among groups and are intended to break down structures that maintain inequality” (Halrynjo, 2023). Since 2003, when Norway imposed the first gender quota, the topic of governmental intervention in firms corporate structures have been evolving. At first different governments hoped that expressing norms and expectations towards companies would have a “ripple effect” however that remained unseen (Halrynjo, 2023). Whether this was based on structural issues or biases such as “primary carer bias” is unclear and has barely been investigated. Primary carer bias is the common belief that women are the main guardian over a child and therefore have discontinuous work life. This creates consequences such as missing out on promotions or being paid less because “they are not worth the investment” (Halrynjo, 2023). Michel Ferrary (2024), who investigated the French approach to gender quotas, discussed how there is a difference between hard and soft laws and that the French adopted the critical mass approach. Soft law refers to recommendations made by policy makers on gender diversity, this type of law relies on social pressure from stakeholders. Hard law, on the other hand, are mandatory quotas with sanctions for non-compliance. France passed the Copé-Zimmerman law in 2011 which dictates a 40% diversity of board directors by 2017. This law was one of the first of its kind, since Norway was a soft law and did not have sanctions. Ferrary also discussed the critical mass theory. France’s and Norway’s quotas are above 30% because research shows that there should be a minimum amount of women on the board for there to be significant effects. Some researchers believe that this is because if there is only one female director, for example, then that woman is likely to try and separate themselves and act more “masculine”. Thus, the conclusion is that there is a critical mass of 30% of women on a board for them to be integrated as one of the board members instead of “the female director” (Lefley, 2024b). There is also research that looks into the general opinions around the quotas. The feelings towards the quotas can have an effect on how effective they are. Research done by Khemakhem uncovers the members perspective on the gender quotas. Using semi in depth interviews they find that most board positions are acquired through connections, not through vacancy and interviews. Furthermore, the consensus seems to be that women tend to feel intimidated to apply for mostly male dominated jobs because they think they won’t get it anyway (Khemakhem, Hanen, 2024). In The Czech Republic research shows that people are overwhelmingly opposed to quotas. There they believe that quotas take away the credibility of the female directors and people will assume that they got the job handed to them to fill the quota. This would have an adverse effect on how many people apply for the director job.

To link these papers and findings to the gender pay gap remains difficult as not many researchers have attempted this and therefore leaving a gap for this thesis to fill.

2.3 Contribution

This thesis will contribute to the current literature because it will determine whether nationality diversity and gender diversity are related to each other and whether the combination aids towards a narrower gender pay gap. Although this research is based on a United Kingdom based dataset, the executives in the dataset have different nationalities. Many papers write about foreign directors and their influence on firm performance and positive financial change, but there is limited research on whether having a diverse board causes effective change to the gender pay gap or not. If the research has significant outcomes, it can guide future in-depth research. The advancement of research can help form future policies on the diversity within the board room and possible quotas. Such that governments might invest more time into research on how to make the quotas more effective and they might enforce the quotas using a stricter approach.

3. METHODOLOGY

Since 2010 The United Kingdom (UK) requires companies, with an office in England, Wales or Scotland to submit the pay and contractual conditions of all their employees. The Equality Act including 2017 regulations, oblige companies to publish the difference in pay between their male and female employees. More than 10,000 firms have published this data. The dataset used in this analysis is 1280 observations based on the Equality Act data combined with Orbis data to include board compositions per company. The unit of analysis is the individual companies, given their difference in composition and type.

A quantitative, cross sectional analysis is conducted to observe the effect of board composition on gender pay gap on a firm level. Using multivariate regression models, the effect of different variables on the dependent variable – the gender pay gap.

Therefore, the dependent variable is the median hourly gender pay gap percentage. The percentage range is from negative to positive, where a positive percentage represents a higher salary for men and a negative percentage connotes higher pay for women. Both the mean and the median hourly percentage are included in the dataset, however, using the median gives more accurate representation of the variable since it is less prone to skewed results.

Given the size of the dataset and the many nationalities included, country groups of the nationalities of the executives have been created that are relevant to the quota portion of this research. The country groups include: United Kingdom, United States, Europe, Scandinavia. For

further analysis, Europe was split into Western, Northern, Eastern and Southern.

Europe, United Kingdom and Scandinavia were split due to their differing policies in quotas.

Western region contains Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland. Southern consists of Greece, Italy, Portugal, Spain. Eastern region is Estonia, Hungary, Lithuania, Poland, Romania, Serbia, Slovenia.

Northern region includes Norway, Denmark, Finland, Sweden. All of these are the share of executives from a certain country rather than the number of executives per country since the size of top level management differs per company.

The second independent variable is the share of female executives per company. For this variable it is also the share rather than the number of female executives to improve the accuracy of measurement.

To gain insight about the effects of quotas the interaction effect of the share of female executives is tested against the separate regions. This allows for deeper analysis – if the interaction effect is not tested then the analysis assumes female executives have the same effect across all regions. If region interacts more with share of female executives, it could be due to a quota if that region/country has one.

Analysis using a dataset with 422 variables requires control variables to isolate the effect of the relationship. The control variables for this research are the company size, government institutions and industry type. Both government institutions and the industry types are dummy coded. Due to the large number of industries the dummy variable was created for the three largest industries to observe the largest influence. As for government institutions, it is a binary indicator, where 1 is public sector and 0 is private sector.

The statistical methods that are used in this analysis are linear regression, interaction model, non-linear robustness models and a linear mixed model. Using Cook's distance model the outliers are filtered out, therefore, all analyses and graphs are done twice – once with all the datapoints and second time without the filtered outliers to create robustness.

4. DATA ANALYSIS

On average, the female executives are underrepresented in this sample. This reflects the continued gender imbalance at a leadership level. However, the sample is diverse which is shown in the large range of the median hourly pay gap, ranging from -60% (favouring women) to +50% (favouring men). The diversity in the sample is further emphasized in the different countries in the sample, however, the amount of non-UK nationalities is not proportionate the number of female executives with a UK nationality.

4.1 Linear regression

Regression Results: Gender Pay Gap Predictors					
term	estimate	std.error	statistic	p.value	significance
(Intercept)	17.04	2.88	5.92	0.00	***
ShareExec_Western	4.30	3.74	1.15	0.25	
ShareExec_Southern	-2.87	5.12	-0.56	0.58	
ShareExec_Eastern	-55.95	13.17	-4.25	0.00	***
ShareExec_UK	-5.05	2.74	-1.85	0.06	.
ShareExec_US	-2.84	3.62	-0.78	0.43	
ShareExec_Northern	-0.46	7.55	-0.06	0.95	
ShareFemaleExec	-3.86	1.81	-2.13	0.03	*
CompanySize	-0.89	0.42	-2.14	0.03	*
GovInstitution	6.57	1.86	3.52	0.00	***
NACE_Selected	1.93	0.84	2.29	0.02	*

Table 1
Linear regression results table

The multiple regression reveals the significant predictors of the gender pay gap. Including all the regions and the control variables, the regression output shows that majority of the regions are not significant. Despite the western region having the largest number of datapoints outside of the UK, it only had a p-value of 0.25. Southern and Northern also lacked significance, but they also had few datapoints in the sample. Interestingly, the Eastern region is strongly associated with a lower pay gap in this regression output. The United Kingdom nationality seemed to show marginal negative outcome even though it is most represented in the dataset.

The variable Share Female Executives is of small but stable significance to the gender pay gap. This confirms hypothesis I as correct.

As for the control variables, company size and government institution stand out. The outcomes from all the analyses show that larger companies tend to have smaller pay gaps. Whereas government institutions tend to show higher pay gaps. NACE4Code represents the industry type, this variable gave differing results throughout different regressions. The three industries chosen (4xxx, 6xxx, 8xxx) either had marginally higher pay gap or did not show up as significant.

4.2 Interaction model

Interaction Results: Gender Pay Gap Predictors					
term	estimate	std.error	statistic	p.value	significance
(Intercept)	17.18	3.31	5.19	0.00	***
ShareFemaleExec	-4.41	12.69	-0.35	0.73	
ShareExec_Western	3.23	4.55	0.71	0.48	
ShareExec_Southern	-1.98	6.32	-0.31	0.75	
ShareExec_Eastern	-22.64	20.24	-1.12	0.26	
ShareExec_Northern	-2.07	8.88	-0.23	0.82	
ShareExec_UK	-4.93	3.25	-1.52	0.13	
ShareExec_US	-4.67	4.17	-1.12	0.26	
CompanySize	-0.94	0.42	-2.26	0.02	*
GovInstitution	6.73	1.87	3.59	0.00	***
NACE_Selected	1.96	0.84	2.33	0.02	*
ShareFemaleExec:ShareExec_Western	5.85	16.20	0.36	0.72	
ShareFemaleExec:ShareExec_Southern	-3.83	18.84	-0.20	0.84	
ShareFemaleExec:ShareExec_Eastern	-111.87	53.32	-2.10	0.04	*
ShareFemaleExec:ShareExec_Northern	21.21	57.29	0.37	0.71	
ShareFemaleExec:ShareExec_UK	-0.16	13.03	-0.01	0.99	
ShareFemaleExec:ShareExec_US	13.16	16.64	0.79	0.43	

Table 2
Interaction effects results table

In the table above it is visible that the interaction between regions and share female executives are insignificant. From this the conclusion is drawn that the presence of female executives significantly reduces the gender pay gap, regardless of the nationality diversity within leadership.

To illustrate this pattern more clearly, Figure 1. *Average gender pay gap by quartile of Female executive share.*, displays the average gender pay gap across quartiles of female executive representation. The visual trend aligns with the regression results, showing a consistent decline in the gender pay gap as female representation increases, thus supporting hypothesis I.

Furthermore, the interaction model shows that the control variables have a significant impact on the gender pay gap as previously discovered in the regression model. The model itself is statistically significant overall, although it has low explanatory value.

4.3 Non-linear tests

To increase the accuracy of the research, non-linear models were created. These tests assess whether the relationship between female executive representation and the gender pay gap curvilinear or threshold based. The three approaches used are quadratic model, spline regression and piecewise model.

The quadratic model showed no significant results suggesting no strong curvilinear relationship.

Spline regression models the relationship between female executives and the gender pay gap in a flexible way to detect subtle changes without overfitting. This showed that one component is

marginally significant, meaning the relationship is slightly non-linear.

Lastly, in Figure 2. *Piecewise regression results.* determines whether there is a threshold at which the relationship changes. Past 30% share of female executives, where the blue line is placed, the model shows a decrease in the gender pay gap which therefore supports the critical mass theory in female leadership (Raina, 2024).

4.4 Robustness check

To assure the research is accurate and not skewed by outliers a robustness check is done.

Linking non the non-linear effects and validate the robustness of the linear regression results, a random forest model was used. It captures complex interactions and threshold behaviours that traditional regressions might miss given the size of the dataset. As seen in Table 3. *Random Forest results table.* the plot has the industry code listed as most influential variables. Furthermore, the plot confirms the relevance of female executive representation and institutional characteristics in predicting pay gaps.

To improve the internal validity of the regression model, the influential outliers were identified using Cook's Distance and subsequently removed. This refinement ensured that no single observation distorted the results. To assess robustness, the models were compared before and after the outlier removal. Through this method, the significance of Eastern European significance decreased from very significant (-55.89) to insignificant (-17.59). This suggests that the Eastern share influence was driven by a few very dominant cases. Other than that, the significance of female executives and the control variables remained and even the share of United Kingdom executives remained marginally significant. This result is explainable due to the large number of datapoint from the United Kingdom.

5. CONCLUSION

This study set out to examine the relationship between boardroom diversity and the gender pay gap in firms in the United Kingdom. Taking from a data set formed by the Equality Act and board composition information, the research used multivariate regression and non-linear tests to assess these relationships.

The results show that having diverse leadership has a significant impact on the lowering gender pay gap. Both gender and geographical diversity aids towards narrowing the gap. Especially, once the proportion female executives exceeds a threshold of 30%. These findings align with the critical mass theory in female representation discovered by Singh Raina (2024), who argues that token representation is insufficient to create meaningful change. Having more women represented in top management does lower the glass ceiling.

Nationality diversity seems to show less of an effect on the lower the ceiling for women in management.

This could be due to the limitations of the dataset rather than the real effect of geographical location.

5.1 Recommendations

Based on the findings presented above, some recommendations can be made for potential future research and implementation of the results into practical action.

5.1.1 Theoretical recommendation

The results of this study support the critical mass theory, which suggests that the presence of women in senior positions only begins to influence organisational outcomes once a certain threshold is reached, typically around 30%. The findings indicate that below this level, female executives may have limited impact on addressing structural inequalities such as gender pay gap, potentially due to their symbolic position. This aligns with Kanter's (1977) argument that minority group members can only effect meaningful change once they reach a critical mass that enables their voices to be heard.

Furthermore, the evidence supports the relevance of the Organisational Justice Theory. The narrowing of the gender pay gap in firms with more gender diverse executive teams may reflect increased fairness in both outcomes (distributive and procedural) (Colquitt, 2001; Cropanzano et al, 2007). These findings suggest that theories of tokenism and organisational justice should be considered in combination when evaluating the effects of diversity at the executive level. Future research could expand on this by exploring how gender and nationality diversity interact, and whether cultural differences among board members further enhance or complicate efforts to improve pay equity. Lastly, future research could also examine whether these theoretical frameworks apply similarly across cultural contexts and industry sectors.

5.1.2 Practical recommendation

This study provides actionable insights for both firms and policymakers aiming to address gender based pay disparities. For companies, the evidence suggests that increasing the proportion of women on executive boards beyond marginality may contribute to narrowing the gender pay gap. This implies that firms should not only focus on gender diversity compliance or optics, but prioritise the substantive inclusion of women in senior decision making roles. Initiatives such as inclusive recruitment practices, targeted leadership development for women and transparent promotion pipelines may help achieve this.

At policy level, the findings offer support for the use of gender quotas, provided they are informed by the critical mass theory. Quotas that merely place one or two women on a board are unlikely to generate significant organisational change. Instead, governments and regulators should consider setting thresholds that reflect the 30% benchmark shown to influence outcomes, in previous literature as well as this study. Additionally, policies that track more than just board membership but executive-level roles may

offer a more meaningful measure of gender equality in corporate leadership.

In short, both private and public actors have a role in narrowing the gender pay gap. Firms must move beyond symbolic representation and policymakers must design interventions that are grounded in evidence about the impact of diversity on governance and equity.

5.2 Limitations and future research

Given that this is a bachelor thesis there are some limitations to the research. Therefore, for future research some suggestions can be made. This study relies on firm-level cross-sectional data, which captures a snapshot in time rather than changes over time. As such, while associations between boardroom diversity and gender pay gap can be identified, the design limits the ability to make strong causal inferences. Longitudinal data would be required to track changes and establish causality more robustly. Due to the nature of the data, the geographical aspect of the dataset is limited. The dataset has uneven regional representation, decreasing the accuracy of the findings. If the European Union would adopt a policy similar to the Equality Act of the UK then there would be more geographical representation and this research could be improved or if the dataset included broader international coverage. This, however, is difficult due to the lack of policies regarding pay gap data publication. Lastly, an interesting result that could be useful for further pay gap research was the impact of the public institutions on the pay gap. Larger pay gaps in government owned establishments is rather ironic when imposing policies on firms to decrease the gender pay gap. Additionally, future research could incorporate longitudinal data to assess whether increasing female representation over time causes measurable improvements in pay equity.

While diversity policies are a step in the right direction, only well gender balanced leadership can effectively narrow the gender pay gap.

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8. APPENDIX

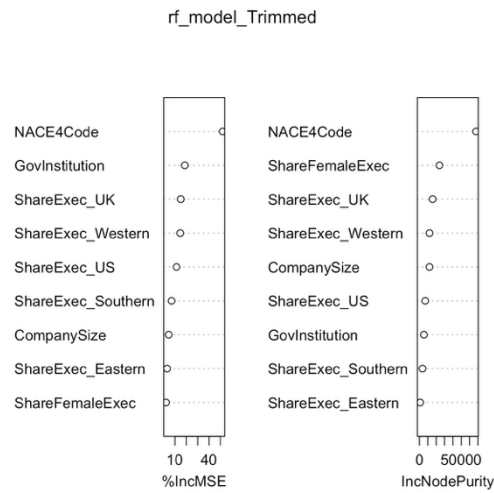


Table 3
Random Forest results table

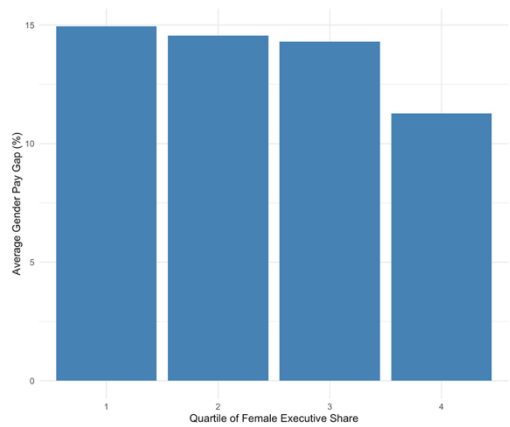


Figure 1
Average gender pay gap by quartile of Female executive share

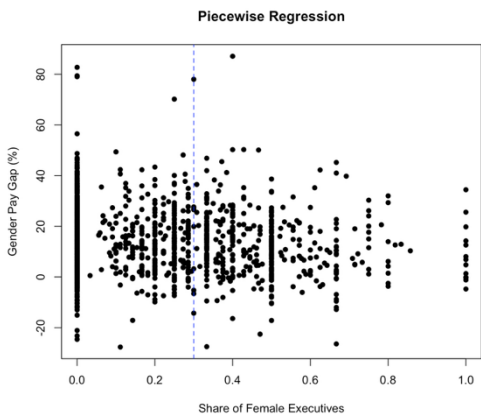


Figure 2
Piecewise regression results

