The Impact of Women’s Representation on the Gender Wage Gap Across the United States

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Abstract
The gender wage gap has been a persisting phenomenon across the United States despite the Equal Pay Act and increases in the educational attainment of women. In more recent years, as women’s representation has increased, how has the gender wage gap reacted? This study looks at the impact that women’s representation has had on the gender wage gap within each of the individual states across the United States. The research first presents a theory for how the gender wage gap could be connected to representation in state legislatures, the judiciary, and company boards. The article then tests three hypotheses that each of these forms of representation would lead to a smaller gender wage gap through regression analysis using state ideology as a control variable. After conducting regression analysis on representation and the overall gender wage gap in a state, the research incorporates an intersectional perspective by conducting similar regression analysis four more times using the gender wage gap by race for four groups: White women, Black women, Hispanic women, and API women. The study finds mixed results for how increased representation of women impacts gender wage gaps. Though there is an overall statistically significant positive correlation between representation in state legislatures and a smaller gap, the effects of representation in each of the three forms assessed on the wage gap differs by race. Additionally, representation in the judiciary is not statistically significant on any gender wage gap, and no variable is statistically significant for the wage gap of Hispanic women.

Keywords: gender, wage gap, pay gap, equal pay, and representation

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Introduction

The gender wage gap refers to the difference between men’s and women’s salaries. In the United States, women are currently paid 82 cents for every dollar a man earns, though the gap is much greater for most women of color. For example, Hispanic or Latina women earn just 54 cents for every dollar earned by a white man (Bleiweis 2020). The gap also varies from state to state across the U.S. and has persisted even though women have increased their educational progress so much they now outnumber men in attainment of Bachelor’s, Master’s, and Doctoral degrees (National Equal Pay Task Force 2013). In fact, the percentage difference between median weekly earnings of men and women is even higher for those with college degrees than those with high school diplomas (Miller and Vagins 2018). Studies have shown that the wage gap exists across occupations and seniority levels and is in fact higher between men and women with higher levels of education attainment and in managerial positions (Bornstein 2018).

A common misconception is that the gender wage gap is based exclusively on sex discrimination, all other conditions being equal. Technically, wage discrimination was outlawed in the United States by the Equal Pay Act of 1963 and the Civil Rights Act of 1964, but 38% of the gender wage gap is still thought to be caused by discrimination (Blau and Khan 2016). This is likely because the Equal Pay Act is difficult to enforce; moreover, many women are not even aware when they are being underpaid because of pay secrecy laws and policies.

The remainder of the wage gap can be explained by a variety of societal, cultural, and workplace trends, such as occupational and industry segregation. Women tend to funnel into careers that have lower average salaries – such as teaching and health care support – while men are more concentrated in careers with higher salaries – such as law and surgery. However, the wage gap persists across industries and even within female-dominated industries (Miller and Vagins 2018). Studies have even shown that when women enter more male-dominated industries, the average wages drop, indicating that work is actually devalued when it is done by a woman (Miller 2016). Other
workplace trends include promotional structures, access to professional training, leave or long periods out of the workforce, and differences in the number of hours worked.

Perhaps the most impactful factor in explaining the gender wage gap is the “motherhood penalty,” which refers to the “phenomenon by which women’s pay decreases once they become mothers” (AAUW). Women perform a disproportionate amount of child-rearing tasks, which has significant implications on the time and effort mothers are able to devote to work and on the assumptions employers make about mothers. On the practical side, childcare expenses, gender norms, inflexible scheduling, and unsupportive workplaces drive women out of the workforce; thus, women have significant career interruptions and gaps, miss out on experience and training, and are set back when they want to return to work. In addition to this, the biases and stereotypes people hold about mothers contributes to the motherhood penalty; studies have found that evaluators perceive mothers to be less competent and committed to work and therefore recommend lower salaries for them, while the opposite is true for fathers (Correll, Benard, and Paik 2007; Blau and Khan 2016).

Other workplace practices also contribute to the gender wage gap. For example, even when women start out with only slightly lower salaries than their male counterparts, the gap is further exacerbated by employers who base salaries off a potential employee’s prior earnings, who discourage discussion of wages, and who do not publicize salary information. Such policies have allowed employers to give women lower base pays and lower bonuses, despite having equal performance ratings (Robertson). Sexual harassment in the workplace is a significant factor, as well. It has been shown to impede a woman’s job performance and career advancement, reinforce occupational segregation, and disrupt a woman’s career; a study even found that women who experience sexual harassment are 6.5 times as likely to change jobs as women who have not, often accepting a lower salary to
Because there are so many factors that contribute to the gender wage gap, there are many potential policies and solutions which, though they may not close the gap fully, could at least reduce it. These policies come from a variety of places, from the government to corporations, and could be upheld or struck down by the judiciary. Thus, this study will examine how women’s representation in these various decision-making roles could have an impact on the gender wage gap.

To study this question, the article will first present a review of the literature on the impacts of women’s representation. The literature review will present and evaluate previous research done on women’s representation and show how the results could have direct or indirect connections to the gender wage gap. The review will individually evaluate women’s representation in three different fields: first in state legislatures, and then among judges and company board members. The study will test each of the hypotheses presented throughout the literature section by conducting regression analysis involving three independent variables and a control variable, first using a model for total gender wage gaps in the states and then separate models for gender wage gaps by race. Finally, the article will present the findings of the regression analysis and discuss the implications of the results.

**Literature Review and Theory**

**Effects of Representation in the Legislatures**

Women’s underrepresentation at all levels of government and management has been well documented, and research has shown that the lack of diversity among elected officials impacts women and minority groups. For example, female legislators are more likely than male legislators to implement policies that specifically benefit women (Kliff 2017). Studies have found increases in the number, policy areas, and enactment rates of “women’s interest” proposals in legislatures as the proportion of women has increased (Saint-Germain 1989).
Increased representation could be the key to lasting change, as well; other research found that the states that ratified the Equal Rights Amendment had a higher likelihood of having at least 15% female legislators than states that never ratified and states that ratified but later rescinded (Crowley 2006).

Thus, with only 29% of legislators across the country being women in 2020 (National Conference of State Legislatures 2020) - a percentage which was even lower until now - women’s interests are not being sufficiently championed in politics. This issue is reflected in women’s underrepresentation itself along with many other practical measures: the gender wage gap, the gavel gap, the disproportionate number of women working in minimum wage jobs or depending on welfare, and, most recently, the disproportionate number of women, particularly women of color, pushed out of the labor market during the pandemic.

There are many reasons for women’s underrepresentation in elected office at all levels, such as a lack of political ambition and well-developed fundraising networks, likely a result of socialization (Ziegler 2015). Regardless of the causes for underrepresentation, state legislatures can play a key role in closing the gender wage gap because of the lack of action at the federal level. The Equal Pay Act, even combined with other subsequent federal legislation, has not been sufficient for ensuring gender equality in wages. There have been recent attempts at federal legislation, such as the Fair Pay Act and executive orders, which have ultimately failed, largely a consequence of severe polarization in the federal government. In the absence of any meaningful federal action, individual states have taken on the issue of unequal pay. States have passed laws, such as requiring liable employers to pay an employee’s damages, that specifically address some of the gaps left by the EPA. Additionally, and especially over the last two years, states have looked to other related policies, such as requiring employers to release data on their employees’ salaries, as additional ways to improve the gender wage gap.
Because of the potential for state legislators to have an impact on gender wage gaps, this study will look into the impact that women’s representation in state legislatures can have on the gender wage gap in their state with the following hypothesis:

\[ H1: \text{On average, the greater the percentage of female legislators in a state, the lower the gender wage gap.} \]

**Effects of Representation in the Judiciary**

While the impact of increased gender diversity in the executive and legislative branches of government has been well-researched, much less attention has been given to the impacts of gender (in)equality in the judiciary. Policy does not end with legislation; how legislation is interpreted and enforced has significant real-life implications for the affected groups, and this interpretation is determined, limited, and expanded by the judicial branch. Thus, it is important to consider how the low level of women in the legal profession, and particularly on the judicial bench, impacts women throughout the country.

Though studies have shown unclear or mixed results for whether the gender of a judge affects the outcomes of other types of cases, there is a strong consensus that gender does have an effect in sex discrimination and sexual harassment cases (Chew 2017). The decisions on these cases are likely to have further effects on a wide variety of issues that impact women, such as the gender wage gap, the number of women in the labor force, and the ability of women to run for office.

How might the difference between male and female judges in voting behavior on sex discrimination and sexual harassment cases impact the gender wage gap? These cases are more clearly linked to workplace protections and the wage gap than other issues may be. According to the EEOC, sex discrimination “involves treating someone (an applicant or employee) unfavorably because of that person’s sex” (EEOC). These cases can impact the gender wage gap by directly protecting women against wage discrimination or by encouraging workplace protections and women’s workforce
participation through the requirement of fair and equal treatment in situations such as promotions.

In fact, the court deciding a case on sex discrimination may be even more important than the legislation itself. Wage discrimination claims are often brought to court under the Equal Pay Act of 1963, the first piece of federal legislation to outlaw gender-based discrimination in the workplace. However, the legislation itself was designed in such a way that it does not provide strong or guaranteed protections or remedies; this is left up to the interpretation of courts. First, the less stringent “equal pay for equal work” requirement has been interpreted differently from jurisdiction to jurisdiction; some courts specifically “reject the notion that equal work should ever be interpreted as ‘comparable work’” (Causevic 2018). This language creates “a high and often unreachable standard,” so the burden of proof is substantially higher for EPA claims while the defense is simpler for employers, leading to the ultimate failure of many court cases in protecting claimants. For example, a morning shift versus an afternoon shift could be sufficient for an employer to argue that the same job requires unequal work and, therefore, to justify unequal pay. Another aspect of the policy design that makes protection under the Equal Pay Act insufficient is the “any factor other than sex” clause, which is one of the exceptions granted by the EPA that employers can use to justify unequal wages (Bergmar 2019). In practice, this clause “has proven to be a catchall argument that has undermined the ability of the statute to hold employers accountable at all” (Masters 2020). One scholar has noted that women filing claims under the EPA “have not fared particularly well” (Zeigler 2006), largely due to the holes left in the policy that limit its ability to provide a guaranteed protection in court; thus, the specific interpretation by a court is critical to the success of this and other wage and sex discrimination laws.

Similarly, sexual harassment laws and cases have significant impacts on the protections afforded by legislation. Sexual harassment cases in the workplace can allow women to remain in their jobs and be protected from further harassment or retaliation, in addition to
protecting other and future employees; even harassment cases outside the workplace can have psychological effects on a woman that impact her ability to stay at work. Thus, sexual harassment and sex discrimination cases have direct links to a woman’s career, which in turn affects their wages and the wage gap overall.

But how exactly do female judges impact the outcomes of these kinds of cases? Two studies initially looked into this question: those by Jennifer Peresie and those by Christina Boyd, Lee Epstein, and Andrew Martin. In her studies, Peresie looked at sexual harassment and sex discrimination cases at the Federal Court of Appeals in the span of two years: 1999 to 2001. While she found that the plaintiffs (typically females) lost in 73% of cases, there was a striking gender difference in voting behavior: male judges ruled in favor of the plaintiff only 24% of the time while female judges did so 39% of the time. Overall, female judges increased the likelihood of a case being decided in a plaintiff’s favor by 86% in sexual harassment cases and 65% in sex discrimination cases (Chew 2017).

Additionally, Peresie found that female judges have a compound effect by influencing how their male colleagues vote on a case. In federal appellate panels, male judges were found to be more likely to hold for the plaintiff if at least one female judge also served on the panel: when a female judge is present on the panel, male judges are more than twice as likely to vote in favor of the plaintiff on sexual harassment cases and more than three times as likely to do so on sex discrimination cases. This effect occurs regardless of political ideology of the judges (Chew 2017).

In their studies, Boyd and colleagues confirmed Peresie’s findings that female judges have both an individual and a panel effect on outcomes on sex discrimination and sexual harassment cases. They additionally found that this effect is increased when political ideology is taken into account: for male judges at middle-of-the-road levels of political ideology, the likelihood of them voting in favor of the plaintiff increases by nearly 85% when a female judge is on the panel (Boyd et al. 2010). Peresie suggests these effects are due to the beliefs of male
Judges that their female colleagues’ knowledge about sex discrimination is “more credible and persuasive,” and thus, they may tend to defer to female judges’ decisions (Chew 2017).

Other studies have found gender effects on judging for other types of cases, as well. For example, in their studies of state supreme courts, Songer and Crews-Meyer found that female judges are more likely than their male colleagues to support liberal outcomes and that their presence increased the likelihood of their male colleagues supporting liberal outcomes, as well (Songer and Crews-Meyer 2000). Further, they found this effect to be particularly strong for Democratic judges than for Republican judges. Because liberal positions are more likely to support increased access to reproductive health, increased worker protections, and a higher minimum wage, for example, this gender effect may have a downstream effect on the gender wage gap along with direct effects on other policy areas.

In addition to rendering decisions on individual cases, the rulings of female judges in favor of a plaintiff in a discrimination or class action lawsuit can have future effects, as well. Often, such a ruling sets a precedent that impacts how future lawsuits are brought to a court and decided by other judges. For example, Hendricks found in her studies that female authors have been cited more than male authors by judges writing opinions on sex discrimination cases. Thus, these decisions are used by other judges in different localities and times and in different cases to support, defend, or strike down decisions (Hendricks 2017).

Because there have been shown to be significant gender effects on case outcomes decided by judges, whether by individual judges or by a panel and especially for cases involving sex discrimination and sexual harassment, these effects can in turn have impacts on the gender wage gap and other measures of gender equality. Because discrimination and sexual harassment contribute to the gender wage gap, cases in these areas that are decided in favor of plaintiffs likely improve the work situation for that individual and the overall political and legislative climate for others, increasing protections that encourage
higher wages for women. Additionally, liberal policies, which are more often supported by female judges than male judges, likely also contribute to less discrimination, more support for mothers and females, and higher wages for women, so court cases that expand and uphold these policies and set a precedent can have long-term effects on the gender wage gap. Since many of these laws are written by states and many cases regarding state and federal laws are settled in lower-level courts, this study will compare each individual state’s gender wage gap to the percentage of female judges that are present in that state with the following hypothesis:

H2: On average, the greater the percentage of female judges in a state, the lower the gender wage gap.

**The Effects of Representation in Corporations**

At the individual company level, management can have substantial impacts on the gender wage gap within a company because many practices that support employees, specifically women – such as avoiding a use of salary history in hiring and increasing pay transparency – are all company-level policies. For example, Salesforce recently achieved pay equality after the female president and chief people officer lobbied the CEO to conduct a company-wide compensation assessment (Cao 2019).

Even in the absence of strict statewide regulations, companies decide on a substantial number of benefits that have been shown to have a high impact on a woman’s ability to remain and progress in the workplace. For example, flexible scheduling, paid sick leave, and paid family leave help alleviate some of the impacts of the motherhood penalty. Sexual harassment policies, trainings, and recourses can reduce the occurrence and impacts of harassment. Companies that are committed to increasing representation can set informal or official policies and goals to increase the proportion of women at higher-level positions. Companies that are committed to pay equality itself can look into pay transparency and other wage-related initiatives like Salesforce did.
Because many of the decisions come from the board of a company, this study will look at the effects of representation among board members on the gender wage gap in a state. Board members hire the CEO and determine their pay, and company management is accountable to board members, so board members have the potential to influence policies that can affect all employees. Yet board recruitment efforts are often full of unconscious bias (Schindlinger 2020). Women still make up less than 30% of board seats of companies in the S&P 500 and only 20% of public company directors in the U.S. (which is less than the global average of 22%) (Mishra 2019; Schindlinger 2020). Even in the nonprofit sector, women make up only 43% of board memberships despite making up over 70% of the workforce (Brew 2017). To identify whether this lack of representation among board leadership has an impact on the gender wage gap, this study will look into the following hypothesis:

H3: On average, the greater the percentage of female board members in a state, the lower the gender wage gap.

Methods
This article will test the above three hypotheses by conducting a regression analysis using three independent variables – the percentage of female legislators, the percentage of female judges, and the percentage of female board members – on the gender wage gap for each state. The percentage of female legislators will include both houses in each state, and the percentage of female judges will include both state and federal courts. A control variable will be used to account for differences in ideology between the states.

While women’s representation and wages are lower than men’s, women of color are the most underrepresented and have the largest gender wage gap. Thus, to test the impacts of representation on women of color, the regression analysis will be replicated four more times using the gender wage gap for different racial groups as the dependent variable: White, Hispanic, Black, and Asian/Pacific Islander. By comparing regression results by race, this analysis can
identify whether there are more pronounced impacts of increased representation for diverse groups of women.

Data will be collected from a variety of sources. All data on the gender wage gaps within each state will be collected from the Institute for Women’s Policy Research’s “Status of Women in the States” data sets (Institute for Women’s Policy Research 2020). Data on the percent of women in state legislatures comes from the Center for American Women and Politics’ data for 2020 (Center for American Women and Politics 2020). Information on the gender diversity of board members within each state is found through Equilar’s analysis of Russell 3000 boards (Gama-Diaz 2020). Finally, the control variable for ideology comes from the 2018 Gallup poll measuring state ideological identification (Jones 2019). The data from the Gallup poll was used to calculate an ideology index representing the liberal advantage (percent liberal minus percent conservative). The ideology control variable is constructed under the assumption that more liberal states are more likely to have policies and cultures that encourage women’s rights, workforce participation, and equal pay. This control will account for differences in gender wage gaps between the states that is a result of these policies and cultures to isolate the impacts of women’s representation.

Results
The regression results of all the models are presented in the tables below. Table 1 shows the adjusted R-squared value for the overall gender wage gap in a state (“Total”) and the gender wage gaps by racial group. Table 2 shows the most important variable measured in each model, indicated by the independent variable with the largest coefficient.
Table 1. R values from regression results from gender wage gap models.

<table>
<thead>
<tr>
<th>Model</th>
<th>Adjusted R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.38</td>
</tr>
<tr>
<td>White</td>
<td>0.30</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.01</td>
</tr>
<tr>
<td>Black</td>
<td>0.10</td>
</tr>
<tr>
<td>API</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Table 2. Most important variable from regression results from gender wage gap models.

<table>
<thead>
<tr>
<th>Model</th>
<th>Most Important Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Legislature</td>
</tr>
<tr>
<td>White</td>
<td>Board</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Board</td>
</tr>
<tr>
<td>Black</td>
<td>Board</td>
</tr>
<tr>
<td>API</td>
<td>Ideology</td>
</tr>
</tbody>
</table>

More interesting than the results of any individual model are the differences between each of the models. First, the total gender wage gap does seem associated significantly with women’s representation and presents a high adjusted R-squared value; even without the control of ideology, regression analysis found an adjusted R-squared value of .32. However, the values for each gender wage gap by race are much lower. For White women, the adjusted R-squared value remains relatively high, but it drops significantly for API and Black women and is almost nonexistent for Hispanic women. This shows that women’s representation and ideology have almost no correlation with Hispanic women’s pay and very little correlation with API and Black women’s pay.

There are similarly significant variations in the coefficients for each variable between the models. However, some of the variables are
not statistically significant (with a p-value of less than 0.1) in the models. The table below presents a summary of the models, indicating whether a variable had positive or negative correlation and whether the variable was statistically significant for that model. The statistically significant variables to note are shaded green.

**Table 3.** Summary of direction of correlation and significance for each independent variable in the five models.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Correlation</th>
<th>Total Significant</th>
<th>White Correlation</th>
<th>White Significant</th>
<th>Hispanic Correlation</th>
<th>Hispanic Significant</th>
<th>Black Correlation</th>
<th>Black Significant</th>
<th>API Correlation</th>
<th>API Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislature</td>
<td>+</td>
<td>Yes</td>
<td>+</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>+</td>
<td>Yes</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>Judiciary</td>
<td>-</td>
<td>No</td>
<td>+</td>
<td>No</td>
<td>+</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>-</td>
<td>No</td>
</tr>
<tr>
<td>Board</td>
<td>+</td>
<td>No</td>
<td>+</td>
<td>Yes</td>
<td>+</td>
<td>No</td>
<td>+</td>
<td>Yes</td>
<td>+</td>
<td>No</td>
</tr>
<tr>
<td>Ideology</td>
<td>+</td>
<td>Yes</td>
<td>+</td>
<td>Yes</td>
<td>-</td>
<td>No</td>
<td>-</td>
<td>No</td>
<td>+</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The independent variable with the largest coefficient for the total gender wage gap in the states is the percent of women in state legislatures, but this variable is much less important for each of the individual models. For White, Hispanic, and Black women, the most powerful independent variable tested in these models is the percent of women in board seats, and for API women the most powerful variable is ideology, with percent of women in board seats coming in second.

Even more interesting is the indication of negative correlation between some of the independent variables and the racial gender wage gaps. For API women, both percent of women in the legislature and in the judiciary are negatively associated with improvements in the gender wage gap. For Black women, women’s representation in the judiciary and ideology are similarly negatively associated, though at a lesser magnitude. For Hispanic women’s gender wage gap, ideology
and representation in the legislature are negatively correlated. For White women, all four independent variables are positively correlated.

Discussion and Conclusions
Of all the independent variables tested, the percent of female judges is the only variable that is not statistically significant for even one group of women. This could be for a few reasons. First, the percent of female judges tends to fluctuate substantially between years, especially in states with fewer total judges. Perhaps more importantly, because of the long-term impacts of any court decisions, it is unlikely to see any immediate differences due to increased representation. To fully evaluate the impact of women’s representation in the judiciary, future research could consider an approach that would incorporate an element of time, such as comparing improvements in the gender wage gap compared to increased representation within a state or testing the gender wage gap against women’s representation in the judiciary as of X number of years ago.

The other three variables tested, including ideology, are significant for at least some of the models. As hypothesized, the majority of the statistically significant variables show positive correlation with improvements in the gender wage gap, indicating that, though limited, women’s representation does have a positive impact on women’s pay. However, the gender wage gap for API women actually has a negative correlation with women’s representation in the legislature. This warrants further research but could be because API women overall have higher wages than women on average and therefore may be less likely to be impacted by typical legislation aimed at improving women’s working conditions. On the other hand, it could also be that API women have had historically very low representation, so issues that impact them specifically have been unaddressed. Of course, with Asian Pacific Islanders, there are many ethnicities and nationalities that contribute to an extremely varied range of experiences, so future research should also consider evaluating distinct groups of API women.
It is also important to note that the magnitude of the coefficients for all variables tested are higher for White women than any of the other racial groups. This could also be a result of historically (and presently) lower levels of racial diversity in women’s representation in these various fields. Future research could evaluate the correlation between different legislative and business policies that impact the wage gap from an intersectional perspective evaluating race to better understand why increased women’s representation has not benefited women of color as much as White women.

It is also important to note that board representation had overall larger coefficients than the other variables tested, perhaps because board members have the most direct effects on women’s pay and company policies that support women. Future research can again evaluate which of these policies impact the gender wage gap the most. This research also indicates that quotas mandating board diversity may actually have significant effects on the gender wage gap.

The research showed mixed results for how and to what extent women’s representation in various fields impacts the gender wage gap, especially when considering race. On one hand, even without the control of ideology, the model for the total gender wage gap presented an adjusted R-squared value of 0.32; on the other hand, the results of the individual models require further investigation. The variations in the results of each of the models shows that a lot of insights can be gained from incorporating an intersectional perspective; to address the needs of all women, it is important to understand how a range of factors are impacting all women.
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