How do institutional policies and societal pressures shape gender-related pay disparities across different national contexts?

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ABSTRACT

This thesis examines how the collective influence of institutional policies and societal pressures shape gender pay disparities across 13 culturally and economically diverse countries between the years 2008 to 2023. As a global problem, despite decades of improvement, the gender pay gap remains a persistent issue mirroring both legal flaws and profoundly rooted cultural norms. Grounded on a manually built longitudinal panel dataset including 208 country-year observations constructed from national legislation, OECD, Eurostat, World Bank, Child penalty Atlas databases, and respectable media outlets, the analysis employs a fixed-effects model for time-varying policies variables and pooled OLS for studying cultural norms related data items to investigate how they affect our researched disparity in earnings between men and women. The findings partially verify the established hypotheses by revealing that non-transferable compensated leave reserved exclusively for fathers and binding pay transparency regulations aid in closing the unadjusted gender pay gap, while gender quota laws contribute an additional push for reduction. In contrast, strong motherhood penalties and traditional job entitlement beliefs widen disparities significantly. The study emphasizes that policy effectiveness is greatest in cultures where caregiving and paid work are more equally shared, moving along feminist-institutionalist theory and offering practical guidance for reform.

During the preparation of this work, the author used Scribens AI powered grammar check tool to fix grammar issues and expand vocabulary for repeated words, Scribbr AI powered citation generator to generate citations and cite sources, ChatGPT artificial intelligence to explain and help understand variables in R software language, fix reference list mistakes and use as an English language dictionary to look for lexical alternatives . After using these tools, the author reviewed and edited the content as needed and takes full responsibility for the content of the work.

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Keywords

Pay gap, gender equality, motherhood penalty, gender norms, gender policies, labor structure

1. INTRODUCTION

1.1 Situation and complication

The gender pay gap remains a complex, widely under-addressed and significant global issue. It plays a prominent role in everyday people's lives as it represents deep-rooted inequalities in labor markets (e.g., occupational segregation), institutional decisions (e.g. lack of female representation in top management positions), and overall societal structures (e.g. gender norms that associate men in leadership positions and women with caregiving roles). (World Economic Forum, 2023). This ongoing problem not only reinforces social injustice and limits women's rights to equal opportunities but also leads to disproportionate economic losses. They can result in both unfair use of their labor and increased risks of poverty and income inequality. (Kalabikhina et al., 2024). Despite the significant progress in female academic achievements and active participation in diverse labor roles over recent times (Kim, 2022), wage disparities and a considerable gap between men and women persist in various nations and sectors (Lee, 2020). It is accurate that the pay gap between countries significantly varies. Numerous factors influence this wage difference (Bari, 2023). These factors include diverse governmental policies aimed at addressing gender equality (Mataityte, 2021), cultural norms and constraints surrounding various expectations towards the choice of career paths, firm structures of labor markets and constant issues of gender discrimination and sexism reflected in an unexplained difference in the earnings between men and women (Wagner, 2018). This thesis puts forward that gender-based wage disparities are shaped by institutional policies and prevailing societal pressures. Institutional actions, which are represented by formal frameworks, encompass elements such as parental leave systems, pay transparency laws, state subsidies for childcare, and gender quotas in boards and various leadership positions. Conversely, societal pressures represent less formal but profoundly influential structures, like cultural norms concerning motherhood and breadwinning, societal expectations about women's career paths, and activism for equal pay. One example of how such societal pressures operate is through the existence of the motherhood penalty and the fatherhood premium. (Bari, 2023). The Motherhood penalty is a phenomenon during which women often experience slower career progression and must face lower income levels after giving birth to children. This occurrence can be apparent in various ways, such as more limited participation levels, reduced working hours, and decreased wages for mothers (Sieppi & Pehkonen, 2019). As a result, women move into part-time, family-friendly workplaces or less demanding jobs, sometimes at the cost of lesser earnings. (Claudia Goldin. n.d.). In addition, society at large and employers may interpret that being a mother is about less commitment to work, more focus on the family and hindered career growth. Conversely, fathers experience better working conditions after having a child and face so-called fatherhood premiums. It suggests that men are earning more and face better occupational stability after becoming parents (Bari, 2023). This can also be related to the societal expectations that men who become fathers are more committed to their jobs and must work to provide for their families since they are frequently perceived as "breadwinners" (Bari, 2025). However, the higher pay and earnings advantage is not necessarily explained by increased working hours or holding down a job at higher-paying firms (Claudia Goldin. n.d.). By investigating both trajectories, a more thorough understanding of how the gender pay gap differs between countries in terms of numbers and how it changes over time, influenced by various shifts in surrounding policies and societal attitudes, can be achieved.

1.2 Research Objective and Question

This research investigates how institutional policies and societal pressures have influenced gender-related pay disparities between the years 2008 and 2023 within thirteen selected countries. These countries were selected by the author with the purpose of comparing completely different foundations rooted in diverse socio-economic landscapes. Moreover, they also support clearly distinguishable policies concerning gender equality and distinct views and cultural approaches to gender-related roles. By employing a cross-national and longitudinal approach, the study aims to assess whether formal policy structures and informal societal dynamics can explain the existing gender pay disparity differences.

Through this comparative analysis, studies aim to answer the research question: *How do institutional policies and societal pressures shape gender-related pay disparities across different national contexts?*

1.3 Academic and Practical Relevance

Existing scholarly research revolved around the gender pay gap looking through the economic lens, mainly focusing on highlighting the inequality of financial and labor market structure (Bari, 2023). When considering the academic significance of this study, attention must be drawn to the value of this composite approach that addresses the existing literature on global gender pay gap dynamics. Significance can be understood through three major areas of contribution. First, the research employs a cross-national comparative analysis across thirteen diverse countries, including both, nations that are constantly well-researched, such as Iceland or the United States, alongside those that are more underrepresented and less frequently studied, like Latvia, Lithuania or South Korea. This broad scope is exceptionally valuable since most of the present literature tends to focus on Western Europe or single-country studies. By examining a vast range of governance systems with their own policy approaches, cultural traditions and norms, the research provides a more comprehensive global perspective on the examined gender pay gap identified in the literature. Secondly, the longitudinal panel design how the effects have changed over time spanning for sixteen years from 2008 to 2023, providing a longitudinal view of the data, allowing to investigate insights into changes rather than depending on static, single point in time observations that cover just a fixed snapshot. Lastly, a core component of these studies is the collective analysis of both formal institutional policies and informal societal pressures. This approach is innovative since it bridges two distinct areas of literature that are frequently studied separately, ultimately leading to a more comprehensive understanding of complex and inter-connected factors influencing the existing gender pay gap dynamics.

As a result, by bridging the missing research space of the policy and social dynamics effect on the pay gap in a cross-country context, the groundwork is believed to offer actionable insights for many stakeholders. This includes policymakers, organizational leaders and society itself. By examining the institutional systems such as policies regarding the paternal leave, pay transparency, this study aims to help recognize which particular forms of support from governments are the most effective in addressing issues with the wage disparity between genders. As a outcome, policymakers would be able to use this analysis findings to carry out informed decisions based on the factual evidence of widely applied equality measures. When

evaluating results across thirteen countries, the study helps to distinguish which type of laws are associated with a narrower wage difference between men and women in practice, not in theory. This can assist governments in deciding which measurements are worth strengthening or expanding in their own contexts as well as highlighting policy design differences. For organizations and managers, this study highlights the role of national-level policies in shaping workplace outcomes. For instance, understanding that pay gaps are smaller in environments with active transparency or inclusive leave systems may encourage companies to actively integrate and support similar measures internally. With the help of this study results, managers could become the drivers of positive change fighting inequality and discrimination at the workplace. Findings could inform managers about successful measures like openness concerning salaries, fathers childcare participation promotion or challenging biased assumptions in leadership selection that should be applied and followed internally in the organization. Lastly, for society at large, this research contributes to the spread of awareness regarding the gender pay gap problems, and how formal rules and informal norms interact to either close or sustain them. By identifying which societal pressures, such as culturally normalized traditional gender roles, continue to affect inequality, study helps to capture public reflection on the cultural expectations that shadow women's economic potential. In countries with more conservative norms, such knowledge as investigated in this research may support future efforts to shift social attitudes and reduce the opposition to reforms.

2. LITERATURE REVIEW

While some prior research has explored individual institutional reforms such as parental leave policies (Kramer, 2023) or pay transparency laws (Kim, 2013) and examined societal pressures such as activism (Larsen, 2021) or shifting gender-related norms (Wagner, 2018), there remains a notable research gap in studies that analyze these formal and informal influences together across multiple diverse national contexts over time. By comparatively investigating both policy and cultural effects across thirteen countries with varying institutional frameworks and societal norms, this study aims to provide a more comprehensive understanding of the factors shaping the gender pay gap. It seeks to provide a more profound understanding of how different combinations of institutional policies and societal pressures either facilitate or hinder progress in closing the divide in men and women earnings.

The gender pay gap remains a vital and persistent problem despite numerous of legislative, social, and organizational efforts (Corekcioglu, 2024). It refers to the average gross hourly earnings between women and men, usually expressed as a percentage of men's salaries (European Parliament, n.d.). Many studies have investigated the underlying causes of this disparity, identifying both institutional policies and societal dynamics as key drivers of wage inequality (Bari, 2023; Oladottir et al., 2024; Kim, 2013). The pay gap is frequently related to a combination of various factors. They include occupational segregation, motherhood penalties, fatherhood premiums, gender norms and preconceptions, and limited women's leadership roles. Even with controlling factors such as education, occupation, and experience, a pay gap persists, adding to the unexplained portion of the divide and possibly suggesting gender discrimination (Wagner I., 2018).

Research has shown that institutional policies can demonstrate a noticeable impact on wage differences (Oladottir et al., 2024). For example, parental leave schemes, particularly paid leave, were designed to provide the opportunity for both parents to take time off work and participate in childcare. It is the primary driving factor that can reduce the career interruptions women face after giving birth to a child, enabling them to combine employment with family life. However, this is not the case for all countries. The impact varies frequently between various national contexts. While Nordic nations, such as Iceland, adopt this dual model where both parents share paid and unpaid work (Haas & Rostgaard, 2011), in countries like Latvia, women take most of the leave (Javornik & Kurowska, 2017). Post-communist states are still reinforcing traditional gender roles. Subsidized childcare allows mothers to return to work more easily and seamlessly. The absence of such support, like it is in South Korea, expects women to participate in more unpaid work and, in a way, contributes to the broader gender pay gap. Gender quotas allow for the increase of women in management and leadership positions, indirectly affecting wage disparities. This aligns with the second hypothesis (H2), which proposes that nations with gender quota legislation on women's leadership posts have smaller gender pay gaps. Iceland is frequently seen as a leading example of a pioneer and leader in addressing the inequality between men and women (Oladottir et al., 2024). The effectiveness of these measures remains evident and persistent. Iceland's mandatory parental leave for both parents and gender quota legislation (Oladottir et al., 2024) are being linked to improved equality standards. In contrast, there is clearly some spotlight on massive gender pay gaps in countries with limited institutional support for work-family balance (Kang et al., 2023). South Korea remains a leading example of a persistent and significant pay divide, which reflects constant gender inequality and an apparent motherhood effect in women's labor market despite the country's economic growth (Lee, 2024). This supports the first hypothesis (H1), which expects that the greater the institutional policy support, the smaller the gender pay gaps are.

In addition to institutional policies, societal pressures play a role in voicing people's opinions and shaping the gender pay gap landscape (Bari L., 2023). Widespread protests, media debates, and constant shifts in society's gender norms can encourage efforts for institutional policies and improve organizational behavior. Countries that experience sustained public discourse around gender equality may thus exhibit reductions in wage disparities, even without new legislation. This supports the fourth hypothesis (H4), which proposes that societal pressures, such as protests, public debates, and media activity, are associated with reductions in the gender pay gap. The #MeToo movement has increased social awareness of gender-based harassment, encouraging discussion about pay equity (Zhang et al., 2020). The massive social disturbance motivated modern debate about policy changes both across the United States and beyond its borders. Despite massive widespread societal attention, various forms of sexism nevertheless exist and can affect how people respond to or support gender-related policies. Hostile or benevolent sexism continues to persist (Gothreau et al., 2022). This is evident in Latvia, where, due to

native beliefs, the public demonstrated resistance to the implementation of EU sex equality standards when people were questioning the Istanbul Convention's definition of gender (Isaacs & Rudzite, 2021). Some activists against it argued that the convention's understanding of gender conflicted with the country's constitutional description based on biological sex, highlighting how local national values and norms can clash with international equality standards (Isaacs & Rudzite, 2021).

Comparative cross-national investigation on gender pay disparities typically focuses on OECD or European Union averages, but there is limited academic research that would investigate the gap and interaction of policies and society across diverse cultural contexts beyond one unified country block like the EU, including South Korea, Iceland, Latvia and the United States, United Kingdom (Kang et al., 2023). By considering both of these high- and middle-income democracies with completely varied contexts, we are able to look for a more thorough understanding of gender pay equity. Research suggests that focusing solely on individual effects and explanations (such as education and job choice) risks the simplest systematic undervaluation of women's work (Kalabikhina et al., 2024). The combination of results from one or two separate academic research highlights the continual global impact of motherhood on women's pay. This supports the third hypothesis (H3), which states that the motherhood penalty is more substantial in countries with traditional gender norms. In addition, studies suggest the need to consider mother, father, and child in parental leave policies (Javornik & Kurowska, 2017). Different parental leave systems can significantly vary and influence the access of men and women to both paid work and caregiving roles (Javornik & Kurowska, 2017).

To guide this analysis, the study draws on theoretical perspectives from feminist economics and institutional theory. These frameworks emphasize that labor market outcomes are not only determined by individual choices but severely influenced by more complex, sometimes deeply rooted structural systems, social expectations, and gender norms. This perspective helps conceptualize how formal policies, such as paid parental leave systems, gender quotas, and pay transparency laws, together with social pressures like cultural attitudes, influence gender-based pay disparities across different national contexts.

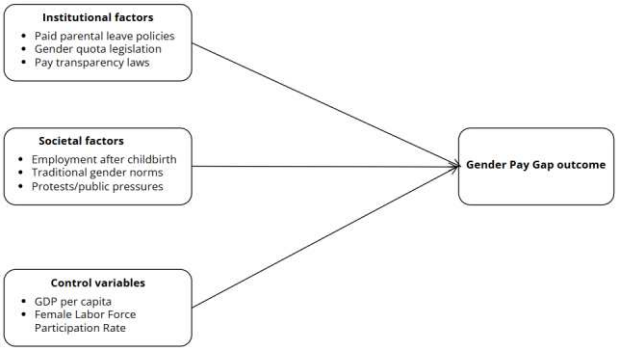

Figure 1. Conceptual framework for the study

3. METHODOLOGY

3.1 Research Design

The research utilizes a quantitative panel data approach using a longitudinal design aimed at investigating the influence of formal institutional frameworks and informal cultural factors on the gender pay gap. Collectively, these formal and informal elements play a significant role in shaping disparities, such as the discussed gender pay gap. The analysis is based on a panel dataset observed over time. The data contains necessary information from 13 countries, observed for 16 years between 2008 and 2023, resulting in a firmer balanced dataset of 208 observations. This broader approach was strategically implemented to achieve better generalizability of the findings and produce stronger and more reliable statistical conclusions. The dataset was manually constructed by the author using primary sources such as national legal texts, OECD (Organisation for Economic Co-operation and Development) and Eurostat, and World Bank databases, official government sources, and selected reputable news outlets. Selected countries were carefully chosen based on the ideal combination of available data, highly contrasting and differing cultural norms, and variations in gender policies to conduct the most meaningful cross-national comparison.

To effectively examine both within-country changes over time and between-country differences, the study adopted panel regression designs. More specifically, a Fixed effects model was used to examine the impact of time-varying variables. In addition, Pooled Ordinary Least Squares (OLS) were applied to test variables that do not vary much over time, such as cultural norms tested in H3. Models are estimated using robust standard errors, making the results more trustworthy to address the potential accuracy if the errors are spread unevenly. However, the variable Child Penalty used in H3 varies over time, so the model captures both within and between-country variation, possibly resulting in biased estimates. It is important to note that although the panel data structure enables the opportunity to attempt analysis over time, the use of time-invariant cultural variables in the pooled OLS model may limit the strength of the causal conclusions. Moreover, by implementing a balanced approach, the study is able to capture both longitudinal developments and cross-country variation, which is essential to answer the research question.

3.2 Data and Measurements

This study analysis relies on a manually constructed panel dataset containing 208 observations across 13 countries from 2008 to 2023. Each observation corresponds to a unique country-year pair, meaning that every row (or data point) in the dataset represents one specific country in one specific year. The dataset includes both time-varying and time-invariant variables, enabling both a comparative and longitudinal analysis. A summary of the key variables that were employed in the analysis, providing a transparent overview of how institutional, societal, and control variables were operationalized and measured across countries and over time, can be found in Appendix A.

The dependent variable is unadjusted gender pay gap, which is defined as the percentage difference in median earnings between men and women. This data item was derived from internationally acknowledged, well-known sources of OECD and Eurostat and was manually incorporated by the author into the constructed panel to ensure cross-country comparability.

The independent variables used in this research fall into three fundamental categories: institutional policy indicators, societal pressures, and traditional gender norms. There are few institutional policy measures accurately reflecting a country's formal commitment to gender equality. PaidSharedLeave captures the total months of leave with pay available to both parents, while FatherLeaveMonths refers to paid leave that is

exclusively designated for fathers and cannot be transferred to a mother. The necessary presence of legal frameworks and local law enforcement such as gender quotas or pay transparency is reflected through binary variables indicating the existance of such laws. Additionally, to assume the actual career change between fathers and mothers after the first child is born in the family, the ChildPenalty measure was implemented. Societal pressure is measured using binary variable ProtestOccured. It indicates whether a notable protest or widespread campaign related to gender equality took place in a given country-year. Ultimately, traditional gender norms are measured using three time-invariant variables indicating cross-national differences derived from OECD attitudinal survey data. TradNorm_MotherSuffer reflects societal expectations about caregiving, TradNorm_MenExec captures attitudes towards leadership roles and TradNorm_JobRights represents labor market emblement.

Furthermore, model includes key control variables GDP per capita and the Female Labor Force Participation Rate (FLFPR). Along with that, women's education levels were initially considered. However, the education data was excluded from the final model due to extensively missing data points, which might have caused a significant effect on the full model.

While manually constructed, all variables were collected in a structured panel format. Policy duration reported in a different format than months were standardized and converted using the formula: 1 month is approximately worth 4.3 weeks. Missing data values were coded as NA.

For comprehensive descriptions of each variable, please refer to the variable definitions table in Appendix B.

3.3 Data Collection

The panel dataset used in this study was manually constructed by the author through a comprehensive and rigorous process of data compilation, standardization, and coding. The dataset covers 13 countries over the period of 2008 to 2023, resulting in a total of 208 country-year observations. Each observation (row) corresponds to a specific country each year, while every column reflects one of the 14 variables, of which 13 were included in the analysis. The dataset was assembled using a mixed approach. Variables such as PaidSharedLeave, FatherLeaveMonths, GenderQuotaLaw, PayTransparencyLaw, and ProtestOccurred were manually gathered and coded from national legal documents, government archives, and reputable news sources. In contrast, variables including Gender Pay Gap (GPG), Child_Penalty, TradNorm_MotherSuffer, TradNorm_MenExec, TradNorm_JobRights, GDP, and Female Labor Force Participation Rate (FLFPR) were sourced from standardized datasets provided by institutions such as OECD, Eurostat, and the World Bank and integrated into the panel manually. All values were organized and cleaned by the author to ensure consistency and alignment with the panel structure.

Data were gathered using a variable-centric approach rather than a country-centric manner, meaning the author focused on each variable's status and evolution across all 13 countries instead of collecting all the data for one nation at a time. Most data was extracted from primary sources. Mainly, it included national legal acts, government archives, policy documents, and official formal announcements. Only a small fraction of manual data included news reports and articles from secondary trusted sources. As the incredibly detailed and reputable sources are prepared by the national institutions, most of the data was in the country's native language. When relevant information was exclusively available in non-English languages such as Korean, German, Icelandic, or Portuguese, it was translated using automated plug-in tools and then interpreted manually. Exceptional care was exercised to ensure consistency and credibility of the data, to guarantee reliability and accuracy. For that reason, priority was assigned to official and legal institutional sources instead of secondary media coverage. All sources were logged in a master reference Word document table.

Institutional Policy variables like PaidSharedLeave and FatherLeaveMonths were measured in months. Due to inconsistencies and gaps in international datasets such as OECD's "Key characteristics of parental leave systems" dataset (PF2.1) or "Use of childbirth-related leave benefits" (PF2.2), these values were manually compiled by the author through a systematic review of national legislations. Leave durations were standardized (1 month = 4.3 weeks) and rounded to ensure cross-country comparability, allowing for precise year-by-year tracking of legal reforms.

Binary variables like GenderQuotaLaw, PayTransparencyLaw, and ProtestOccurred were coded as one if a relevant policy was implemented or a major significant enough (high people participation > 5000 people involved) protests occurred in a given year, and 0 when otherwise. The variables were also coded manually after verifying reforms or events through official legal texts, government news archives, and statements from policymakers or advocacy organizations. Only well-documented and credible cases were included. However, some smaller-scale reforms or protests may have been missed due to translation challenges or a lack of public records. Every effort was invested to minimize such omissions and ensure data quality and accuracy.

The study additionally uses three time-invariant variables that reflect national-level attitudes toward gender roles: TradNorm_MotherSuffer, TradNorm_MenExec, and TradNorm_JobRights. These indicators were derived from the OECD's most recent attitudinal survey data from the year 2023. Variables were held constant and applied uniformly to all years for each country under the assumption that firmly rooted traditional contracts in a national country context evolved slowly. The absence of annual data presented an issue, but this assumption in our research nevertheless provides a valid representation of societal views towards genders in national contexts throughout the study period.

Missing data values were handled very carefully. For variables like FatherLeaveMonths, there are no missing values. Meaningful absence of policy was explicitly coded as 0, indicating lack of practice rather than missing information. However, other variables, like GDP per capita or WomenEducation levels, where few occasional values were missing due to inconsistency in reporting, were coded as NA. During the analysis, they were handled with listwise deletion. For that reason, prioritizing the data quality, one control variable, women's education rate, was excluded from the final model since it had approximately 21% missing observations. Since no interviews, surveys, or personal data were collected, ethical review was not necessary.

In summary, the data collection process is described as a combination of manual legal analysis, careful standardization and harmonization of indicators, and systematic source documentation in order to produce a transparent and meaningful panel dataset. Further details on each variable, its coding criteria, and data sources are provided in Appendix C.

4. RESULTS

This part outlines the statistical results of the regression analyses used to test four specific hypotheses concerning institutional frameworks and societal influences on the gender pay gap. To analyze the independent variables that change over

time, such as parental leave policies and protest activity, gender quota, and pay transparency laws, fixed panel regression models were applied and studied for hypotheses one, two, and four. For variables that remained the same across the chosen period of time, the traditional norms and prevailing attitudes of nations, pooled ordinary squares (OLS) regression was used, which examined for hypothesis three. All four statistical models used the same two control variables, which were the GDP per capita and female labor force participation rate. Control variables helped to consider the differences in economic development and the extent of women's involvement in the labor market across countries over time.

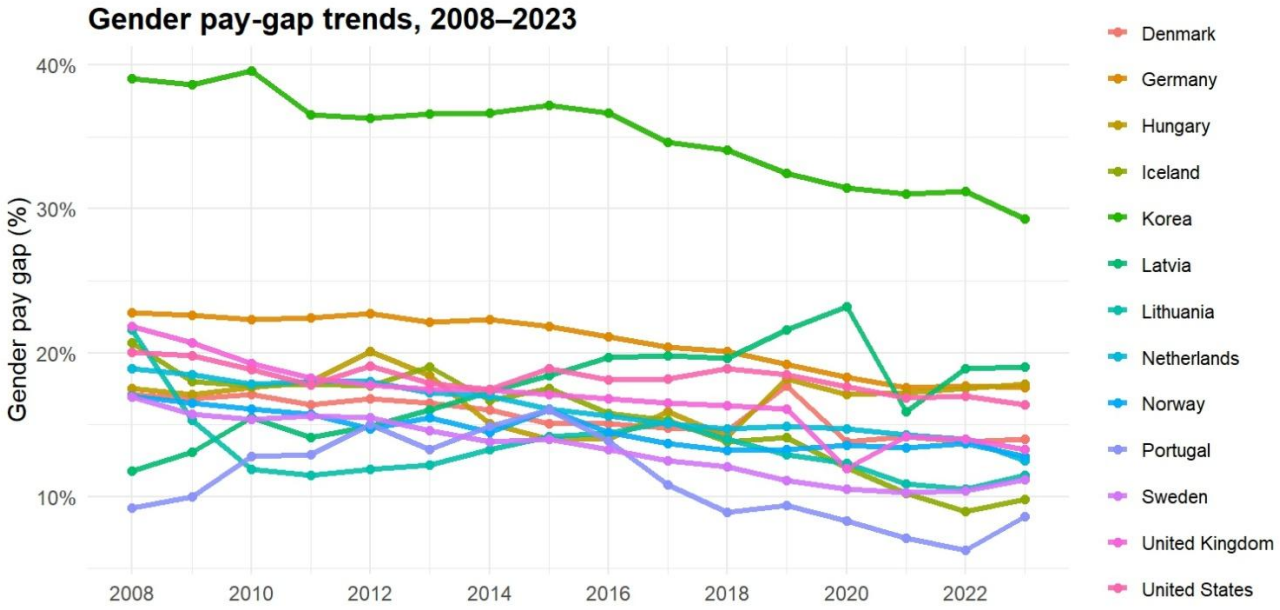

Figure 1. Gender pay gap trends (2008-2023) across 13 countries

Ahead of delving into regression results, Figure X pictures the unadjusted gender pay gaps across 13 countries spanning 16 years from 2008 to 2023. While some countries (Portugal, Sweden, Iceland) display a declining downward trend in sex wage disparities, others, such as Korea and Germany, show persistently higher and relatively stable pay gaps. These differences highlight the importance of researching the issue of how institutional policies and cultural norms shape gendered earnings outcomes, which is the core focal point of the four hypotheses tested below.

The first hypothesis (H1) suggested that higher levels of institutional support should be linked with the lower gender pay gap. This was partially supported by the results since two variables indicated statistically significant relationships out of four. More specifically, reserving paid parental leave for fathers (FathersLeaveMonths) demonstrates a statistically negative association with the gender wage disparity (β = -0.8832, p = 0.002), suggesting these specific paternal additions significantly contribute to wage equality. Additionally, the presence of pay transparency laws (PayTransparencyLaw) was also shown to be significantly important for the reduction of the pay gap between men and women (β = -1.312, p = 0.0066). It revealed that awareness of colleague's compensation reduces wage inequalities and helps to fight pay discrimination. However, the general paid shared parental leave (PaidSharedLeave) demonstrated quite surprising results as it followed in not statistically significant effect (p = 0.169), implying that the variable itself may not be sufficient alone and it would be inaccurate to state that an increase in paid shared leave would reduce the gender pay gap across countries and years. This might be because offering divided parental leave does not automatically mean that male parents will actually be using time off work, and as the previous variable shows that, when the leave is not solely designed for fathers (only fathers can use it, otherwise they lose it), they are less likely to take advantage of such policy. Interestingly, the investigation of legislative requirements for minimum female representation in leadership positions (GenderQuotaLaw), which was also examined separately in the separate hypothesis, revealed an insignificant effect (p = 0.085), signaling a potential tangible effect that such laws could help reduce the wage discrepancies between men and women. A more specific investigation of this variable was made when testing the second hypothesis. It is also important to mention that both control variables were statistically significant. Higher GDP per capita was associated with a reduced gender pay gap (p = 0.0350), while increased female labor force participation also contributed to lower wage differences (p = 0.0499), supporting the relevance of macroeconomic factors. To conclude, the model proved that approximately 21.06% of changes in the gender pay gap within each country over this period can be explained by institutional policies and included control variables. For more detailed statistical outcomes of H1, see Appendix D.

The second hypothesis (H2) provided a more comprehensive representation along with greater empirical support for the statement investigating whether lawfully required women's representation in leadership roles contributes to a lower gender pay gap. Results showed that the presence of such quota laws (GenderQuotaLaw) was significantly associated with a decrease in wage inequality as it had a negative relationship with the gender pay gap (β = -1.7195, p = 0.027). This outcome suggests that institutional requirements for women's inclusion can produce beneficial impacts on overall labor market equity. Furthermore, the model also showed that both control variables remained significant, with GDP per capita (p < 0.001) and female labor force participation (p = 0.0031) collectively contributing to explaining variation in wage gaps. Together, these quota and

control variables explained 11.03% of the variation in the gender pay gap that occurred within each country during the years 2008 to 2023. See Appendix E.

The third hypothesis (H3) explored the theory that creation of family and traditional cultural norms contributes to the persistent gender pay gap. The findings from pooled OLS regression analysis provided strong support for this hypothesis. One of the most groundbreaking discoveries in this model was the substantial child penalty (Child_Penalty), revealing a highly positive effect on the gender pay gap ($\beta = 2.349$, $p < 2e\text{-}16$), confirming the economic disadvantage experienced by women, due to the motherhood. Somewhat similarly, the variable representing societal principles regarding men's and women's roles in the labor market (TradNorm_JobRights), was positively linked to a higher gender pay gap ($\beta = 5.264$, $p < 2e\text{-}16$), representing gendered standards and beliefs about labor roles. In contrast, the percentage of people who believe that children suffer when a mother chooses to pursue her career (TradNorm_MotherSuffer) was negatively associated with the gender pay gap ($\beta = -2.641$, $p < 2e\text{-}13$). Interestingly, the outcomes are unexpected, and slightly strange as the expectations were that stronger traditional norms should cause more inequality, not less. The outcome could be due to its prevalence in countries that possess more active institutional support (like Nordic countries). There traditional perceptions might exist with more advanced levels of gender equality. And lastly, the contrast was represented by the support for males as better business executives than women (TradNorm_MenExec) capture some cultural bias. It tested as not significant ($p = 0.278$) and had limited explanatory power in our selected context and did not have lots of influence over the wage disparities in our selected context. Both control variables, GDP per capita ($p < 0.001$) and female labor force participation ($p = 0.0157$) remained statistically important in this model. All things considered, the model itself demonstrated very high explanatory power. Adjusted R^2 of 0.7847 indicating that 75.5% of the variation of the gender pay gap across countries can be explained in this model by the traditional beliefs together with controlled macroeconomic and demographic factors (GDP and FLFPR). For a more comprehensive look at teh statistical outcomes, see Appendix F.

The final fourth hypothesis (H4), using the fixed effects model, investigated the influence of social pressure, specifically through the occurrence of protests about the inequality and disparities in the wage gap between men and women. The regression analysis revealed that despite the major gender inequality-related activism (ProtestOccurred) coefficient was negative and could be associated with lower pay gaps, the relationship resulted as not statistically significant ($p = 0.588$). It reveals that protest activities by themselves directly did not hold an apparent or consistent effect on wage inequality. One of the most promising assumptions would exist that protest movements, while symbolically powerful and inclusive, do not directly concern the pay gap. Furthermore, the binary nature of this model possibly hinders the power and influence of this variable. Despite the non-significant effect, the control variables GDP per capita ($p < 0.001$) and female labor force participation ($p = 0.0026$) indicated a significant negative relationship with the gender pay gap. Lastly, the model explained comparatively low explanatory power, with an adjusted R^2 of 0.0886. Meaning, that only about 8.9% of the variation in the gender pay gap was accounted for, appearing as the weakest model up to this point when compared with the preceding ones. This massive contrast highlights that in this study, societal pressure was the lowest and appeared to deliver the least tangible impact on the gender pay gap compared to institutional policies and traditional and cultural beliefs. To review statistical outcomes, see Appendix G.

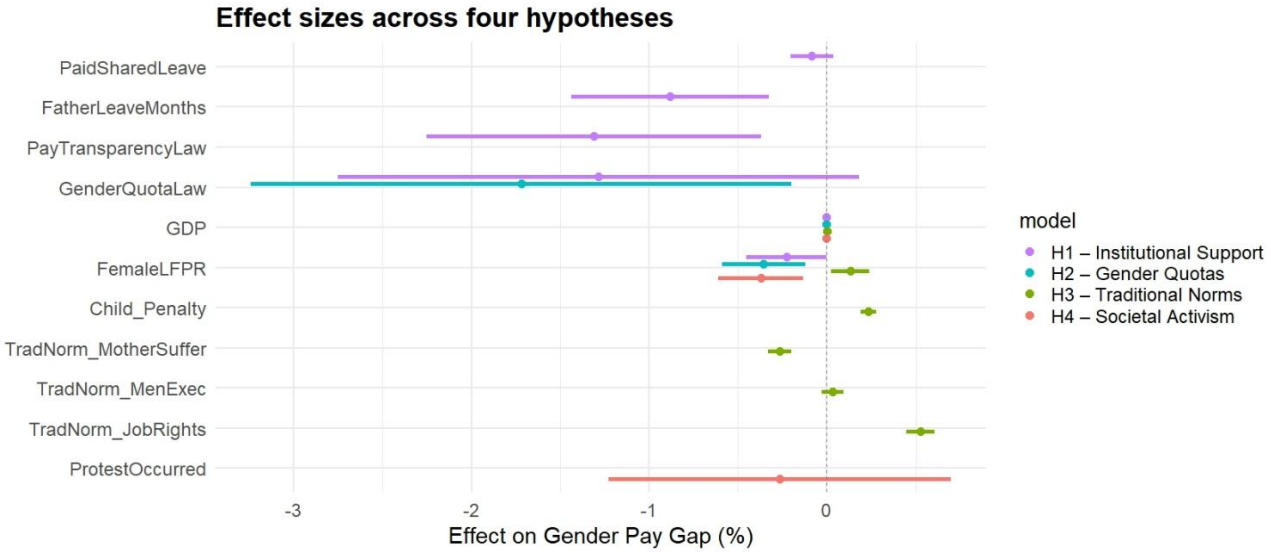

Figure 2. Predictors that narrow or widen the gender pay gap

This figure illustrates the estimated impacts of the key independent variables from the four hypotheses models (H1 - H4). Each point depicts the estimated effect of a given predictor on the gender pay gap, while the horizontal bars represent 95% CI. Instead of demonstrating individual model outputs, this plot highlights the patterns of which variables consistently show strong inverse associations with the gender pay gap, indicating statistical significance. The coefficient plot demonstrates that among institutional variables, father-specific leaves and quota laws cause robust adverse effects, with confidence intervals that do not cross zero, implying statistical significance. Shared leave and pay transparency laws also exhibit negative coefficients. However, their CI does include zero, suggesting weaker effects. Meanwhile, in the norms model, traditional views about men in executive roles and maternal sacrifice are associated with higher gender pay gaps, showing statistical significance. In contrast, variables representing the rights to a job show a positive coefficient, unexpectedly implying a counterintuitive relationship. The effect of protest activity is slightly negative but not significant as the interval demonstratively crosses a zero

point. Lastly, the control predictor GDP per capita loses significance in the robustness check across all models, although previously, it showed a minor significance when tested separately in several models (H1, H2, H3, and H4). As it might be found surprising at first, few of the possibilities that the within-country variation is too slight as GDP tends to vary more between nations, not much within each country over time, which is important to take in when the fixed effects model is used or suggest that cultural variables play a more influential role in explaining wage disparities than macroeconomic growth alone. In summary, the plot supports the robustness of specific predictors, indicating a strong and clear effect on the researched gender pay gap, and highlights the statistical significance of the variables.

Since this study is analyzing the panel data, which includes multiple years from the same nations, some of these values are simply more similar within a country than across various nations. Moreover, the amount of variation is possibly uneven across all countries, as some may be more stable compared to others. For that reason, to ensure the adequate reliability of regression estimates, cluster-robust standard errors methods were carefully applied. If the study does not examine the reliability of these estimates, the model can provide results that may seem more certain than they are in practice by proving significant when it is, in fact, incorrect. In this study, it helps to ensure that conclusions, such as "father-specific leave reduces the gender pay gap," are honest and based on reliable statistics instead of being falsely assumed by accident. The results confirm that father-specific leave policies are reliable predictors and continue to reduce gender wage disparities. Similarly, the traditional norms and child penalty remained highly significant as they demonstrated a consistent association with compensation inequality. On the contrary, gender quota laws and pay transparency policies, although negative as expected, became statistically weaker after the error adjustment, indicating their influence is less robust. Lastly, the protest activity, together with GDP per capita, failed to show statistically significant results, indicating they are poor predictors of the examined gender pay disparities in this dataset. For more factual information, see Appendix H.

5. DISCUSSION

These results provide a firm foundation to discuss the conclusions concerning this study research question: “How have institutional policies and societal pressures shape gender-related pay disparities across different national contexts?”. The aim of this section is to objectively evaluate how the institutional policies and societal pressures tested influence the gender pay gap (GPG) and to what scale these outcomes align with the available theoretical expectations. Later in this section, the discussion seeks to contextualize the empirical results by comparing findings with existing studies, theories, or real-world scenarios.

5.1 Institutional Factors

The analysis demonstrates that institutional policy instruments such as parental leave design (PaidSharedLeave, FatherLeaveMonths), pay transparency laws (PayTransparencyLaw), and gender quotas (GenderQuotaLaw) serve as a significant systematic factor with a straight link to a narrower earnings disparity. This aligns completely with the given hypothesis that equalizing leave structures, especially through the non-transferable time off for fathers, effectively helps mitigate the economic disadvantages that women encounter in the labor market. Results reveal that reserved, non-transferable leave for fathers (FatherLeaveMonths) is significantly associated with and confirms hypothesis assumptions. Meanwhile, the length of general paid shared leave available for both parents (PaidSharedLeave) shows an expected negative sign but is not statistically significant. These results present proof and correspond extensively with the idea discussed by previous scholarly work by Ferrarini and Duvander (2010), who argue that not only the existence of parental leave provisions plays a critical role but also their structural design. This study emphasizes the idea that a poorly designed leave system (long but unpaid or disproportionally targeted at mothers) may reinforce the gender roles even more, forcing women to take time off while men's employment remains unaffected. This can indirectly contribute to long-term disparities in earnings and overall career possibilities. Moreover, eminently suited leave systems that promote shared caregiving responsibilities can aid in reducing the motherhood penalty by helping women participate in the labor force faster and more seamlessly from the early stage of family life. Likewise, this aligns with Koslowski et al. (2021), who argue that dedicated father quotas are crucial, as they can challenge traditional caregiving views and contribute to better gender equality. For instance, this theoretical reasoning is also reinforced by the real-world results in countries such as Iceland. The country, famous for its progressive family programs, introduced the first exclusive paternity leave in the 2000s, distinguishing the three months of non-transferable quota for each parent out of a total nine-month period. This structure institutionalized caregiving as a shared responsibility and embedded gender equality in the core of policy design instead of labeling gender roles from the foundational institutional level. As of this date, the country is widely known for its one of the lowest gender pay gaps in the whole world, illustrating the capability of targeted procedure changes and precautions that could be taken to influence long-term economic and social outcomes.

In addition to parental policies, the body of laws determining the right to know your colleagues' earnings also plays a critical role. The observed negative effect of the pay transparency law on GPG reinforced the usefulness of such lawful mechanisms in governing the firm's behavior. However, the significance of this pay transparency laws relationship weakens when testing robustness, suggesting that the impact may depend on the context (effective only in some countries) and may not be consistent everywhere. Nevertheless, by constraining hidden gender bias and common informational asymmetries, pay transparency legislation helps fight wage discrimination in the workplace. This finding is consistent with the initial research by Kim (2015) and Cullen & Pakzat-Hurson (2021), which presents that salary disclosure helps to build more equal payment structures and reduces unexplained wage differences. In practice, the Icelandic Equal Pay Standard (IEPS) demonstrates an excellent example of this approach by requiring companies to prove fair pay for equal work, produce statistics in the workplace, and guarantee just rights for their employees. This helps reduce the burden of evidence by shifting responsibility from employees to employers and promoting a more objective and transparent pay system. Similarly, building on the findings from this hypothesis test, the observed negative coefficient for gender quota laws (GenderQuotaLaw) in the institutional model, although shown as insignificant, suggests the potential for the contribution of leadership allocations to reducing wage inequalities between the sexes. It reveals that despite a broader procedure combination where quota laws are assessed alongside other policies, they still appear to reduce the gender pay gap. However, as this variable is more extensively examined in the second hypothesis, it will be discussed in greater detail in the subsequent paragraph.

5.2 Gender Quota Laws

Expanding the findings on the previous model, which indicated that formal policies contribute to a smaller gender pay gap, the second one exclusively focuses on quota laws as separate institutional mechanisms to assess their direct impact. As a result,

this analysis demonstrates much more outstanding significance, implying that legally binding requirements to increase women's participation on boards exclusively can serve as an important driver for wage equality between the sexes. Continuing this finding supports scholar Bohnet's (2016) work, which states that quotas are effective in two ways – to eliminate formal barriers such as biased hiring and biases impacting present employees, like unfair promotions. Making women in decision-making posts visible helps to develop and change the views of the people so that women are treated more equally compared to men, additionally encouraging fairer terms in wage negotiation. It was also described in Thelen's (2012) work, where he explained that formal altercations have the weight to influence broader cultural and organizational transformations over time. Such outcomes were displayed correctly in Norway, where mandatory 40% quota laws passed in 2003 evolved in women's board representation increase from 6% (2002) to 40% by 2008. Even though quotas encountered lots of opposition, particularly from male executives, due to concerns about undermining meritocracy, studies proved "golden skirts" (the belief that a small number of women are benefiting from gender quotas when appointing for board positions) a myth, showing that women appointed are often as, or more competent than their male colleagues. Despite all the resistance, findings of the second hypothesis confirm the view that such laws help to reduce wage disparities. Continuing, this supports the idea of quotas functioning as the helping and symbolic tools as well as representing fairness and normalization of male-dominated leadership (Bohnet, 2016). However, it is important to highlight that even though gender quotas show a small negative association with smaller gender pay gaps, this effect did not remain statistically significant after performing a robustness check, suggesting that this cannot be applied universally to all contexts.

5.3 Traditional Gender Norms and Inequality

The results from the pooled OLS model for the third hypothesis provide a complex but intriguing mix of interplay among traditional gender norms, cultural attitudes, and the gender pay gap across countries. This assumption anticipates that more traditional societies, ones that hold stronger conservative views toward women's roles in family and career choice, would experience wider gender pay gaps. A key finding in this model represents the positive association linking the child penalty and wider disparity in wages between genders. This highlights that not just gender discrimination, lack of education, or unfavorable policies but motherhood itself is a major reason why women earn less than men. Even when legal help and support exist, females' earnings drop after having a child compared to men, affecting career and long-term measurable outcomes, which consequences in a higher pay gap between genders. These outcomes again reinforce the literature stating that motherhood is one of the most severe penalties women face in their careers (Kleven et al., 2019). Despite the presence of parental time off policies, like Iceland's non-transferable leave quotas to each guardian regardless of their marital status (Lárusdóttir et al., 2022), studies suggest that the effectiveness of such procedures is being hindered by real-life conditions in practice. Real-life obstacles such as economic constraints (cannot afford to take leave even if it is offered due to low income) (Kelland et al., 2022) or conservative views (mother should stay at home, father should work) (Krants-Kent, 2009; Bianchi et al., 2006) continue reducing the policy impact. The consistency and profound impact of the child penalty shows that women still face lower wages after becoming mothers. This highlights the importance of considering the economic situation or cultural expectations, especially towards a disproportionate burden of unpaid care responsibilities determined by the society itself, which actively continues to shape national pay disparities.

Regarding the cultural attitudinal norms, the results show that societal agreement that men should possess a greater right to a job than women is also strongly and positively correlated with the gender pay gap. This supports the conservative, long-standing understanding of beliefs about fundamental gender roles. This also confirms previous study findings by Fortin (2005) and Charles & Grusky (2004), who argue that differences between males and females in the job market are not simply caused by official rules or laws, but about deep-seated beliefs on what both genders are "supposed" to do. For example, in South Korea, persistent patriarchal norms and traditional views continue to constantly constrain women's professional or career opportunities (Rim & Kim, 2023). This typically happens due to tension between socially acceptable expectations of a woman's role as a caregiver, which often conflicts with the "ideal worker requirements" (E. H.-W. Kim, 2017). Conversely, perceptions about male leadership dominance, assuming men are better leaders, resulted in a positive but statistically insignificant effect on the gender pay gap. It suggests that in countries where people assume that men are better-suited executives than women, the pay gap tends to be higher, however it could be a random effect since the results state that there is not enough evidence to say this is reliable or even true. The probable cause for these outcomes could be that resembling societal perception about male leadership may not directly convert into measurable wage inequality that this research is comparing. Moreover, actual barriers to women's leadership consider numerous other implications and are more complex than just plain perceptions.

Surprisingly, the third norm variable representing society's beliefs that a child is suffering when a mother decides to pursue her career countered assumptions with a statistically significantly negative coefficient. The unexpected finding of the reduced gender pay gap can be interpreted with more well-thought-of reasoning. Rather representing a traditional view that might disadvantage and harm female parents professional outcomes, a higher value of this variable may indicate already increased social awareness or understanding of the challenges faced by working mothers. As a consequence, in countries where such concern is openly expressed and discussed, society, government, and employers potentially have already implemented or are being more encouraged to introduce supportive systems (supportive childcare, part-time work, return to work incentives).

5.4 Protests and Public Mobilization

The latter model investigating the fourth hypothesis, which proposed that protest activity would directly reduce the gender pay gap, was not statistically significant in any specifications. This outcome is entirely different from the assumptions and deviates from previous scholarly projections, particularly diverging from the claims of Weldon and Htun (2013), who argued that sustained feminist activism represents the leading driver of gender equality reforms. However, the reason possibly lies within the research operationalization and standardization. The binary measure used for the analysis may be overly simple to capture the differences between minor events and large-scale impactful protests and cannot comprehend the nature or the media influence of protest activities. Furthermore, looking at historical points, the conclusion can be derived that protest indirectly affects the gender pay gap. Landmarks such as Iceland's women's strikes, where female employees used to leave their workplace after they stopped getting paid (according to the gender pay disparity), sparked immediate political responses. Strikes helped to raise questions about increased pay

transparency and female quotas in leadership positions, influencing the reforms of the Equal Pay Act and the first Gender Equality Act, demonstrating the societal pressure power (Larsen, Moss, & Skjelsbæk, 2021). For that reason, the conclusion can be produced that the disappointing results regarding the occurrence of demonstrations underline that its effect on the gender pay gap is often indirect and delayed, typically unfolding through legal reforms or shifts in social attitudes. This brings to attention the idea that the economic impact of activism can be extremely dependent on the context and possibly require a more advanced research model to capture the possible effect of this complex social phenomenon.

5.5 Conclusion

This study performed a extensive analysis of how institutional policies and societal pressures collectively shape the gender-related pay gap across culturally diverse national contexts through the years 2008 to 2023. This analysis underscored that fundamentally, both formal policy frameworks and informal cultural effects are both important in shaping the effects on wage equality. Furthermore, subsidized parental leave for fathers, as well as implementations of pay transparency, were significant in shaping the pay gap by shrinking it by 1 to 1.3 percent. Additionally, gender quota laws pushed even further towards equity. On the other hand, research revealed that even though legislations are statistically significant, the gender pay gap is primarily shaped by the deeply rooted cultural attitudes towards motherhood, caregiving and labor market entitlement differences based on gender. The single most prevalent driver of inequality remains the motherhood penalty, which was highlighted the most in societies that agree that men are more entitled to jobs than women. Furthermore, societal protests proved to be insignificant. However, it is believed that their influence is indirect and delayed, often visible through changing policy reforms or shifts in social attitude. To conclude, this study provides a combined complex perspective, which confirms that labor dynamics and gender pay gaps are heavily influenced by political reforms and changing societal gender norms.

5.6 Practical Implications

Based on these research findings collected across 13 country panel, various practical implications may be derived that guide three major “levers” that significantly affect the gender gap. Each of them corresponds to a specific group of stakeholders who are in the position to initiate direct action and are in a position to implement immediate use of the results. Those are public policymakers, employers, and culture-shaping actors.

For public policymakers at the national and EU levels, the findings suggest that simply adding general parental leave entitlements is less impactful than refining existing policies with targeted, well-designed features. The research shows that general paid time off length is significantly unassociated with gender wage equality, signaling that quality is more important than quantity. Among those significant findings remains the fact that the provision of reserved, non-transferable paid parental leave to fathers secures a significant effect in minimizing gender differences in wages. Policymakers should, therefore, implement “use it or lose it” quotas for fathers as a way to encourage both parents to participate in raising the child and share the responsibilities, mirroring successful models as the ones used in Sweden or Iceland. Such quotas enable families to distribute the “burden” instead of trading careers. Undistinguishably, quality over quantity logic applies when it comes to pay transparency. The research highlights that regulations requiring companies to report and validate wage data (like how mandated by Iceland’s Equal Pay Standard) are far more effective than basic disclosure obligations and transposing them into national law is not enough. Instead, implementing the upcoming EU directives or any related laws should require compulsory audits to more effectively enforce and ensure compliance while driving progress toward closing the wage gap.

The key takeaway for employers and human resource managers is that legal reforms alone are not enough to close the gender pay gap in the workplace. Actual progress requires that these reforms be embedded into ordinary organizational culture. To take advantage of the benefits, companies should involve proactive steps such as encouraging male employees to make use of and reserve parental absence for them and, most importantly, ensuring these fathers are undisturbed with work during that period. This aligns corporate practice with policy intentions, supporting shared parental responsibilities and mitigating the motherhood penalty, as well as promoting equality in caregiving. Pay transparency should additionally become a routine HR practice. To reduce the gender wage disparity, employers are encouraged to regularly examine how much employees are paid within similar job categories or roles and address any unjustified compensation gaps. Lastly, to counteract the motherhood penalty, managers should offer an opportunity for a phased return to the workplace by providing employees with the freedom to select part-time options and arranging flexible hours or work from home after parental leave. This is also important to protect workers' promotion eligibility after they return from leave.

Beyond policymakers and workplace managers, society plays a crucial part in addressing the gender pay gap, as everyone has a role in creating change. As it was revealed in this study, the presence of conventional beliefs, such as that men are more entitled to a job than women, is highly statistically linked to higher gaps in earrings between genders. Therefore, the public fosters an environment where inequality can persist, even if formal rules are fair and well-established. The changing of these beliefs is within the power of individuals, who may serve as the drivers of progressive change. Individuals can actively help shift these social standards by openly supporting campaigns that normalize equal gender norms and responsibilities. This includes speaking out against outdated stereotypes and spreading awareness about problems prevailing in society. Through facilitating equality in routine life, the public as a whole is positioned to be a part of long-term cultural change that is equally as important as policies or institutional reforms.

5.7 Theoretical Implications

The findings of this study provide several academic contributions to the available literature on gender inequality. By incorporating both cultural and institutional controls into a comparative longitudinal regression design, covering thirteen culturally and politically diverse countries over a 16-year period, this research provides a unique contrastive perspective to emphasize the power of formal policies and informal beliefs on the gender pay gap. The findings align with the available theories from feminist economics and structural inequality, confirming that labor market outcomes are shaped by institutional design and are unneutral. This indicates that the study confirms the assumptions that the economy is not gender neutral and policies, labor markets, and institutions often support male-dominated norms instead of guaranteeing equality for everyone. Consistent with previous research by Ferrarini & Duvander, (2010) and Kim (2013), variables such as reserved paternity leave and pay transparency laws in this study extend the idea that institutional factors are significantly associated with the decline in gender pay gap.

However, the study's most notable theoretical contributions come from the comparison between formal institutional factors and informal societal norms. Perhaps the most important finding is the identification that cultural norms,

explicitly those related to motherhood, caregiving, and labor market entitlement, were more powerful predictors than formal policies by themselves. This reshapes and challenges the dominant policy-centered lens in the existing literature. Interestingly, the traditional norm of the belief that children suffer when a woman decides to pursue her career was linked to the lower wage gaps in some contexts. This results in the initial assumption being challenged, which assumes that all conservative values promptly lead to increased inequality. This result highlights the significance of addressing the complex interaction between culture and policy when investigating topics related to human behavior. Given that long-living attitudes may interact with institutional policies in more complex ways than previously theorized, any forthcoming academic work on the gender pay gap should be extensively focused on addressing and thoughtfully integrating them into institutional models more often.

5.8 Limitations

This study acknowledges that it includes several limitations. To begin with, the dataset was constructed manually from sources across different countries involving translations, which hindered the searching abilities of protests. This could potentially mean that some protests were overlooked together with smaller-scale reforms. The reliance on time-invariant value-based variables derived solely from 2023 OECD survey data, applied uniformly for 16 years, constrains the strength of causal conclusions. The study might not be fully able to make strong and confident claims since it is harder to say whether the societal attitudes caused alterations in the gender pay gap because the cultural data do not evolve, while the outcomes could potentially shift. Moreover, the snapshot is unable to allow carefully examine the complex interplay of cultural perceptions, such as the "aura of equality," which presumes a widespread belief that gender-equal opportunity is high, even though it could potentially hide ongoing inequalities because people simply believe further change is unnecessary. As a result, a fixed snapshot of the data might suggest high equality, hiding the fact that real disparities nevertheless exist. Besides that, there is also one more limitation in the estimation strategy used in H3. Although the pooled OLS model allowed the inclusion of both time-variant (child penalty) and time-invariant (traditional norms) variables, it does not control for specific and important country traits, resulting in risk for potential bias (e.g., countries with high child penalties also have a culture that strongly discourages working mothers).

In addition to this, the binary variable "ProtestsOccured" is overly simplistic as it does not capture how activisms can be diverse in nature and have a delayed impact. Lastly, due to the research's inability to completely capture policies like gender-designated allocation and pay transparency, such as achieving actual parity versus meeting bare minimum compliance, or the impact of quotas limited to a small part of the company, the study states that these findings are more directional than final absolute truths. Finally, the results may not be universally applicable to all national contexts as they mostly resemble those generally high-income or well-developed economies with established political and regulatory systems.

5.9 Future research

Future research ought to demonstrate a greater analytical insight by not just counting the number of laws that exist and their effect but instead by delving further into the complex dynamics of the gender pay gap. Researchers should move beyond the binary indicators and connect to the specific data by examining the way in which reforms are applied in practice. In particular, they ought to design more complex models to analyze the extent to which many fathers actually take parental leave, investigate the organizational implementation of measures and their performance, and assess the effectiveness of wage audits when incorporated. This would help to determine whether laws truly result in behavioral changes that contribute to a reduced gender pay gap.

Furthermore, studies should continue exploring attitude questionnaires alongside the regulatory framework to better capture the co-evolution of norms and policy. This is especially valuable when altitudinal surveys are conducted annually, across all research years, rather than just once. In fact, norms are constantly evolving, shifting gradually or rapidly in response to events, laws, media, or activism that are happening in a fast-paced world.

Third, further academic work should capture finely graded metrics that reflect detailed differences rather than oversimplified binary outcomes. This would allow for a more nuanced understanding of social and political events. For example, this can include the same variables, namely as protests measured at the deeper level, including their complexity factors in scope, media richness, and focus of the event. These types of detailed data could help uncover subtle ways in which protests shape public attitudes or push for change, even though they do not directly contribute to the emergence of new laws.

Finally, expanding the sample with the inclusion of lower-income and non-OECD settings like countries in Africa, Asia, or Latin America would help to reveal even more detailed real insights into whether the motherhood penalty operates similarly as recorded in wealthier contexts. An addition of diversity would allow researchers to test how different forms of identity, such as gender, race, and social class, interact and overlap to increase inequality. By looking at a broader perspective rather than focusing solely on women as one uniform group, research can further explore the role of intersectionality in shaping labor outcomes.

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7. APPENDICES

Appendix A. Descriptive summary of key study variables

Variable	Type	Time-Varying	Source	Mean	Min	Max
GenderPayGap	Continuous	Yes	OECD, Eurostat	17.27	6.30	39.61
PaidSharedLeave	Continuous	Yes	National Legislation	14.09	0.00	32.00
FatherLeaveMonths	Continuous	Yes	National Legislation	1.97	0.00	12.00
GenderQuotaLaw	Binary	Yes	Legal Database	0.52	0.00	1.00
Child_Penalty	Continuous	Yes	Child Penalty Atlas	9.70	-0.50	31.80
PayTransparencyLaw	Binary	Yes	Legal Database	0.28	0.00	1.00
ProtestOccurred	Binary	Yes	Reputable Media	0.20	0.00	1.00
TradNorm_MotherSuffer	Continuous	No	World Values Survey	25.62	12.30	52.80
TradNorm_MenExec	Continuous	No	World Values Survey	15.77	3.20	40.20
TradNorm_JobRights	Continuous	No	World Values Survey	8.96	1.10	27.90
GDP	Continuous	Yes	World Bank	37607	11226	95271
FemaleLFPR	Continuous	Yes	World Bank	64.83	43.56	84.82
EduWomen	Continuous	Yes	Eurostat	37.63	12.38	68.43

Appendix B. Variable Definitions and Structuring

Themes	Variable	Definition
Dependent	GPG	Unadjusted Gender Pay Gap, expressed as the percentage difference between male and female median earnings.
Policies	PaidSharedLeave	Represents the total number of months of paid parental leave available to both parents, either through shared entitlements or non-transferable quotas. Values are based on national legislation and official data sources
	FatherLeaveMonths	Number of Months of paid leave reserved exclusively for fathers (non-transferable).
	GenderQuotaLaw	Binary variable: 1 in years were gender quotas for corporate or political leadership was in effect; 0 otherwise.
	PayTransparencyLaw	Binary variable: 1 in years where pay transparency policies were enacted or in force; 0 otherwise.
	Child_Penalty	the long-term employment penalty that women experience after having their first child, compared to men (percentage gap in employment between mothers and fathers, averaged over several years after childbirth)
Cultural norms/beliefs	ProtestOccurred	Binary variable: 1 in years where major protests or strikes occurred related to gender pay equality; 0 otherwise.
	TradNorm_MotherSuffer	Percentage agreeing that 'children suffer when mothers work for pay'. Reflects traditional caregiving expectations.
	TradNorm_MenExec	Percentage agreeing that 'men make better business

		executives than women'. Captures bias in leadership roles.
	TradNorm_JobRights	Percentage agreeing that 'men should have more right to a job than women'. Indicates labor market discrimination beliefs.
Controls	GDP	GDP per capita in USD, measured annually. Reflects national economic development.
	FemaleLFPR	Female labor force participation rate (% of working-age women participating in the labor market).

Appendix C.1. Paid Shared Parental Leave (PaidSharedLeave)

Country	**Coding rule / years**	**Full legal citation(s)**
Iceland	2008-2019: 9 months (3+3+3) Act 95/2000 2021-2023:12 months (4+4+4) Act 144/2020	Lög um fæðingar- og foreldraorlof Act 95/2000; Amendment Act 144/2020
Latvia	2008-2022: 4 months shared Labour Law Art 155 2023: 6 months shared 2023 Parental-Leave Reform	Darba likums Art 155 (pre- & post-2023 texts)
South Korea	2008-2023: Each parent entitled to 12 months; shareable sequentially	EEO-WFBA Art 19; Employment Insurance Act Art 70
United States	Coded 0 all years – no federal paid parental-leave statute	— (No federal legislation)
Denmark	2008-2021: 32 weeks shared Barsellov 566/2006 2022-2023: 26 weeks shared Lov 343/2022 & LBK 1391/2023	Barsellov 566/2006; Lov 343/2022; LBK 1391/2023
Lithuania	2008-2022: 12 months shared (low-paid) Law IX-110 2023: 24 weeks @ 60 % Law XIV-752	LSMSI IX-110; Law XIV-752 (2023)
Germany	2008-2014: 12 + 2 ‘partner months’ BEEG 2015-2023: ElterngeldPlus adds bonus weeks	BEEG (2006); ElterngeldPlus Law 2014
Hungary	2008-2023: 24 months GYED + 12 months GYES (transferable)	Acts LXXXIII/1997 §42-43; LXXXIV/1998 §20
Netherlands	2008-2021: 26 weeks unpaid (benefit) WAZO Art 6:1 2022-2023: 9 weeks @ 70 % pay Wet betaald ouderschapsverlof	Wet arbeid en zorg Art 6:1; Stb 2021 595
Norway	2008-2023: 46 weeks @ 100 % or 56 weeks @ 80 % (shareable after quotas)	Ot.prp. nr 56 (2008-10); Meld. St. 6 (2011-12)
Portugal	2008-2018: 5 months shared Lei 7/2009 2019-2022: no length change 2023: 6 months shared Lei 53/2023	Lei 7/2009; Lei 53/2023

Sweden	2008-2015: 480 days + Gender-Equality Bonus 2016-2023: Three 'daddy months'; total length unchanged	Socialförsäkringsbalk Ch 12; Prop 2007/08:93
United Kingdom	2008-2014: maternity/adoption only (no sharing) 2015-2023: 50 weeks shared SPL Regs 2014	SI 2014/3051 & 3055; Statutory Maternity Pay Regs 1986 r.7(2)

Appendix C.2. Father-Only Paid Leave Quota (FatherLeaveMonths)

Country	**Coding rule / years**	**Full legal citation(s)**
Iceland	3 months 2008-2019; 4 months from 2021	Acts 95/2000 & 144/2020
Latvia	0.5-month 2008-2022; 3 months from 2023	Labour Law Art 155
South Korea	12-month individual quota throughout; bonus-pay reforms 2014/16/22/24	EEO-WFBA Art 19; MOEL decrees
United States	0 months – no quota	—
Denmark	6 weeks '08; 10 weeks '09-10; 12 weeks '11-12; 14 weeks '13; 10 weeks '14-17 ; 5 weeks '18; 19 weeks '19-23	Lov 343/2022
Lithuania	1 month 2008-2023 (unchanged)	LSMSI IX-110; Law XIV-752
Germany	2 Partner-months 2008-2023	BEEG; ElterngeldPlus Law 2014
Hungary	1 month low-paid + 5 days birth leave (unchanged)	Acts LXXXIII/1997 & LXXXIV/1998
Netherlands	2 days '08-18; 5 days '19; 6 weeks from 2020	WAZO Art 4:2; Wet PAB 2018; Stb 2020 141
Norway	6 weeks '08; 10 weeks '09-10; 12 weeks '11-12; 14 weeks '13; 10 weeks '14-17; 15 weeks '18; 19 weeks '19-23	Ot.prp. nr 56; Prop 12 L 2018
Portugal	2 weeks '08-14; 3 weeks '15-22; 4 weeks from 2023	Lei 7/2009; Lei 53/2023
Sweden	2 months '08-15; 3 months from 2016-23	Socialförsäkringsbalk Ch 12; SFS 2016:828
United Kingdom	0 months '08-09; 2 weeks '10-14; 0 months 2015-23	Employment Act 2002; SPL Regs 2014

Appendix C.3. Gender-Quota Law (GenderQuotaLaw, binary)

Country	**Years coded 1**	**Legal trigger & threshold**
Iceland	2013-2023	40 % corporate-board quota – Act 13/2010
Latvia	—	No statutory quota
South Korea	2008-2021 political lists ≥ 30 %; 2022-23 listed-board ≥ 30 %	POEA Art 47; FSCMA Art 165-20
United States	—	No federal quota
Denmark	2008-2023	≥ 40 % gender balance on large public boards – GE Act LBK 1095/2007 Art 11
Lithuania	—	No quota law
Germany	2016-2023	30 % listed-company supervisory boards – §96(2) AktG
Hungary	—	No quota law
Netherlands	2022-2023	33 % 'in-flow' quota – BW 2 142b-c

Norway	2008-2023	40 % quota for ASA boards – Allmennaksjeloven § 6-11
Portugal	2008-2023	Political candidate quota 33 % → 40 % – Lei Org 3/2006; 62/2017; 1/2019
Sweden	—	No statutory quota
United Kingdom	—	No binding quota

Appendix C.4. Pay-Transparency / Equal-Pay Law (PayTransparencyLaw, binary)

Country	**Years coded 1**	**Legal instrument**
Iceland	2018-2023	Act 56/2017 – Equal-Pay Certification
Latvia	2018-2023	Labour Law §32(3) – employer pay-gap data
South Korea	2019-2023	EEO-WFBA amendment – wage disclosure
United States	—	No federal transparency statute
Denmark	2014-2023	Act 513 (2014) – gender pay statistics
Lithuania	2017-2019	Labour Code §47 (6) – equal-pay report
Germany	2017-2023	Entgelttransparenzgesetz (2017) + §21 update 2020
Hungary	—	No pay-gap disclosure statute
Netherlands	2022-2023	WNT 2 – public-sector pay publication
Norway	2018-2023	Equality Act §28 – annual wage stats
Portugal	2021-2023	Portaria 55/2021 – employer pay-gap plan
Sweden	2008-2023	Pay-survey duty – Discrimination Act Ch 3
United Kingdom	2017-19 & 2021-23	Equality Act 2010 s.77 + GPG Regs 2017

Appendix C.5. National-Level Protest on Gender-Pay (ProtestOccurred, binary)

Country	**Years coded 1**	**Main event(s)**	**Source**
Iceland	2010, 2016, 2018, 2023	Nationwide "Kvennafrí" women's strikes	National media coverage
Latvia	—	No nationwide protest identified	—
South Korea	2017, 2019	"Stop at 3 o'clock" walk-out (2017); Equal-pay demos (2019)	Yonhap; Korea Times

United States	2017, 2019, 2023	"A Day Without a Woman" (2017); USWNT equal-pay rally (2019); UN IWD march (2023)	NY Times; AP
Denmark	2010, 2021	Equal-pay-day action; culture-sector strike	DR; Politiken
Lithuania	2019	Vilnius equal-pay march	LRT
Germany	2009, 2015	Equal-Pay-Day marches (20 Mar)	Tagesschau
Hungary	—	No nationwide protest identified	—
Netherlands	—	No nationwide protest identified	—
Norway	—	No nationwide protest identified	—
Portugal	2017	Country-wide demonstrations for pay equality	Público
Sweden	2016, 2018, 2023	#LönHelaDagen walk-out (2016); IWD pay rallies	SVT; Aftonbladet
United Kingdom	2008, 2018, 2023	TUC Equal-Pay-Day rallies; #MeToo pay marches; IWD protests	Guardian; BBC

Appendix D. H1: Policy Support (Fixed Effects) Regression: GenderPayGap ~ PaidSharedLeave + FatherLeaveMonths + PayTransparencyLaw + GenderQuotaLaw + GDP + FemaleLFPR

Variable	Coefficient	Std. Error	t-stat	p-value
PaidSharedLeave	-0.084	0.061	-1.381	0.169
FatherLeaveMonths	-0.883	0.282	-3.133	0.002
PayTransparencyLaw_binary	-1.312	0.477	-2.749	0.007
GenderQuotaLaw_binary	-1.286	0.743	-1.730	0.085
GDP	-0.000	0.000	-2.123	0.035
FemaleLFPR	-0.227	0.115	-1.973	0.050

Model Statistic	Value
R^2	0.279
Adj. R^2	0.211
Observations	208
F-statistic	12.21
p-value (F)	1.378e-11

Appendix E. H2: Gender Quotas (Fixed Effects) Regression: GenderPayGap ~ GenderQuotaLaw + GDP + FemaleLFPR

Variable	Coefficient	Std. Error	t-stat	p-value
GenderQuotaLaw_binary	-1.719	0.771	-2.231	0.027
GDP	-0.000	0.000	-3.633	0.000
FemaleLFPR	-0.355	0.118	-2.996	0.003

Model Statistic	Value
R^2	0.175
Adj. R^2	0.110
Observations	208
F-statistic	13.55
p-value (F)	4.661e-08

Appendix F. H3: Traditional Norms (Pooled OLS)
Regression: GenderPayGap ~ Child_Penalty + TradNorm_MotherSuffer + TradNorm_MenExec + TradNorm_JobRights + GDP + FemaleLFPR

Variable	Coefficient	Std. Error	t-stat	p-value
Intercept	1.263	3.279	0.385	0.701
Child_Penalty	0.235	0.022	10.511	0.000
TradNorm_MotherSuffer	-0.264	0.034	-7.815	0.000
TradNorm_MenExec	0.033	0.030	1.087	0.278
TradNorm_JobRights	0.526	0.040	13.008	0.000
GDP	0.000	0.000	5.287	0.000
FemaleLFPR	0.132	0.054	2.437	0.016

Model Statistic	Value
R^2	0.791
Adj. R^2	0.785
Observations	208
F-statistic	126.74
p-value (F)	1.598e-65

Appendix G. H4: Activism (Fixed Effects)
Regression: GenderPayGap ~ ProtestOccurred + GDP + FemaleLFPR

Variable	Coefficient	Std. Error	t-stat	p-value
ProtestOccurred_binary	-0.264	0.488	-0.542	0.589
GDP	-0.000	0.000	-3.918	0.000
FemaleLFPR	-0.372	0.120	-3.095	0.002

Model Statistic	Value
R^2	0.155
Adj. R^2	0.089
Observations	208
F-statistic	11.71
p-value (F)	4.433e-07

Appendix H. Robustness check results (clustered standard errors)

Variable	H1 Estimate (SE)	H2 Estimate (SE)	H3 Estimate (SE)	H4 Estimate (SE)
PaidSharedLeave	–0.039 (0.058)			

FatherLeaveMonths	**–0.883 (0.427)**			
PayTransparencyLaw	–1.312 (1.270)			
GenderQuotaLaw	–1.286 (1.296)	–1.719 (1.026)		
Child_Penalty			**2.349 (0.298)**	
TradNorm_MotherSuffer			**–2.641 (0.487)**	
TradNorm_MenExec			**3.299 (0.370)**	
TradNorm_JobRights			**5.263 (0.500)**	
ProtestOccurred				–0.264 (0.488)
GDP	–0.00005 (0.0003)	–0.00009 (0.00006)	**0.00008 (0.00003)**	–0.0001 (0.0001)
FemaleLFPR	–0.227 (0.236)	–0.355 (0.230)	0.324 (0.183)	–0.371 (0.239)