Exploring the Impact of Discrimination on the Gender Wage Gap

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Introduction

The issue of the gender wage gap has been broadly studied since the early 1970s when women began participating in the labor force on a larger scale. Legislation such as the Equal Pay Act of 1963 and the Civil Rights Act of 1964 have mitigated pay inequality between men and women. Several studies show that in the recent 30 years, the gender wage gap has constricted (Weichselbaumer & Winter-Ebmer, 2005). However, the wage disparity between men and women is still prevalent in the U.S. and across the globe. Some studies suggest that differences in work experience, labor force participation, women's preference for lower-paying jobs, and family responsibilities are associated with pay inequality (Becker, 1985; Heckman, 1998; Pitts & Kroncke, 2012). Other research argues that the existence of the gender wage gap is attributed to several forms of discrimination against female workers in the labor market (Blinder, 1974; Weichselbaumer & Winter-Ebmer, 2005).

While factors such as educational attainment, skills, family responsibilities, and the presence of children, significantly influence the wage gap, gender discrimination also remains one of the leading contributors. According to the Census Bureau (2021), women working full-time earn 84 cents for every dollar compared to their male counterparts. The difference of 16 cents in one dollar is evidence of the gender wage gap. In addition, some economists have found that up to 40 percent of the gender pay gap may be attributed to unmeasurable factors, including overt gender discrimination (Blau & Lawrence, 2007). The gender wage gap has been studied by numerous researchers from different social science disciplines with a focus on interpreting its underlying causes. However, the aspect of gender discrimination in the wage disparity has not been extensively analyzed. This underscores the necessity of examining how deeply gender discrimination is embedded in pay inequality.

Previous literature largely explored the influence of key observable factors (e.g., education, experience, and family responsibilities) that are deeply rooted in the wage disparity. This study aims to analyze the pay inequality between men and women, focusing primarily on the unobservable elements (e.g., gender discrimination) and considering the observable characteristics. The analysis utilizes recent data to gain a better understanding of gender wage disparities in the current labor market trends. This study collected secondary data from the Integrated Public Use Microdata Series (IPUMS) and the Federal Reserve Economic Data (FRED), using the panel data covering the period from 2017 to 2021. The study employed the Ordinary Least Square (OLS) regression model and the Oaxaca-Blinder decomposition analysis to answer the question – To what extent does gender discrimination explain the wage gap?

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This paper is organized into five sections. Following the introduction, Section 2 presents the literature review. Section 3 outlines the empirical strategy, which is divided into three subsections: 3.1 introduces the conceptual model explaining the gender wage gap through the supply and demand model for men and women in the labor market; 3.2 presents the data collection and descriptive summary; and 3.3 describes the statistical methods used in the study. Section 4 presents the findings of this study. Last but not least, Section 5 presents the discussion following the conclusion.

Literature Review

The gender wage gap refers to the disparity between men's and women's salaries, calculated based on the earning data of full-time individuals (U.S. Department of Labor, 2023). The pay gap in the United States has been narrowed in recent years. From 1986 to 2016, the overall ratios of women's to men's wages increased from 53 percent to 67 percent (Gharehgozli & Atal, 2020), indicating a moderate decline in gender pay inequality. Despite the constricted wage gap, the differences in earnings between men and women are still prevalent. The U.S. Census Bureau (2019) reported that the median earnings for full-time, year-round workers in the past 12 months were $53,544 for men and $42,394 for women, illustrating that women still earn $11,150 less relative to their male counterparts. This discrepancy demonstrates that pay inequity remains a pressing issue in the labor market.

The level of education plays a significant role in individuals' labor force participation and earnings. Several researchers have indicated a positive relationship between education and income. According to Horowitz (2018) and Card (1999), higher education allows individuals to improve their executive skills and knowledge, making them productive and competitive in the labor market. Even though women are more likely to graduate from high school than men, they are less likely to pursue college and graduate education (Blau & Kahn, 2007). Studies suggest that women who attain college degrees often choose majors such as education, humanities, and social science, which typically lead to low-paying jobs (Quadlin et al., 2023; Charles & Bradley, 2009). Conversely, men tend to concentrate on career-oriented fields of study such as engineering, law, medicine, and business (Blau & Kahn, 2007), leading to relatively high earnings. These trends raised questions on the intersection of educational preferences and gender, emphasizing the need for an in-depth understanding of societal expectations in shaping these decisions.

Women's attainment of higher education can mitigate the risk of discrimination in the labor market compared to those without higher education (Pitts & Kroncke, 2012). However, educational attainment does not completely account for gender wage disparity since women have recently gained representation in traditionally male professional fields. For example, Blau and Kahn (2007) emphasized that educational attainment has never accounted for a large portion of the overall gender pay gap. Similarly, Ridgeway (2011) further argued that even educated and skilled women are often perceived to be less competent, capable, and committed compared to men which influences their hiring process for a job, especially when applying for advanced roles

(Correll et al., 2007; Quandlin, 2018; Rivera & Tilcsik, 2016). Even when women are perceived as capable, they still may face double standards and be penalized for not being likable, a behavior not experienced to the same extent by their male counterparts (Quandlin et al., 2023). These studies made it clear that men's and women's education attainments are not the main factor of the gender wage gap, raising concerns about pay equality.

The presence of children and family responsibilities can create wage differences between men and women. Women with young children prefer flexible work to take care of the children and to maintain family responsibilities, which may increase the labor supply for women and reduce their earnings relative to men's (Hirsch, 2005). Findings from the Joint Economic Committee (2015), have shown that several women encounter the "mommy penalty," where they earn less than women who are not mothers. Contrariwise, fathers often receive benefits from "daddy bonuses" and earn more relative to men who are not fathers, perpetuating the wage disparity.

Cultural norms can also prevent women from actively participating in the labor market. It is common for society to expect women to take longer periods off work after giving birth, potentially resulting in women without children experiencing discrimination in the workplace. Employers might assume that these women without children could have children in the future, which will have long-term costs associated with their long absence (Mandel & Semyonov, 2005). The alignment of family policies and cultural attitudes regarding housework and childcare reveals systemic biases contributing to wage inequality (Cukrowska-Torzewska & Lovasz, 2020). In addition, taking maternity leave can adversely impact women's long-term employment opportunities, underscoring the interplay between family responsibilities and career progression. The number of hours worked by men and women also plays a pivotal role in the earnings gap across genders in the labor market. Further analysis by Gharegozli and Atal (2020) illustrates that working part-time and working a low-skill job on account of the inability to attain higher education and skills are the primary causes of the gender wage gap. Women's participation in the labor market as part-time workers is relatively higher at 64% compared to men's participation at 36% (U.S. Census Bureau, 2019). Many high-paying jobs require working long hours, which can place women at a disadvantage if they are perceived as less committed or capable of competing for work. Even though more women are participating in male-dominated fields, they are increasingly subject to gender-based evaluation standards in the workplace (Quandlin et al., 2023). In high-paying job markets, the gendered assumptions about females' capability and competency could overshadow variation (Cha & Weeden, 2014). However, Gharehgozli and Atal (2020) demonstrate that the traditional economic reasons for gender pay inequality, such as part-time jobs, work experience, and skills fail to fully explain the gender wage disparity.

While the difference in earnings between men and women is influenced by several factors, including educational attainments, number of work hours, and presence of children (Wisniewski, 2022), gender discrimination also plays a significant role in creating the wage gap between the two genders (Rotman & Mendel, 2022). Although the tendency of gender wage difference is declining, women still earn an average of 70 percent less than their male

counterparts (Blau and Kahn, 2008; Gharehgozli & Atal, 2020). The discrimination component of the gender wage gap has not been widely examined despite its growing size.

However, a number of the findings suggest that discrimination is tied to unequal pay between men and women. For instance, Neumark's (1996) study involved examining the result of a hiring audit where male and female pseudo-job candidates with similar resumes applied for jobs. The findings suggested female applicants had a 40 percentage points lower chance of receiving a job and a 50 percentage points lower chance of being hired compared to male applicants, especially in high-end jobs (Neumark, 1996). This finding complements Blau & Kahn's (2007) exploration of educational attainment's limited influence on gender wage disparity, revealing that gender-biased practices during the job hiring process are systemic challenges that extend beyond educational background or other observable factors.

Another key reason for the wage disparity between men and women is occupational segregation, which refers to the uneven distribution of workers across and within occupations based on gender (Bergmann, 2015). This form of gender-based discrimination can affect many skilled women in the workforce. In many cases, women are excluded from high-paying male-dominated jobs (Blau & Kahn, 2007) leading to an excess of labor in "female" occupations and lowering wages for equally productive female workers. (Bermann, 1974). Research shows that men tend to earn higher salaries than women, have more job stability, and have access to more lucrative job opportunities than their female counterparts (Blau & Kahn, 2008). In addition, women who apply for high-paying male-dominated jobs are more likely to experience rejection. For instance, a study conducted by Blau and Kahn (2007) indicated women who applied for higher-end jobs that were traditionally male-dominated were told, *"These jobs are only for men"* and *"We are looking for a male voice,"* implying gender discrimination in the workplace. It is therefore crucial to implement policies to ensure equity and transparency for all in the workplace.

The existing literature widely suggests that characteristics such as education, work experience, work hours, and family responsibilities are leading factors in the gender wage gap. Only a small body of literature addressed the wage gap as a result of discrimination. Therefore, this study aims to investigate the dimension to which discrimination influences pay inequality in the United States in recent years. The gender wage gap is a complex issue that varies depending on the country, culture, and socioeconomic status. While no country has yet been successful in achieving gender pay equality, Iceland has consistently ranked top for narrowing gender pay inequality over the past 14 years (Hausmann et al., 2012; World Economic Forum, 2023).

However, despite being a developed country, the United States ranked 43rd (World Economic Forum, 2023). Closing the gender wage gap requires acknowledging these associated issues and implementing effective policies and interventions. Studies have shown that policies promoting salary transparency, supporting work-life balance through parental leaves and childcare subsidies, as well as enforcing pay equality have been successful in reducing the wage gap (Blau & Khan, 2007). It is therefore vital to examine the underlying structural issues such as

gender discrimination and bias in the labor market to improve policy intervention and reduce pay inequality in the U.S.

Empirical Strategy

Conceptual Model

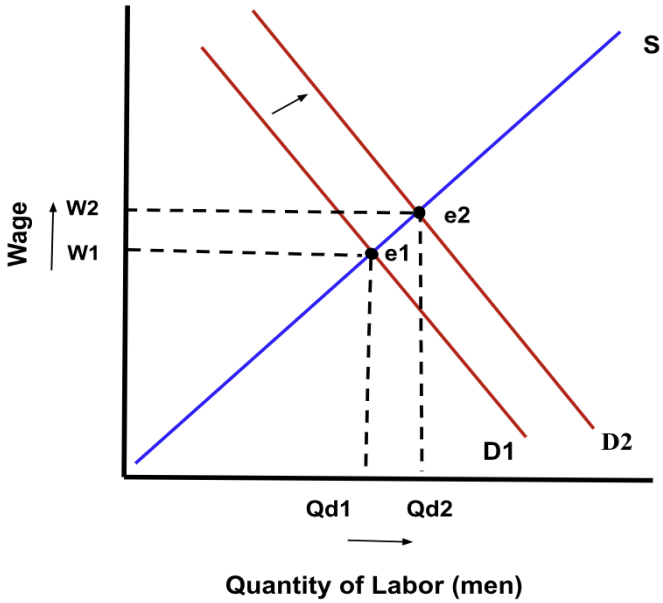
The supply and demand model is primarily used to understand the interaction between consumers and producers in the labor market. Here, the framework of the supply and demand model is used to understand the job market for male and female workers. In this context, supply refers to the number of workers willing and able to work at a precise wage, while demand refers to the number of workers a firm is willing to hire at a particular wage. The supply and demand model can help explain why firms often pay more to male workers than their female counterparts, by showing a preference for a particular gender in the workforce. In the labor market, wages are determined when the supply and demand curve intersects, meaning that a specific number of laborers are willing to work at a specific wage. When employers show a preference for one gender over another when hiring, it could lead to an imbalance in the labor market and varying outcomes for both male and female workers (Birkelund et al., 2021).

For instance, if there is a preference for male workers in a particular occupation or industry. In this case, employers may be willing to pay higher wages to male workers due to perceived higher productivity, skills, or solely gender bias. As a result, the demand curve for male workers remains relatively stable (Figure 1) because men are less responsive to some economic shocks. In contrast, the demand curve for female labor is less stable than the demand for male labor (Blau et al., 2013; Guisinger, 2020). Employers often view females as more substitutable and associate women's capabilities suitable for lower-paying jobs. As a result, even a small wage increase for female workers could result in a significant shift in the demand curve (Figure 2).

The COVID-19 pandemic is a great example of how labor demand for both genders varied. Studies revealed that the COVID-19 recession had a significant impact on women’s employment relative to their male counterparts which resulted in wage disparity among those genders (Alon et al., 2021), representing structural inequality shock in the labor market (Hutter & Weber, 2022). For instance, men are often employed in high-paying and technology-based jobs, while women tend to be concentrated in low-paying jobs that do not require technological skills. With technological progress driving the demand for tech-related jobs, employers may favor male workers at higher wages compared to female laborers, thus contributing to gender pay inequality.

Figure 1

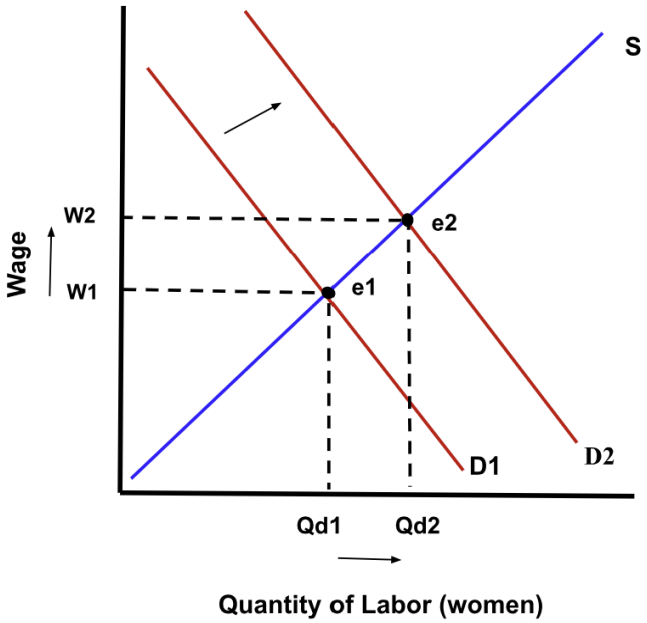
Demand For Male Workers In The Labor Market.



Here, D1 and D2 represent the demand curves. S represents the male labor supply curve. W1 and W2 are wages of labor, and Qd1 and Qd2 represent the quantity demanded of male labor at given wages. Lastly, e1 and e2 are the market equilibrium points, where wage equals the quantity demanded. The graph shows an increase in preference for male workers to shift the demand curve slightly from D1 to D2, leading the quantity demanded to increase from Qd1 to Qd2. This slight shift in the demand curve indicates that male labor is less volatile to wage changes.

Figure 2

Demand For Female Workers In The Labor Market.



Here, D1 and D2 represent the demand curves, while S represents the female labor supply curve. Wages of labor are represented by W1 and W2, and the quantity demanded of female labor at given wages is denoted by Qd1 and Qd2. The market equilibrium points are e1 and e2, where wage equals the quantity demanded. The graph illustrates an increase in preference for female workers to shift the demand curve significantly from D1 to D2, resulting in an increase in the quantity demanded from Qd1 to Qd2. This shift in the demand curve suggests that female labor is more likely to be responsive to changes in wages.

Data

To examine the role of discrimination in the gender wage gap, this study utilized secondary data from two sources: The Integrated Public Use Microdata Series (IPUMS), specifically the IPUMS - USA, and the Federal Reserve Economic Data (FRED). Most of the data are collected from the IPUMS - USA database as Microdata allows productivity of individuals to compare equally productive males and females (Weichselbaumer and Winter-Ebmer, 2005). In addition, the data from the FRED were mainly used to measure the gender wage gap by adjusting the nominal wages for inflation. Combining the data from IPUMS-USA and FRED, this study collected over fifteen million observations (N = 15,537,862). After tidying the data, the overall observations were over seven million (N = 7,038,686) with 51 variables.

The data obtained from IPUMS-USA included panel data covering the recent period from 2017 to 2021. These data comprised a combination of thirty-one variables and over fifteen million (N = 15,537,785) observations. The variables that were controlled for using the IPUMS-USA dataset are nominal hourly wage, gender, age, place of work, educational level (e.g., no

school, some school, high school, some college, and bachelor plus), race (e.g., white, black, Hispanic, and other), and metropolitan areas.

This study employed the Consumer Price Index (CPI) data from FRED to explore the effects of inflation on wages and the cohort effect. The data consisted of 77 observations with 2 variables. The real wage was calculated by adjusting for inflation. The sample of this study was restricted to the labor force participation age between 16 - 65. To analyze the impact of real wages on different age ranges, this study created a cohort of five age groups: Group 1 (ages 16 - 25), group 2 (ages 26 - 35), group 3 (ages 36 - 45), group 4 (ages 44 - 55), and group 5 (ages 56 - 65).

Table 1 displays summary statistics on hourly wages earned, gender, workplace, educational attainment, race, age, and real wages with no missing data. The descriptive statistics reveal that the average nominal hourly wage was 24.2. The minimum wage was 0.0, and the maximum was 12269.2, which indicates variability in salaries. The variable "female" is a binary variable with a mean distribution of 0.5 in the labor force. Likewise, the place of work had a mean of 0.5. Among all the variables for education levels, the average in some schools was 0.1, which suggests that most of the observations had at least some schooling. The variable “age” indicates a minimum wage of 16.0, a median of 41.4, and a maximum of 65. In contrast, age2 appears to have more volatility with a mean of 1930.2, a minimum of 256, and a maximum of 4225, which shows a diverse age distribution. Lastly, there is diversity within the real wage, with a minimum of 0.0 and a maximum of 300,259.

Table 1:
Descriptive Statistics

	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
Nominal_hourly_wage	26887	25	24.2	37.2	0.0	17.2	12269.2
Female	2	0	0.5	0.5	0.0	1.0	1.0
Place_of_work	2	0	0.5	0.5	0.0	1.0	1.0
No_school	2	0	0.0	0.1	0.0	0.0	1.0
Some_school	2	0	0.1	0.3	0.0	0.0	1.0
High_school	2	0	0.3	0.4	0.0	0.0	1.0
Some_college	2	0	0.1	0.3	0.0	0.0	1.0
Bachelor_plus	2	0	0.3	0.5	0.0	0.0	1.0
White	2	0	0.7	0.4	0.0	1.0	1.0
Black	2	0	0.1	0.3	0.0	0.0	1.0
Hispanic	2	0	0.2	0.4	0.0	0.0	1.0
Other	2	0	0.2	0.4	0.0	0.0	1.0
Metro	2	0	0.8	0.4	0.0	1.0	1.0
Age	50	0	41.4	14.8	16.0	42.0	65.0
Age2	50	0	1930.2	1218.6	256.0	1764.0	4225.0
Real_wage	4874	0	15064.2	23934.8	0.0	8409.9	300259.9

Methodology

To estimate the gender wage gap using the panel data, this study used the Ordinary Least Squares (OLS) fixed effect model. The regression equation used in the model is presented as

$$\log(\text{RealWage}_{it}) = \beta_0 + \beta_1 \text{female}_{it} + \beta_2 \text{age}_{it} + \beta_3 \text{age}_{it}^2 + \beta_4 \text{education}_{it} + \beta_5 \text{race}_{it} + \beta_6 \text{metro}_{it} + \alpha_{\text{cohort}} + \lambda_{\text{year}} + \delta_{\text{fips}} + \epsilon_{it}$$

In this equation, the $RealWage_{it}$ represents the dependent variable, which is the natural logarithm of real wage for individuals (i) in a year (t). The β_0 represents the intercept. The β_1, β_2, β_3, β_4, β_5, β_6 are the coefficients associated with independent variables such as female, age, age2, education, race, and metro. The cohort effect (α_{cohort}) embodies the impact of individuals born around the same period on wages. The λ_{year} is used for the year effect to capture the wage over time. The δ_{fips} is to capture the changes in wages due to the effect of geographical areas, specifically the states The error term (ε_{it}) representing the unobserved factors in the real wage is not explained by the model (Huntington-Klein, 2022).

When using the decomposition method, it is worth mentioning that sociologist and demographer Kitagawa first applied the decomposition method to examine the difference between two groups using a standardization method, which several studies argued to be identical to Oaxaca-Blinder Decomposition analysis (Kitagawa, 1955; Oaxaca & Sierminska, 2023). To understand the relationship between gender pay inequality, and discrimination, I specifically utilized the Oaxaca-Blinder decomposition analysis – a statistical method to explain the difference in mean outcomes across two groups on account of the group difference in the levels of explanatory variables (Blinder 1973; Oaxaca 1973). The Oaxaca-Blinder decomposition analysis can be used both as a twofold and threefold decomposition method (Halvac, 2018). In this study, I used the threefold decomposition to measure the mean outcome differences. The threefold Oaxaca-Blinder decomposition can be written as

$$\Delta\bar{Y} = (\bar{X}_A - \bar{X}_B)'\hat{\beta}_B \quad + \quad \bar{X}'_B(\hat{\beta}_A - \hat{\beta}_B) \quad + \quad (\bar{X}_A - \bar{X}_B)'(\hat{\beta}_A - \hat{\beta}_B)$$

Here, $\Delta\bar{Y}$ the dependent variable. The term $(\bar{X}_A - \bar{X}_B)'\hat{\beta}_B$ is the endowments that represent the contribution of differences in explanatory variables across groups such as gender, education, age, race, and metro. The second component $\bar{X}_B{}'(\hat{\beta}_A - \hat{\beta}_B)$ is the coefficient which identifies the groups' differences in characteristics such as discrimination, labor market bias, or other differential treatment that result in wage disparity. Finally, the third component $(\bar{X}_A - \bar{X}_B)'(\hat{\beta}_A - \hat{\beta}_B)$ explains the interaction effect that describes the cross-group differences both in endowment and coefficients that can happen at the same time (Halvac, 2018). This decomposition shows how the different characteristics contribute to inequality and how the market values these characteristics differently based on gender. Overall, these components represent both observable factors (i.e., education or work experiences) and unobservable factors (i.e., discrimination) that lead to wage disparity.

Results

Regression Analysis

The following are the results of a regression analysis that examined factors contributing to wage disparity between men and women, as presented in Table 2. Model (1) specifically focused on the relationship between females and real wages. The results revealed that, on average, the real wage earned by women is roughly 37% less than those earned by men, with the coefficient for females being - 0.368, and is statistically significant at $P < 0.001$.

Model (2) explored the relationship between the real wage and various control variables, such as age, education level, race, and location. The results indicate that after accounting for the controlling variables, the wage disparity increases slightly as the women earn 41.1% less than their male counterparts, reflected by the coefficient of - 0.411 for females in the labor market. The results also show a non-linear relationship between age and wages, with each additional year of age associated with a 20.4% increase in wages while there is a 0.2% reduction in wages for age2.

Education was found to play a significant role in determining real wages. Individuals with a bachelor's or higher degree earned 63.3% more than those who did not attend school or college. For instance, individuals with no formal schooling made 39.8% less, while those with some schooling earned 53.5% less. Even individuals who attended some college earned 2.2% less. The study suggested that race and ethnicity also play a role in determining wages. For example, individuals with a black racial identity earn 17.2% less and Hispanics earn 2.3% less in real wages. Whereas, their white counterparts earn 6.1% more. Finally, living in metropolitan areas is associated with higher salaries. The result indicated that individuals working in metropolitan areas earned around 15% more in real wages than those living in rural areas.

In Model(3), only state (fips) fixed effects are incorporated, while Model (4) includes both state and year fixed effects to capture change in wage over time across the states. For both models (3) and (4), women earned 40.5% less. When it comes to age, there was a 25.7% increase in wages; however, age squared decreased wages by 0.3%. Individuals with no school experience earned 40.2% less while attending some schools led to a 47.7% decrease, and attending some colleges was associated with a 1.2% decline in wages. Those with a Bachelor’s degree or higher degree earned 58.7% more in wages.

Similarly, living in metropolitan areas had a positive relationship with wages, with an increase of 10.5%. In terms of race, the findings indicate varying outcomes. Model (3) reveals White individuals made 10.5% more, while Model (4) indicates a 10.7% increase in wages. On the other hand, individuals with a Black racial identity earned 14.4% less when including only states in the Model (3), whereas Black individuals earned 14.2% less according to Model (4). Additionally, Hispanic individuals made up 3.3% fewer wages in both Model (3) and (4).

The result indicates that there is a statistically significant relationship between wage and gender. The model, with $R2$ and adjusted R2, showed a 0.02 variance in the real wage for females in the model (1). Model (2) explains a 0.36 variance, while models (3) and (4) indicate a 0.37 variance in real wages.

Table 2:

The Main Results

	(1)	(2)	(3)	(4)
Female	-0.368+	-0.411+	-0.405+	-0.405+
	(0.001)	(0.001)	(0.046)	(0.046)
Age		0.204+	0.257+	0.257+
		(0.000)	(0.092)	(0.092)
Age²		-0.002+	-0.003+	-0.003+
		(0.000)	(0.001)	(0.001)
No_school		-0.398+	-0.402+	-0.402+
		(0.004)	(0.035)	(0.034)
Some_school		-0.535+	-0.477+	-0.477+
		(0.002)	(0.037)	(0.037)
Some_college		-0.022+	-0.012	-0.012
		(0.002)	(0.018)	(0.018)
Bachelor_plus		0.633+	0.587+	0.586+
		(0.001)	(0.024)	(0.024)
White		0.061+	0.105+	0.107+
		(0.001)	(0.013)	(0.013)
Black		-0.172+	-0.144+	-0.142+
		(0.002)	(0.036)	(0.038)
Hispanic		-0.023+	-0.033	-0.033
		(0.001)	(0.066)	(0.066)
Metro		0.149+	0.105+	0.105
		(0.001)	(0.034)	(0.034)
Num. Obs.	7,038,686	7,038,686	7,038,686	7,038,686
R2	0.020	0.363	0.377	0.377
R2 Adj.	0.020	0.363	0.377	0.377
FE: cohort			X	X
FE: fips			X	X
FE: YEAR				X

Oaxaca-Blinder Decomposition Analysis

Table 3 shows the results of the Oaxaca-blinder decomposition analysis using the threefold decomposition method. The threefold decomposition breaks down the overall wage gap into three components such as endowment, coefficients, and interaction (Halvac, 2018). The endowment component represents the difference in observable characteristics, such as education, age, and work experience, which are associated with a small wage gap difference of - 4.73%. However, this component of the wage gap is not statistically significant, with a standard error of 0.05%, suggesting that differences in the endowment effect do not substantially explain the pay inequality. The second component in the table is the coefficient representing the unexplained portion of the wage gap resulting from differences in how characteristics such as education or work experience are rewarded differently among men and women in the labor market. The coefficient effect is 40.7%, indicating unobservable characteristics like discrimination or other structural factors significantly influence the wage gap among men and women with similar educational and work experiences. Finally, the interaction component measures the combined effect of the difference in endowment and coefficient on the wage disparity. The interaction effect, which is roughly 0.8% suggests that the combined impact of differences in characteristics and coefficients scarcely contributes to the gender wage gap.

Table 3
Oaxaca Decomposition

Difference	Endowments	Coefficients	Interaction
	-0.0473	0.4077	0.0076
	(0.0506)	(0.0791)	(0.0179)

Discussion and Conclusion

The issue of gender pay inequality has continued to raise extensive debate for decades. Some studies argue that the wage gap mainly occurs due to a lack of educational achievements, skills, work patterns, and family responsibilities, while others emphasize the existence of gender discrimination in the labor market. For instance, Gharehgozli and Atal (2020) suggested that traditional economic factors are the primary causes of gender pay inequality. In contrast, research by Newmark (1996) and Blau and Kahn (2007) reveals that women in male-dominated fields often encounter barriers to securing employment and promotions, even when they possess similar qualifications and work experiences, alluding to employers discriminatory practices in the labor market. Therefore, attaining equal pay as men becomes a challenge for women, especially where the preference for male workers is more likely.

Educational attainment is significantly associated with wage disparities in the labor market. A study conducted by Horowitz (2018) and Card (1999) highlights that higher degrees equip individuals with greater knowledge, skills, and productivity, making them more competitive and leading to higher wages. The findings of this study also reinforce these insights, demonstrating that individuals with a bachelor's or higher degree earned 63.3% more than those with no formal schooling. However, the study reaffirms that educational disparities alone cannot lead to pay inequality, since women with equal education credentials often experience inequality relative to men. The findings highlight the necessity of addressing systemic inequality such as occupational segregation and societal norms that direct women into low-paying jobs, as remarked in the prior studies (Charles & Bradley, 2009; Quadlin et al., 2023). Women’s underrepresentation in high-paying and male-dominated professions emphasizes the importance of creating initiatives that equally encourage capable women to enter and remain in these fields as men.

The study suggests that age, race, and metropolitan residence collectively contribute to wage disparities. While these observable factors were not the primary focus of this study, they were included as control variables to better understand their interplay with gender-based discrimination when determining wages. This approach emphasizes the compounded disadvantages encountered by individuals with different demographic groups and locations, for instance, women’s wages in the workplace as age increases, women with varying races and ethnicity, and women’s salaries in metropolitan areas are relative to rural underscoring the need for addressing inequality associated with intersectionality. Exploring these factors reveals the

challenges of individuals in the labor force on account of age, race, location, and gender, offering a more subtle understanding of the wage gap.

In this study, it is argued that discrimination is one of the leading factors of gender-based income inequality. The results of regression analysis also indicate that there is a wage gap between men and women, with women earning an average of 37% in Model (1) to 41.1% in Model (2) less than men in real wages. The finding is consistent with previous research indicating that education and skills cannot explain the gender wage disparity (Blau & Kahn, 2007). Additionally, the significant coefficient effect identified in the Oaxaca-Blinder decomposition analysis emphasizes the role of unobservable factors such as gender discrimination in perpetuating pay inequality. The findings of this study align with studies by Neumark (1999) and Ridgeway (2011) that addressed the systemic nature of discriminatory aspects and gender bias in hiring, promotion, and compensation processes.

Regarding the role of discrimination, the Oaxaca-Blinder decomposition analysis further emphasizes the unexplained element of wage disparity, which includes gender discrimination. The coefficient effect of the analysis suggests that unobservable factors such as discrimination are attributed to the gender wage gap by 40.7%, which goes beyond the measurable factors of the analysis. The findings support previous studies that documented the practice of discrimination and gender bias during the job hiring process in male-dominated fields (Blau & Kahn, 2008; Quandlin et al., 2023). These structural issues require policy intervention to end gender discrimination and promote fairness in the workplace.

While the Oaxaca-blinder decomposition analysis helps address systemic inequality like gender discrimination in the labor force, it is vital to acknowledge the limitation associated with the analysis. This statistical analysis captures observable factors such as education, age, or education. The challenge remains in measuring the unobservable factors such as discrimination, gender bias, or other characteristics that cannot be directly measured. As a result, the unexplained elements of analysis are often attributed to discrimination. Unable to measure the clearer identification of the unobservable characteristics is a major limitation, leaving room for ambiguity in the interpretation.

Understanding the discriminatory aspect of gender wage disparity is imperative, yet the complexities surrounding unobservable characteristics present challenges. The results of this study show that decent portions of the wage gap arise from unobservable factors. However, further studies are necessary to fully understand the root causes of discrimination and wage disparity. It would be useful to conduct additional research utilizing advanced questionnaires or employing mixed-methods approaches to gain valuable insights into the experience of female and male workers, helping us better understand the subtle forms of discrimination and inequality that may exist in the labor market. Overall, obtaining distinct evidence of underlying gender discrimination in the labor market would be beneficial for policymakers to create better policies to mitigate discriminatory aspects of wage inequality and foster a more equitable labor market for everyone, regardless of gender.

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