2019

Measuring the Sexual Orientation Wage Gap within Racial Groups

Zoe Islar
Skidmore College, yzheng@skidmore.edu

Skidmore College

Economics Department

Measuring the Sexual Orientation Wage Gap within Racial Groups

Zoe Islar

May 2nd 2019

This thesis is submitted in partial fulfillment of the requirements for the course Senior Seminar (EC 375), during the Spring Semester of 2019.

While writing this thesis, I have not witnessed any wrongdoing, nor have I personally violated any conditions of the Skidmore Honor Code.

Abstract

The aim of this paper is to provide empirical evidence on the differentials between race and sexual orientations in the distribution of income/salary and the amount or public assistance received. Using data from the U.S. Census from 2013-2017, I explore different alternatives for the sexual orientation wage gap: human capital differences, industry choice, numbers of hours worker per week and other labour market decisions. Depending on the outcome, I find that people of colour face primarily face a wage penalty. White workers face a wage advantage. However, the extent of the gap is dependent on the individual's gender, racial and sexual orientation combination. To provide additional explanation, I use the Oaxaca–Blinder decomposition to examine the distributions between each racial and sexual group. The results show that there is a definite wage gap between racial and sexual orientation groups, while workers of colour face the highest unexplained portions of that gap.

Introduction

Within the last decade or so, there has been improved attitudes toward the lesbian, gay, bisexual, transgender, and queer (LGBTQ) communities. Beside the current social and political protests and radical activism, the fight for LGBTQ rights has led to some of the most striking and rapid social changes in the United States. Economists have attempted to determine the links which exist between sexual orientation and a worker's wage. They attempt to find the links using the individual's sexual orientation as the independent variable and using a combination of economic and social factors as dependent variables. In the absence of a federal law specifically protecting LGBTQ employees and job seekers, discrimination (both discriminatory behaviors and practices) in the workplace has been an important topic for researchers.

Over the last few decades, laws have been created to protect workers from employment discrimination because of their race, color, religion, sex, or national origin. Most notably, The Civil Rights Act of 1964. Other laws forbid employment discrimination based on an individual's age, or physical or mental disability. As of 2019, there are no federal laws explicitly addressing employment discrimination based on sexual orientation or gender identity. As such, discrimination in the workforce is still relevant for workers. In some cases, LGBTQ workers report lower incomes due to employment discrimination or no job advancements. This makes it harder for LGBTQ workers to produce enough savings to cover basic necessities like rent, food,

and clothing. In other cases, these same legal inequalities burden LGBTQ workers with higher costs for needs like health insurance and education. Despite being more likely to participate in the labour market, LGBTQ workers are more likely to be poorer than their heterosexual counterparts (Movement Advancement Project and Center for American Progress (MAPC), 2014). Because there is still a lack of protection from discrimination, LGBTQ workers can be fired, struggle to find work, earn less salary on the job, and have higher costs than their non-LGBTQ peers.

In particular, the apparent wage gap between gay and lesbian workers is intriguing and worth further research. This study explores if racial minority groups experience the same instances of wage discrimination by sexual orientation discrimination compared to their White counterparts. Using data from the American Community Survey samples from the years 2013-2017, I document the sexual orientation wage gap between four racial groups: White, Black/African American, Asian and Latinx/Hispanic. I examine LGBTQ worker's wages to see if the worker's race or ethnicity leads to a higher wage penalty (or advantage) with the impact of their sexual orientation. In addition, I also use the Oaxaca-Blinder decomposition to examine and confirm the differences in wages. The decomposition breaks down the average wage gap existing between two demographic groups into two parts: the first part shows, differences in qualifications; and these differences that are explained by the model. The second part shows, differences that cannot be explained. As a final measure, I examine the household's yearly welfare received to draw comparisons between the worker's salary and the amount of welfare they reported.

Through the models it is shown that education and industry had a strong relationship with the wages and salary of each racial group. For gay and lesbian same-sex couples, they end up having lower returns to their salary based on the amount of education they achieved. For the decomposition, I find that same-sex couples have larger unexplained differences than their heterosexual counterparts. Lastly, the results for examining the effect of sexual orientation on race shows that education and age are significant in the welfare gap. The rest of the paper follows this format: section 2 provides an overview of the literature on the wages of racial and sexual orientation minorities. Section 3 discusses and describes the data and econometric model; section 4 discusses the robustness check for the model, section 5 reports on the study's findings.

Literature Review

Outdated and discriminatory laws mean that lesbian, gay or bisexual workers can work the same hours and show the same commitment in their job, but still face economic penalties. In a survey conducted by the MAPC, it was reported that 29 percent of LGBTQ adults in the United States report they are thriving financially compared to the 39 percent of non-LGBTQ individuals. An interesting claim made by the MAPC, said that the "focus on marriage equality often obscured the fact that LGBTQ people in most states lack access to many other basic opportunities and protections…" (Movement Advancement Project and Center for American Progress, 2014). Other researchers such as Korenman and Neumark (1991) would disagree with this statement. Specifically, the study, examines marriage premiums received by white males. According to their research, studying the marriage premium experienced by workers is useful because it can interpret specific gender-based discrimination in labor markets, as well as estimate how much gender-based discrimination is in the United States. Their data was the National Longitudinal Survey (NLS) of Young Men, for men aged 14 to 26.

They conclude that married White men earn about 11 percent more per hour than single men, controlling for observable, demographic, education, experience and work variables (Korenman and Neumark, 1991). However, their study does present some problems. The years of their study represents a large portion, because it examined data from 1976, 1978 and 1980, which presents a dated study and results. Secondly, because the data contains only White men, it skews the results, doesn't consider other races/ minorities and the privileges of specific races (for example, education and region).

Other existing economic studies of lesbian and gay people use different types of data for their methodology: surveys, samples and field studies. Industry, occupational standing, age, education, and work location are just the few variables that are discussed in the literature, but the majority of research supports the theory that direct discrimination can be the main cause of the wage difference between heterosexual and homosexual workers.

Oaxaca (1973), explains the gap in the means of an outcome variable between two groups (e.g., between heterosexual workers and LGBTQ workers). He formulated his model by creating a discrimination coefficient to measure for discrimination for male and female wages. In a non-discriminating labour market, the individual's wages are equal to their marginal product and the company or firm's wage structure, should affect both men and women. To find evidence of

discrimination, he uses the average wage gap between two demographic groups. He concludes that the wage structure for males and females are significantly different with respect to the men and women. His results suggest that a substantial proportion of the male and female wage differential is attributable to the effects of discrimination.

As stated before, the Oaxaca-Blinder (1973) decomposition will help determine the amount of discrimination experienced by sexual and racial minority workers. The stated approach will use the gap between the means of two and divides the wage differential between two groups. One part is labeled as "explained", which indicates that the differences in the group can be explained by the worker's characteristics and the other is labeled as "unexplained". This "unexplained" part contains a value that cannot be accounted for by differences in the wage determinants is often and is often used as a measure for discrimination.

Douglas and Steinberger (2015) extends on Oaxaca's (1973) study by documenting that different races experience different returns to human capital and demographic characteristics. They discuss the theory of a double disadvantage or penalty for sexual minority and racial minority workers. This double penalty would only affect marginalized identities in the LGTBQ community. Badgett et al (2005) analyze individual and household data for African American Same-Sex couples. Like Blinder (1975), they use log-linear weekly regressions to estimate the relationship between earnings and worker characteristics. They report African American men in same-sex couples earn 10-16% less than white men and African American women earn 10-17% less than White women.

With Badgett et al's (2005) reports, they question if there is differential treatment due to a gendered and racialized stigma. Employers could potentially discriminate toward lesbian Black women and/or gay Black men because of their race and sexuality, but it is unclear whether the workers face a double discrimination because of their characteristics. For example, if race-based discrimination already prevented a worker from being offered a position, then their sexual orientation couldn't have an effect. Despite the ever-growing support for LGBTQ individuals and couples, there are still people who disapprove of their lifestyle and/or relationship. Badgett (1995) states that proponents against approving or creating anti-discriminatory laws argue that "gay and lesbian workers experience employment discrimination and that it causes the worker economic and psychological harm." Using the General Social Survey or GSS, from the years

1991-1998, the authors find that employers are more likely to have a taste for discrimination. This is mainly because of the worker's disclosure of their sexuality to their co-workers or bosses. If the information has been shared voluntary, supervisors may harass, fire, or not promote them which are causes for direct discrimination. statistically significant nor sufficient for the occurrence of discrimination. This is mainly because of the worker's disclosure of their sexuality to their co-workers or bosses. If the information has been shared voluntarily, supervisors may harass, fire or not promote them which are causes of direct discrimination. Using a basic OLS regression, he uses separate equations for men and women because of the difference of labour participation between the two genders using the standard a log of income.

The results concluded that lesbians and bisexual women have a stronger labour force attachment, meaning they pursue more hours at work and aren't stifled by gender stigma or stereotypes of being expected to someday go on maternity leave. The control variables Badgett (1995) used were education, occupation, region and race; which each had negative coefficient indicating lower wages. Finally, gay, lesbian and bisexual men and women reportedly had lower wages than their heterosexual counterparts. Lesbians and bisexual women had lower paying occupations such as crafts, arts and teaching positions. Gay and bisexual men were less likely to be in a managerial, blue collar and instead in professional, technical and service industries. In this study, gender is more important that sexual orientation when determining income. But when looking at other studies, race and education always play a bigger role than the individual's gender. According to Grossbard and Jepsen (2008), married heterosexual men gain more from being in a couple in terms of earnings than any other gender/sexual orientation group. Using a theoretical framework, they don't find significant results for the relationship between sexual orientation and education. If the gay or lesbian head of household does not have a secondary education, the less their income is going to be.

While sexual discrimination in the workplace has been pondered by researchers, several studies focuses on other independent variables such as family distribution, and unobservable variables that could be factored. Mize (2016) argues that LGBTQ workers are paid less, no matter their sexual orientation, and discrimination is to blame for the remainder of their wage gap. Although most of his study focuses on bisexual men, I will not include bisexual men or women because of a lack of data. As a result, I use the variable that indicates same sex marriages, because labels that mention or include bisexuality are not included in the data. Race

will also be a large factor in my argument because of the prevalent wage gap due to a person's race.

In addition, the fact that homophobia affects men and women differently implies the sexism and homophobic discrimination can potentially affect gay and lesbian workers. Another stream of research has focused on the nature of the wage gap between genders and sexual orientation. From my research, most of the studies have used either the General Social Survey or the United States Census for their data. Sayers et al, (2017), use data from the General Social Survey from 1972-2014, which focuses on sexual behavior and "closeted" homosexuals who are not "outed" in the workplace, and bisexuals who are not married, yet live with their partner. But because their study is limited to Black and White workers and has so few observations on bisexual men and women, this literature isn't the best for my own model. They conclude that homosexuality has a statistically significant effect on income. In addition, gay men earn 22% less than heterosexual men after adding occupational and educational variables. Lesbians also earn less than 28% more than straight women. Their regression results show that top salary earners (in order) are: straight men, gay men, bisexual men, gay women, bisexual women and straight women. Homosexual women are also more likely to have a larger pay with male-dominated careers, while gay males hold lower paying jobs with female dominated or traditionally feminine jobs. Finally, they conclude that intentional discrimination is not the sole cause of the sexual orientation gap between workers. The number of hours worked, job location or other factors may account for the difference in wages.

Another research study uses the General Social Study or GSS (Black et al, 2003) from 1989 to 1996 to investigate the effect of sexual orientation on earnings. Using simple earnings regressions, they find results that are similar to the majority of literature done on this topic: lesbian women earn more than single and married women and gay men earn less than their married heterosexual male counterparts. However, when measuring and determining individuals who are gay or lesbian, the workers ended up facing different constraints than heterosexual men and women. Because they have distinct sexualities, they make different optimal choices over important dimensions of their lives. Depending on the location of the worker, gay men and women make decisions that affect their labour market outcomes. Lastly, the lesbian women and gay men might be differently involved in the labour market because of the gender bias and because lesbian women might be more positively received more than gay males.

Before the marriage equality act was enacted in all fifty states in the United States, it was evident that in some areas gay, lesbian and bisexual people would face more discrimination than in others.

For example, a LGBTQ individual living in the southern states or in rural areas may face high levels of discrimination when compared to a worker living in an urban area or western states. Badgett et al. (2007), states that LGBTQ workers of color experience higher rates of discrimination and additional challenges in the workplace. LGBTQ workers of Asian and Pacific Islander descent or self-identify as these races report that high amounts of sexual orientation discrimination. Badgett et al. (2007) claims that 75 percent of these workers experience discrimination at work because of their sexual orientation. The discrimination is measured using four separate datasets, the American Community Survey, National Survey of Family Growth, LGBTQ adults in California, California Health Interview Survey and the Gallup Daily Tracking Poll to report individual's survey answers. The discrimination is measured by simply comparing their reported wages; which is similar- to Blinder's (1973) methodology.

To measure the size and source of wage differentials, Martell (2013), too use the GSS data for 1994-2008. Using the sexual orientation question, they combine their participants answers with the Current Population Survey (CPS) and the Employment Non-discrimination Acts (ENDAs) to make sure their data represents policies to make sexual orientation discrimination illegal. This was done to obtain the most precise estimates of wage differentials currently possible for their study. They conclude that gay men have an invisible minority trait that affects where the worker decides to work and the wages they earn. Based on the results, gay males have at least two options: working in a tolerant or intolerant workplace. Depending on the geographical area and the number of firms in the area, gay males have a harder time working and adjusting to a workplace. Certain geographic areas may have a higher portion of firms that are tolerant.

Using data from the 2000 U.S. Census, Antecol et al, (2008) expands on the various explanations for the sexual orientation wage gap: occupational sorting, and human capital difference. Like the previous authors, they take the log of hourly wages in relation to sexual orientation, a vector that controls for education and work experience. Unlike the other studies, Antecol et al (2008) found that education has a large impact on the observed wage advantage enjoyed by lesbian women and gay men relative to their heterosexual counterparts. This may be

because of the sexist behavior towards female workers or closeted workers who may not be openly express their sexuality to their co-workers. They also conclude that gay men have a wage penalty relative to their married heterosexual counter parts, which follows the rest of the research conducted and the findings of other studies. Gay men and lesbian women have a gay penalty, despite the differences in wage. However, when estimating this wage gap, both education and occupation wasn't significant in the value of the wage gap between heterosexual and homosexual men. The entire wage penalty suffered by gay men was largely unexplained. They speculate that discrimination may be a result of an unexplained wage penalty. Unfortunately, they also restrict their data to white workers and interracial relationships-but one of the partners has to be white. I do believe omitting other races potentially skewed their data and created a bias in their work.

Lastly, unlike finding research on the amount of salary and wages LGBTQ workers receive compared to heterosexual workers, there is not much research comparing the amount of public assistance received by both groups. According to Badgett et al. (2013), 2.2% of females in same-sex couples receive cash assistance compared to 0.8% heterosexual women in opposite sex relationships. Also, 14.1% of lesbians receive food assistance compared to 7.7% of gay men in same-sex relationships and 6.5% of married opposite sex couples. This is important to consider because previous literature has indicated that lesbians are more likely to receive a higher wage than gay men. The question remains if LGBTQ workers receive large amounts of public assistance and compared to heterosexual workers.

Since the mid-1960's, there had been a stigma surrounding LGBTQ individuals, specifically gay men, did not have access to public assistance programs, due to the HIV/AIDS epidemic. Individuals who were diagnosed with HIV/AIDS, faced opposition from policymakers and bureaucrats in the Social Security Administration (SSA). According to Bell (2018), these individuals wanted to prohibit gay men from receiving any form of public assistance because they wanted to "prevent the U.S welfare system from becoming a wide-ranging social safety net predicated on poverty." This discriminatory behavior was deeply embedded in racial, sexual and gender politics. By the mid-1980's, AIDS was not easily described as a "disability" because of the gay stigma surrounding the disease and the fact that it is sexually transmitted.

However, there are also recorded cases of discriminatory practices within the SSA assigning public assistance towards women. Bell (2018) notes one cases where a young white male who was diagnosed with Kaposi's sarcoma and HIV was more likely to receive Medicaid

than a woman with cervical cancer and was suspected of having HIV. Communities and women of colour are often enfranchised in receiving any form of public assistance, implying that the autoimmune disease provided an additional penalty for those people. In essence, this study will explore the differences in the amount of public assistance (welfare) received by the four racial groups throughout different sexual orientations and couplings.

Data

The data set for the analysis is the America Community Survey (ACS) from the years 2013-2017. This data set is ideal because it is weighted and it contains detailed variables on labour market outcomes (wages, occupation, weeks worked), sexual orientation identification, and demographics. I restricted my sample to 22 to 65-year-old workers to account for the average four years it takes for a student to complete a bachelor's degree and the standard age for retirement. For my chosen variables, I have decided to use annual salary/income, sexual orientation, race, education, sex, age, age squared, number of weeks worked, industry, yearly amount of welfare (public assistance) received, employment status, and labour force status. The three variables that will be pivotal in my study are: sexual orientation, race and gender. The variable "SSMC" reports whether the head of household and spouse are a same-sex married couple. According to the data source, the variables also indicates that same sex couples are married and both spouses are present in the household. This is important to my study because it contains both household and individual data that is useful in determining that wage gap.

The survey asks this sexual orientation question unlike other surveys. Instead of asking whether the individual identifies as part of the LGBTQ community, the survey just reports on if the individual is in a same-sex household, a different sex household and same-sex couples where all not relevant data is shown. Interestingly, there are fewer married same-sex relationships than heterosexual married couples. This could be a result of a lack of data on self-identified sexual orientation or the individual might not feel comfortable enough to share that data in the Census.

Because of the vagueness of the survey and the questions on sexual orientation, the survey question doesn't indicate whether the individual was or currently in a same-sex relationship. Although respondents are not asked when their sexual activity took place, the survey does not indicate whether the relationship choices were either temporary or experimental.

The survey also does not indicate whether the behavior reflects the individual's underlying sexual identity and orientation.

Before turning to earnings, I first examine labor force participation. The America Community Survey (ACS) asks respondents if they are currently in the labour force, and they can choose to respond yes, no, or N/A to indicate another choice. I generate a variable: Employed, coded as equal to one (1) if the respondent answered as being in the labour force, zero (0) otherwise and completely omitting the ones that responded N/A. I am aware that omitting the respondents that choose this option may create an omitted variable bias, but in my study, it would be necessary since I will be evaluating labour market participation.

The most common econometric approach for capturing the effects of discrimination is to see if workers who are similar in all observable and economically relevant ways have similar labor market outcomes; and vice versa, if workers with different observable variables have a difference in wages. This paper uses basic OLS models of wage determination with the log of income as the dependent variable. Separate equations for men and women will be considered to explain any differences in men's and women's labor market decisions and experiences. If there is any discrimination in the worker's wages, it will potentially be captured by the coefficient on a dummy variable for lesbian, gay and heterosexual workers. A statistically significant negative coefficient would imply discrimination in the form of lower wages. A high or positive coefficient for annual welfare received would indicate that the worker is a victim of discrimination and is forced to receive welfare and public assistance to make up for the difference in wages.

I focus my analyses on three groups: married heterosexual couples (henceforth married), non-married heterosexual couples (labeled unmarried), and married same-sex couples. Instead of comparing same-sex couples to all heterosexual partners, I divide the heterosexual comparison groups into married and non-married, since the relative wages of both groups can potentially differ by marital status. From this division, the following regressions will see how big the impact is for the dependent variables. Like the model used by Douglas and Steinberger (2015), the following OLS regressions will be the following:

$$W_{it} = \beta_0 + \beta_1 * H_i + \beta_2 * R_i + \beta_3 * S_i + \beta_4 * M_i + \beta_5 * MS_i$$
$$+ \beta_6 * RE_i + \beta_7 * E_i \; \beta_8 * I_i + \beta_9 * A_i + \varepsilon_\iota$$

where W is the log of reported annual wages and the rest of the dependent variables are listed by order of importance, totaling seven mutually exclusive variables. The dependent variables are as follows: *H*: Indicates whether the couple is a Homosexual or Heterosexual Couple; *R:* the Worker's race; *S:* The worker's gender; *M:* Metropolitan Status; *MS:* The couple's marital status; *RE:* The couple's regional location; *E:* Highest amount of education received; *I:* Industry and *A:*Age of the individual.

The first variable, *H,* indicates whether the couple is classified as a homosexual or heterosexual coupling. IPUMS labels this coupling with the variable "SSMC" and reports whether the head of household and spouse are a same-sex married couple. According to the data source, the variables also indicates that same sex couples are married and both spouses are present in the household. This is important to my study because it contains both household and individual data that is useful in determining that wage gap. The survey asks this sexual orientation question unlike the typical way other surveys. Instead of asking whether the individual identifies as part of the LGBTQ community, the survey just reports on if the individual is in a same-sex household, a different sex household and same-sex couples where all not relevant data is shown. Interestingly, the number of individuals who are married and in same-sex relationships are lesser than the amount of heterosexual married couples. This could be a result of a lack of data on self-identified sexual orientation or the individual might not feel comfortable enough to share that data in the Census.

Because of the vagueness of the survey and the questions on sexual orientation, the question doesn't indicate whether the individual was or currently in a same-sex relationship. Although respondents are not asked when their sexual activity took place, the survey does not indicate whether this relationship choices were temporary or experimental or whether the behavior reflects the individual's underlying sexual identity and orientation.

The next variable, *R,* represents the individuals race and ethnicity. Since a key variable in my study will be observing the potential sexual orientation wage gap by race, the second most important dependent variable will be the workers racial identity. Due to the limitations of the data set: two few observations, I will only be studying the following races: African American/Black, Caucasia/White, Hispanic/Latinx and Asian American. For simplicity in the regressions, I refer to members of the Hispanic ethnicity as a "fourth" racial group and

combine the different categories of the Asian ethnicity. Due to the small amount of American Indian, biracial and multiracial workers, those workers are not included in my study.

Before turning to earnings, I first examine labor force participation. The American Community Survey (ACS) asks respondents if they are currently in the labour force, and they can choose to respond yes, no, or N/A to indicate another choice. I generate a variable: Employed, coded as equal to one (1) if the respondent answered as being in the labour force, zero (0) otherwise and completely omitting the ones that responded N/A. I am aware that omitting the respondents that choose this option may create an omitted variable bias, but in my study, it would be necessary since I will be evaluating labour market participation.

The most common econometric approach for capturing the effects of discrimination is to see if workers who are similar in all observable and economically relevant ways have similar labor market outcomes; and vice versa, if workers with different observable variables have a difference in wages. This paper uses basic OLS models of wage determination with the log of income as the dependent variable. Separate equations for men and women will be considered to explain any differences in men's and women's labor market decisions and experiences. If there is any discrimination in the worker's wages, it will potentially be captured by the coefficient on a dummy variable for lesbian, gay and heterosexual workers. A statistically significant negative coefficient would imply discrimination in the form of lower wages. A high or positive coefficient for annual welfare received would indicate that the worker is a victim of discrimination and is forced to receive welfare and/or any other types of public assistance to make up for the difference in wages.

Next, the two variables are *S* and *M*, which represents the individual's gender and metropolitan status respectfully. Another variable used will be metropolitan status, represented in the equation as *ME*. If the household and individual has this value equal to 1, this will specify whether that the worker and resided within a metropolitan area and households are located in metropolitan areas. The variable region, *RE*, will be split into four areas: West, South, Northeast and Midwest to account for all the states and territories in the United States. Most of the previous research conducted examines LGBTQ and heterosexual workers who are married as opposed to both those who are single or married. For this reason, I include both single and married workers in my study, and omit households where the couple is separated, divorced, widowed or the spouse isn't present in the household. This fourth variable is labelled as *MS* in my model.

Next, I only included workers who work more than 35 hours a week to account for full time workers, who are implied to be experienced and have no other commitments to prevent them from working the minimum number of hours. To further confirm employed workers, I limit my data to workers who are described as "employed" and eliminate the households that identify as "not part of the labour force", "unemployed" or responded "N/A". In the regressions, the coefficients of this employment variable could also depict the possibility of a LGBTQ worker being employed. A lower or negative coefficient would indicate a low possibility of being employed in the workforce or, while a high or positive coefficient would indicate an employment advantage or an employment bonus.

Following marital status, the next variable is education. This variable is used in my study because much of the research conducted has shown that education attainment has an impact on wages, despite the person's sexual orientation and race. Carnevale et al. (2012) conducted a survey where they revealed that LGBTQ workers lacking higher education or job training are less likely to find jobs that offer health insurance and are at greater risk for unemployment. The dummy variables for education include one to five plus years of college experience (from attending little college to completing more than a bachelor's degree). Gates and Ramos (2008a) use the 2005 American Community Survey to show that Black gay men and lesbian women are more likely to have a college degree than their heterosexual counterparts. Suh (2009) uses two years of the March Current Population Survey (CPS) to estimate the wage gap between men and women among Asian and Pacific Islander workers.

By using methodologies similar to Oaxaca (1973) and Blinder (1973), Suh (2009) finds that Asian women have benefited from improvements in human capital in 2005, but still make less than Asian men. Finally, they conclude that on average, Asians and Pacific Islanders have nearly one more year of education and the education variable in their model plays an important role in their wages. For Hispanic women, there has been less studies and researches conducted compared to Hispanic men and other minority women. Antecol and Bedard (2002) report that education is statistically significant for Hispanic women. Using the National Longitudinal Survey of Youth (NLSY), they use data from Hispanic women aged 14-22 to conclude that education differs across racial and ethnic groups. Compared to White women, Hispanic women had a lower percentage of college advancement, while Black women experienced a higher percentage of return to all forms of education. For my own model, I aim to see if education plays

a large role in the difference in coefficients between all four racial groups to see if there is any indication of a difference in employment.

While there has been ample amount of research on the wage and salary differences between sexual orientation, there has been little research on whether race has a large impact on the wage gap in addition to a worker's sexual orientation. To start with my data and research, I used Blinder (1973) as a main part of my methodology. Blinder (1973) created two regressions, where he took the natural logarithm of earnings, income or wage and other observable characteristics. One of the equations indicates the high-wage income group (white males) and the second equation indicates low income groups (white women and Black men). To calculate the differences between the two regressions, he uses two steps. First, he subtracts the coefficient of the high income group from the low income group, which he labeled as "U" This amount represented by the subtracted coefficients would represent the differences in average characteristics/ Secondly, he calculates the summation of all the observable characteristics and the difference between the high and low group coefficients or "C". Adding C and U would add up to "D" or the portion of the results that can be attributed to discrimination.

With this methodology, there findings reveal a difference in wages: White workers were paid about 30 percent more than Black workers (because of lower observable characteristics). White women benefit from their family history and job location. In summary, about two-thirds of the wage gap present between men and women indicate to outright discrimination in labor markets and one third is interpreted to be discrimination in the workers occupational status and job seniority status. Both Oaxaca and Blinder's models will be useful in my own study because they provide the background to some of the key theories behind wage differences.

The determinants of the observed wage gap are explored using OLS regressions, the Blinder composition and the Oaxaca-Blinder decomposition. This paper also builds extensively on the methodology of Douglas and Steinberger (2015). Their study applies the 2000 U.S Census to explore the sexual orientation gap between four major ethnicities: Asian, White, Black and Hispanic. This specific study goes beyond their work by comparing the wage gap of the sexual minority workers during the years 2013-2017, years before and after the Marriage Equality Act of 2015 was enacted. The wage gap shows heterogeneity between race groups. Douglas and Steinberger (2015) also use another classical literature to support their research. They use the Oaxaca-Blinder theory as the backbone of their methodology and economic model.

The wage gap shows heterogeneity between race groups. Using data from the 2000 U.S Census Data from the 1% and 5% samples, Douglas and Steinberger (2015) report that White and Asian gay couples earn about 3-4% less than married heterosexual men of the same races. Using OLS regressions, they use the natural log of wages as dependent variable and the individual's human capital and demographic characteristics as independent variables. For Black and Hispanic gay men, they find unexpected results of a wage advantage of about 2.8- 13.5%; but when compared to White gay men, Hispanic and Black gay men earn about 14.7% and 6.7% less, respectively. Finally, regardless of race, lesbian women earn more than their married and cohabiting heterosexual counterparts. Black and Hispanic lesbians had a wage bonus relative to white married heterosexual women. It is unclear if the wage benefits or penalty is because of the workers race, sexual orientation or both.

The Oaxaca-Blinder theory is a combination of two separate works: Oaxaca (1973) and Blinder (1973). This method measures the differences in earning gaps in the workforce to prove the existence of discrimination. Originally used in labor economics, it has been applied since to examine other social issues, including education, where the method can be used to assess how much of a gap is due to differences in observed characteristics and unobserved/unexplained characteristics and gaps. For earnings differentials, the use of multivariate regression models allows to test for alternative reasons for potential wage gap. The decomposition method, the technique used for analyzing earnings differentials, was popularized in the economics literature by Oaxaca (1973) and Blinder (1973).

Discrimination may also exist in the process of allocating individuals in different industries and leaving no opportunity for job advancement. Therefore, different industries must be examined to see if discrimination stops LGBTQ workers from making as much as heterosexual workers in the same industry. From the various industries in the data, I will be paying special attention to the various careers: Professional and Management sectors, Finance and Real Estate divisions and the Information industry. I chose to examine these three industries because these industries are known to be discriminative toward LBTGQ workers and workers of colour and this is represented in my model with the variable *I*.

Douglass and Steinberger (2015) argue that gay Hispanic men are significantly more likely to work in managerial or professional jobs, and both Hispanic and Black gay men are more likely to hold sales and office jobs relative to married and single heterosexual men. In addition,

Antecol et al (2009) examines occupational sorting to see if individuals in same-sex couples have a wage advantage in specific male or dominated occupations. Like many other studies, they use the 2000 U.S. Census to estimate log wage equations by sexual orientation and gender. And like the previous study, they too use the standard Oaxaca-Blinder (1973) decomposition.

On the other hand, Antecol and Bedard (2002) report that occupation had no statistically significant relationship to wages for Hispanic women. This could be due to a lack of resources available, geographical location and many other factor's such as children or if the worker works full time or part time. Their study is also thirteen years older than the former's, which mean significant changes could have occurred so Hispanic women and men could potentially have a higher education or occupation or industry coefficient. Douglas and Steinberger (2015) reports that Asian gay men and lesbians are more likely to hold a bachelor's degree than their white counterpart and Black and Hispanic gay men and lesbian women (of all races) are less likely to hold a bachelor's degree. The last coefficient, *A*, indicates age. The coefficients in the regression indicate that the older the worker is, the more or less the wage/salary could be.

In addition to using these variables in my regressions, I also used the welfare (public assistance) income as a dependent variable, while keeping all of the other variables constant. As stated earlier by the longitudinal study conducted by Badgett et al, (2013) that states that proves that LGBTQ workers are more likely to receive any form of public assistance. While analyzing a time comparison between the years of 2013-2017, I ran a log regression to determine if any (if all) of the independent variables causes a change in the amount of welfare received by LGBTQ workers.

Therefore, the second regression formula will be described as the following:

$$W_{it} = \beta_0 + \beta_1 * H_i + \beta_2 * R_i + \beta_3 * S_i + \beta_4 * RE_i + \beta_5 * E_i + \beta_6 * A_i + \varepsilon_\iota$$

Where W is the log of welfare (public assistance) and the independent variables follow the same definition and format of the first regression. The results of the first and second regressions will coincide with one another because if a gay or lesbian worker experiences an unfair decrease in wages or reports a continuous difference in their salary in comparison to heterosexual workers, the household will most likely use public assistance programs to ensure their survival. This may

include using food stamps, health insurance and other programs. There is a potential for discrimination toward these workers which could result in lower amounts of public assistance.

Robustness Check

Table 1 reports on the summary statistics for all of the variables used in the model. Before conducting any of the multiple regression or reporting the results, it's important to check for robustness. It is important to test for robustness so the data is consistent, the results do not rely too heavily on small parts of the data and to ensure the conclusions hold under different assumptions. The first robustness check was to test for multicollinearity which occurs when independent variables in a regression model are correlated. A key goal of regression analysis is to isolate the relationship between the natural log of salary/income and welfare/public assistance and the various independent variables. To test for multicollinearity, the variance inflation factor (VIF) was used. The VIF identifies correlation between independent variables and the strength of that correlation. While using the VIF, the variables detailing education, number of hours workers, employment status, and metropolitan status all contained values smaller than 1.13, which indicates that there is a moderate correlation, but it is not severe enough to warrant corrective measures. These numbers are show in Table 2A. However, the age and regional variables: South, Northeast and West and all contained values greater than 5 (Northeast being the smallest at 7.26) and these are detailed in Table 2B. These four dummy variables present problems in the regression because VIFs greater than 5 represent critical levels of multicollinearity where the coefficients are poorly estimated, and the p-values are questionable. But, because part of my hypothesis argues that wages produced by same-sex couples vary by region, the dummies have to stay in the regression. Therefore, for my study tested positive for imperfect multicollinearity within the regional variables.

The next robustness check conducted was to check for heteroscedasticity. Because the data is classified as a combination of panel and cross-section data, since it contains both individual and household level data. The null hypothesis for homoscedasticity is that the errors are homoscedastic if the alpha is equal to one, while the alternative hypothesis is that the errors are heteroskedastic if the alpha is more than one. The results show that the p value is equal to zero in four decimal places, so we can reject the null hypothesis of homoscedasticity. So there is

potential problems with this data set: a serial correlation problem and a heteroscedasticity problem. To rectify this, the regressions will now have robust standard errors.

Results

Salary/Wages/Income

The research question for this study evaluates the wage gap between sexual and racial groups. Another question posed is: does specific sexual orientation provide certain penalties or advantages in the workforce? Table 3 and 4 shows the sexual orientation wage gap separated by the chosen four racial group. The first part of the analysis is separated by racial groups as I compare all of the sexual and racial groups against each other. Then, I compare the racial and sexual minority groups: gay, lesbian, Asian, African-American and Latinx/Hispanic workers against the dominant groups: White heterosexual men.

The second section of analysis will report the findings from the Oaxaca-Blinder (1973) decomposition. Here, I will contrast the explained and unexplained gaps and draw conclusions based on the various observable and unobservable variables. Ultimately, these differentials will discuss how they can potentially impact workers and households. To explore if members of racial and sexual orientation minority groups display different returns to human capital characteristics and industry choice then white homosexual and heterosexual peers, Table 3 and 4 report different values than expected. According to the results, there is horizontal discrimination in the Retail trade career (across all races), but it's not to the degree of the Art and Entertainment career path. The Finance and Professional industries see high returns to wage, but it varies from the worker's race. The variable, *region,* provides further analysis into male workers. Compared to straight men, older gay men have a bigger wage, which implies that the individual gains more experience as they grow older or they could be working in industry or occupation where job promotions and wage raises are easily available to them.

Breakdown by Race: Results for Males

1. *African-American/Black Men*

Returns to observable characteristics, particularly education, vary between sexual orientation and the worker's races. The coefficients in the education variable has very small

differences between the groups. The results show that gay African American/Black and Hispanic/Latinx are more likely to have a higher degree than the other racial and sexual minority groups. Additionally, the values are statistically significant at the 10% level. Interestingly, unmarried heterosexual African American/Black men are most likely to be employed than. However, the amount of hours they report are similar to married White and Asian males.

Workers also divide into occupational categories differently by race. Between the four various industries I have chosen, there results indicate that there are differences in wages. In the Arts, Entertainment and Recreational industry, it is evident that there is horizontal discrimination across all of the various sexual orientation and races. The regression shows negative coefficients across all races and sexual orientations, proving that this industry has the lowest wages for workers. Gay African-American/Black workers are more likely to not work in this industry. However, they are more than 1% more likely to work in the Finance and Insurance industry. Unmarried African-American/Black men are also the most likely to work in the Arts and Entertainment industry. Lastly, unmarried African-American/Black workers are most likely to live in the West. Unmarried/Single African-American/Black men are the least likely to live in metropolitan areas, particularly those located in the Midwest area.

2. Latinx/Hispanic Men

Latinx/Hispanic are more likely to have large returns to education, but the values are very small between the racial groups. This presents a different result that all the other literature that report that gay Black and Hispanic men have lower returns to education. While the difference in return to education could be due to the years of education chosen for the regression, and other observable characteristics that were placed into the wage equation such as age. Gay Latinx/Hispanic men have the highest returns to their salary based on age, implying that the older the worker is they will only see a 10% increase in wages, which is more than an 8% difference compared to the groups with the least returns.

Gay Latinx/Hispanic men are more likely to also work in the Finance and Insurance and Professional and Management industry because of the extremely high potential wages. From the Finance and Insurance career, gay Latinx/Hispanic more likely to be involved in these careers. The Professional and Management industry career path is most beneficial for gay Latinx/Hispanic men which follows Douglas and Steinberger's (2015) results of finding that gay

Hispanic men are significantly more likely to work in managerial or professional jobs. Additionally, the Professional and Management industry has close values throughout the groups, indicating that discrimination could not have a large impact on wages. By region, workers of this race are most likely to live in the South.

3. *White Men*

By industry, married heterosexual White men are more likely to hold jobs in the Arts and Entertainment careers, relative to their gay and unmarried counterparts. White men are probably more likely to be have these job placements, because the Art and Entertainment path may be hard to break into and in both careers, and other races may face opposition or discrimination from entering that particular industry. The Retail Trade career presents similar results as married White men see significant returns to that industry. Another finding to note is the results for education. Gay White men receive the least returns to education- about 1.4% less than Latinx/Hispanic men. These results go against some of the literature (PUT SOME HERE) because it was expected that this racial group would have the highest coefficients for every variable, especially for education, but this hypothesis has been rejected.

Looking by region, workers in this racial group are also least likely to live in the West and to live in metropolitan areas. This implies that White men are most likely to live in suburban, rural or micropolitan areas.

4. *Asian Men*

Furthermore, the difference in industries can also be because of the location of the worker or household and if the couple lives in a metropolitan area. However, unmarried heterosexual Asian men are the most adaptable as they have the highest reported wages compared to all other races and sexual orientations. Like married African-American men, married Asian men have high coefficients for the Retail Trade career, making this their preferred career choice. For education, Asian males (both unmarried and unmarried) have the best outcomes for income and salary which aligns with the finding from Kim (2009). Finally, workers of Asian descent are more likely to work in metropolitan areas. This could be due to metropolitan Ares having more job opportunities compared to other areas.

Results for Females

Like male workers, Table 3 shows that all women are more likely to engage in careers in Finance and Insurance and the Professional and Management industries. One question posed is why are workers (both male and female) earn significantly lower wages in the arts and entertainment industry? It could possibly be because the current labour force may make it extremely hard to enter the art industry, workers could possibly have part-time work in the industry, thus being omitted in the sample or in terms of age and education, there would be a negative relationship where the older the worker gets, or the higher their education or human capital, the less they are involved in the arts industry.

With the regression, my model is constituent with their results because lesbian women indeed (no matter the race) make less in the retail trade and arts and entertainment industries, which can be described as female-dominated occupations. Instead, the lesbian workers experience a wage advantage during the finance and insurance and professional and management occupations, but compared to heterosexual white men, their reported wages are smaller, thus facing a wage penalty.

1. *African-American/Black Women*

For women, lesbian African-American/Black experience statistically significant returns to education. The values given to these three groups are very close to the values found from African-American males. Lesbian African-American/Black women are reported to earn higher wages, in the two out of the four industries: Retail Trade and the Arts and Entertainment industries. Based on the results, heterosexual women are more likely to receive public assistance than their gay counterparts, but the difference is less than 5%.

2. *Latinx/Hispanic Women*

Hispanic/Latinx workers experience similar returns to education to male workers of the same race and sexual minority status. Compared to heterosexual white men, however, they exhibit a wage advantage of less than 1%. The professional and management industry reports different results with Latinx/Hispanic workers receiving the most percentage of wages. Compared to other races, this racial group are the least likely to live in metropolitan areas. Unexpectantly,

Latinx/Hispanic women will most likely to live in the West, due to the high amount of public assistance that can awarded.

3. White Women

White women show very similar reported wages for the heterosexual married and unmarried groups. But compared to these two groups, lesbian white women face a wage advantage of about 2%. As stated before, these values aren't large, but they could make a difference in terms of whether or not the household applies for any form of public assistance or has enough money to pay their bills and obligations. According to the result, heterosexual White women receive the better wages compared other races which indicates that this race would be in the most financially stable careers compared to other racial minorities and lesbian White co-workers. This is interesting to note, because Antecol and Bedard (2002) conclude that lesbian women face a larger penalty in female-dominated occupations and a smaller wag advantage in male-dominated professions.

4. Asian Women

Gay Asian women receive less public assistance benefits than heterosexual Asian women. The most significant variables for this racial group are education, numbers of hours worked and age. The values reported are significant at the 10% level. Heterosexual Asian women receive the second-best return to education, but workers who are not working do not have a significant amount of public assistance. Instead the older the worker is and the more hours they work, the more benefits they receive.

Oaxaca-Blinder Decomposition

Results for Males

If the worker experiences large racial and sexual orientation disadvantages or penalties, how large is the discrimination gap? The results of the Oaxaca–Blinder decompositions are reported in Table 5A and 5B, which details the values of each input represented by the total log wage gap of all the racial same-sex groups. This method is used to measure discrimination and I emphasize the relationship between the coefficient of the variable and the unexplained part of the

decomposition. My goal is to be able to calculate and explain the unexplained portion of the OLS regression. Both Tables reports the wage gaps between each of the same-sex sexual minority workers compared to the same-race heterosexual workers. Each of the wage gaps shown in the tables can be explained by the Oaxaca-Blinder decomposition, however it varies by group. Based on the literature: Steinburger and Douglas (2015) and Kim (2009), I expect that the unexplained gap between the two sexual groups will be largely explained due to the large coefficients in the heterosexual sexuality category. For workers of colour: Asian, Latinx/Hispanic and African-American/Black, the observable characteristics should account for the majority of the unexplained gap.

The first part of the decomposition in Table 5A, examines the difference between gay and heterosexual men from the four racial groups. In order, these are the racial groups that experienced the least to most unexplained gaps: White, Latinx/Hispanic, Asian and African-American/Black men. Unexpectantly, Asian men have the greatest gap, and this too would be accounted for industry choice. The second worst group, heterosexual Black men, see a greater increase in the unexplained gaps, but education wont not account for this gap. Instead industry may be accounted for this gap.

White men have the most diverse results as they more inclined to be a part of the "feminine" career paths such as Retail Trade and Arts & Entertainment, but they are also less employed than all the other races. Like White women, White men have the least unexplained gaps, implying that race has a larger wage penalty than sexuality. Lastly, Latinx/Hispanic men too have large unexplained gaps, but region choice and metropolitan location will be a part of the gap.

2. Results for Females

The second part of the Oaxaca-Blinder decomposition results in Table 5B, compare the returns to homosexual, married and single heterosexual workers of the same gender. African-American/Black and Asian lesbians experience the greatest unexplained penalty relative to white lesbian women and Black married women. Based on the decomposition results, education is not the reason for the huge gaps, because heterosexual African-American and Asian women. On the other hand, lesbians of these same racial groups have the worst reports for education, implying that there is a difference in education received by lesbian and heterosexual women.

Asian women experience the second worst unexplained gaps from both lesbian and heterosexual women. By industry, lesbian Asian women would not likely work in the Professional and Management Industry because of the very low returns to wage. However, they would most likely work in the Finance industry. Latinx/Hispanic women have the second-best unexplained gap and education coefficients. The findings from this racial group are similar to the results in the income and salary regressions. Both lesbian and heterosexual Latinx/Hispanic women make the best values in the Professional and Management industry.

As expected by Douglas and Steinberger (2015), White women have the smallest unexplained gaps. Specifically, lesbian White women, has a greater gap than heterosexual White women. They are the most likely to be employed. However, the results showing industries, are different from the values from the original regressions. Lesbians are more likely to work in the Finance and Real Estate industry, but not in the Retail and Arts & Entertainment industries. Finally, like the wage regressions, they are not likely to live in metropolitan areas.

Welfare Analysis

The third part of the analysis examines the welfare status of racial and sexual minority workers. Table 6 and 7 show the values of the welfare status for all groups of the four racial groups and two sexual orientations. As stated before, this regression models the effect of the natural logarithm of welfare or public assistance on the effect on the four races, sexual identification and the rest of the independent variables. However, in this model these industries and marital status are excluded to provide for a baseline for the amount of public assistance a household can be awarded between just for homosexual and heterosexual workers. The research questions centered in this section include; are gay and lesbian workers already disenfranchised before they commit to a specific industry. Also, do racial and sexual minority workers also face a double penalty compared to heterosexual or white workers?

Results for Males Across Sexual Orientation

The regressions show similar values to the first equation (which measures income). Compared to their heterosexual counterparts, gay White workers receive more benefits from all of the variable except at the constant and metropolitan status. This implies that White gay men who live in metropolitan area receive up to 3% less than unmarried heterosexual White men.

Despite this welfare advantage, this variable for gay white men is not significant at the 95% confidence level. Of all the variables, the Southern region and education accounts for the largest differences in public assistance, ranging from 2% and 9% respectfully. For determining which variables are significant in the model, there is evidence supporting that all of the variables, are not significant for gay White men. These results are unexpected because in the previous regression, the variables (except for the Southern region) were all significant. Plus, in theory, education and the number of hours worked could allow the individual to work more hours to avoid receiving any public assistance. But, on the other hand, if the worker's wages are shown to have discrimination, then no matter how many hours they work, they will never make as much as their heterosexual counterparts.

Gay and Heterosexual Black men have worse returns compared to their white counterparts. Gay Black men have no significant variables in this model, but they do work more hours a week and are more likely to live in the Midwest region. This group also has the least returns to education, implying that Black gay men who are educated, receive less welfare benefits than the other racial groups. Unexpectantly, gay Latinx/Hispanic men and White males receive the most amount of welfare, but for White men, their employment status is not significant for this value. Employment Status and the number of hours worked per week are low for Hispanic men. In conclusion, based on the model, gay men (except for African-Americans) receive less welfare than their heterosexual counterparts.

Results for Females Across Sexual Orientation

The results differ for lesbian White females. The percentage of welfare or public assistance is significant but smaller across the education. White lesbians who have obtained any form of higher education are less likely to have public assistance by less than 1%. Therefore, the values between these two groups are very small for education, indicating that they have similar returns to education (which is represented in Table 7). For heterosexual White women, the returns across age, number of hours worked are not significant, but they are larger than the values for white lesbians. Another interesting thing to note, is the 95% Confidence Intervals in each model. Even though the values between the two sexual orientation groups are close together, the intervals are large, ranging from negative to positive values. The R-squared is .0324, meaning that approximately 32% of the variability of welfare is accounted for by the

variables in the model. In this case, the adjusted R-squared indicates that about 19% of the variability of welfare is accounted for by the model. Both values are also very low values, meaning that the variables are not good fits for the model.

African-American/Black and Asian women receive the best values in return to the amount of public assistance. However, like their male counterparts, they are the least likely to be employed. In both racial groups, the heterosexual women receive less benefits by metropolitan areas; implying heavily that women of colour are more beneficial in areas that are not classified as metropolitan.

Conclusion

This study hoped to measure the sexual orientation gap between racial minorities, using OLS regressions and the Oaxaca-Blinder decomposition. After the initial wage regressions, I find that there is a definite wage gap between races, that is mostly dependent on education and industry choice. These results are supported by the Oaxaca-Blinder decomposition, which reported that the unexplained gaps in the wage distribution is mostly felt by gay and lesbian workers of colour. Lastly, in terms of public assistance or welfare, the results follow the results from wages: males receive more benefits than females but, people of colour (specifically Latinx/Hispanic and Asian) receive more benefits than African-American/Black and White workers.

There are some limitations to the study. Because there were so few observations for same-sex couples, this presented a problem when examining the gaps between the heterosexual and homosexual groups. Secondly, the models suffer from Omitted Variable Bias from omitting part time workers, specific industries, workers below the age of 25 and over the age of 65, and any other education attainment below college level. If this research question were to be explored in the future, I would recommend using another survey to properly examine labour market behavior, include more industries in the model. Policy suggestions would be to introduce a new law prohibiting discrimination (whether obvious or discrete) in the workplace and providing protection for LGBTQ workers. If these policies were to be introduced, fewer LGBTQ workers would experience large unexplained wage gaps, or won't have to resort to applying for public assistance.

Work Cited

Antecol, Heather, Jong, Anneke., & Steinberger, Micheal. (2008). The Sexual Orientation Wage Gap: The Role of Occupational Sorting and Human Capital. *Industrial and Labor Relations Review*, 61(4), 518-543.

.

Antecol, Heather, and Kelly Bedard. 2002. "The Relative Earnings of Young Mexican, Black, and White Women." *Industrial and Labor Relations Review*, 56(1): 122–35.

Badgett, Lee V. M. (1995). The Wage Effects of Sexual Orientation Discrimination. *Industrial and Labor Relations Review*, 48(4), 726–739.

Badgett, Lee V. M., Durso, Laura E, & Schneebaum, Alyssa. (2013), "New Patterns of Poverty in the Lesbian, Gay, and Bisexual Community," *The Williams Institute*. Retrieved from https://williamsinstitute.law.ucla.edu/wp-content/uploads/LGB-Poverty-Update-Jun-2013.pdf.

Badgett, M. V. Lee, Gary Gates, and Lisa Saunders (2005) "Double Disadvantage? African American Same-Sex Couples: Evidence from Census 2000." Working Paper. Los Angeles: The Williams Institute, UCLA School of Law.

Badgett, M., Lau, H., Sears, B., & Ho, D. (2007). Bias in the Workplace: Consistent Evidence of Sexual Orientation and Gender Identity Discrimination. UCLA: The Williams Institute.

Bell, J. (2018). "Rethinking the "Straight State": Welfare Politics, Health Care, and Public Policy in the Shadow of AIDS," *Journal of American History*, 104: 4, 931–952.

Black, Dan A., Makar, Hoda R., Sanders, Seth G. & Taylor, Lowell J. (2003). The Earnings Effects of Sexual Orientation. *Industrial and Labor Relations Review*, 56(3), 449–469.

Blinder, Alan S. (1995). Wage Discrimination: Reduced Form and Structural Estimates. In W. Darity Jr. (Ed.), *Economics and discrimination*. 57(2), 20–39.

Carnevale, Anthony P., Stephen J. Rose, and Andrew R. Hanson. Certificates: Gateway to Gainful Employment and College Degrees. *Georgetown University Center on Education and the Workforce*. Washington, D.C. (2012).

Douglas, J. H., & Steinberger, M. D. (2015). The Sexual Orientation Wage Gap for Racial Minorities. Industrial Relations: *A Journal of Economy and Society*, 54(1), 59-108.

Korenman, S., & Neumark, D. (1991). Does Marriage Really Make Men More Productive? The Journal of Human Resources, 26(2), 282-307.

Gates, Gary J. and Christopher Ramos. (2008). Census Snapshot: California's Black LGB Population. Los Angeles: *The Williams Institute*.

Grossbard, Shoshana & Jepsen, Lisa. (2008). The Economics of Gay and Lesbian Couples: Introduction to a special issue on gay and lesbian households. Review of Economics of the Household, 311-325.

Kim, Marlene. (2009) "Race and Gender Differences in the Earnings of Black Workers." *Industrial Relations*, 48(3): 466–88.

Martell, M. (2013). Differences Do Not Matter: Exploring the Wage Gap for Same-Sex Behaving Men. *Eastern Economic Journal*, 39(1), 45-71. Retrieved from http://www.jstor.org/stable/23524239.

Mize, Trenton. D. (2016). Sexual orientation in the labor market. *American Sociological Review*, 81(6), 1132-1160.

Movement Advancement Project and Center for American Progress (September 2014). *Paying an Unfair Price: The Financial Penalty for Being LGBT in America*. http://www.lgbtmap.org/unfair-price

Oaxaca, R. (1973). Male-female wage differentials in urban labor markets. *International Economic Review*, 14(3): 693–709.

Sayers, R., Levendis, J., & Dicle, M. (2017). The Sexual Orientation Wage Gap in the USA. *International Journal of Social Economics*, 44(12), 1846–1855.

Suh, Jingyo. (2009) "Trend of Gender Wage Gap among Asian Americans." *Journal of Case Research in Business and Economics,* 1:15–27.

Table 1: Summary Statistics

Variables	# of Observations	Mean	Standard Deviation
Log of Wages	146,309	10.7058	.8255
Education	150,745	.9143	.9341
Metropolitan Status	150,745	.4247	.4943
Age	150,745	39.2838	11.3066
Age^2	150,745	1671.059	938.2346
Marital Status	150,745	1.3524	.4777
Race	150,745	1.0656	.3325
Sex (Gender)	150,745	1.4656	.4988
Same-Sex	150,745	.0167	.1822
Employment Status	150,745	.9805	.1381
Midwest	150,745	.0596	.2367
Northeast	150,745	.1256	.3314
South	150,745	.4520	.4976
West	150,745	.3460	.4756
# of Hours Worked	150,745	43.9830	7.798

Table 2A: VIF Values Before Correction

Variable	VIF
Age	62.22
Age^2	59.61
South	15.39
West	14.22
Northeast	7.65
Midwest	4.35
Metro_Area	1.12
Education	1.07
uhrswork	1.05
Employment	1.00
Sex	1.03
Race	1.01
Marital Status	1.38
Same-Sex	1.00
Mean VIF	12.29

Table 2B: VIF Values after Correcting

Variable	VIF
Age	1.30
South	15.39
West	14.22
Northeast	7.65
Midwest	4.35
Metro_Area	1.12
Education	1.06
uhrswork	1.04
Employment	1.00
Sex	1.03
Race	1.01
Marital Status	1.30
Same-Sex	1.00
Mean VIF	3.96

Table 3: Male's OLS Coefficient Values with a Dependent Variable of Log Salary/Wages with Fixed Effects

	Race/Ethnicity											
Variable	White			Black/African American			Latinx/Hispanic			Asian		
	Gay	Married	Unmarried	Gay	Married	Unmarried	Gay	Married	Unmarried	Gay	Married	Unmarried
Industry												
Retail Trade	-.1283* (.007)	-.1271* (.0070)	-.1272* (.0070)	-.1360* (.0079)	-.1271 (.0070)	-.1274 (.0071)	-.1332 (.0077)	-.1271 (.0070)	-.1275 (.0071)	-.1379* (.0080)	-.1271* (.0070)	-.1273* (.0071)
Finance and Insurance	.1898 (.0065)	.1908 (.0065)	.1909 (.0065)	.2029 (.0072)	.1908 (.0065)	.1907 (.0065)	.2001 (.0070)	.1908 (.0065)	.1909 (.0065)	.2028 (.0072)	.1908 (.0065)	.1907 (.0065)
Professional, Scientific, and Management.	.1109 (.005)	.1104 (.0055)	.1104 (.0055)	.1129 (.0061)	.1105*** (.0055)	.1103 (.0055)	.1143 (.0059)	.1105 (.0055)	.1104 (.0055)	.1134 (.0061)	.1105 (.0055)	.1103 (.0055)
Arts Entertainment, and Recreation.	-.2501 (007)	-.2502 (.0073)	-.2503 (.0073)	-.2700 (.0084)	-.2502 (.0073)	-.2498 (.0073)	-.2648 (.0082)	-.2502 (.0073)	-.2497 (.0073)	-.2692 (.0085)	-.2502 (.0073)	-.2497 (.0073)
Education	.2217* (.0020)	.2357* (.0020)	.2357* (.0020)	.2231* (.0022)	.2357 (.0020)	.2358* (0020)	.2199 (.0021)	.2357** (.0020)	.2359* (.0020)	.2226* (.0022)	.2357* (.0020)	.2359 (.0020)
Employment Status	.9335 (.0135)	.9560 (.0136)	.9559 (.0136)	.9444 (0151)	.9560 (.0136)	.9561 (.0137)	.9401 (.0147)	.9560 (.0136)	.9561 (.0137)	.9466 (.0152)	.9560 .(0136)	.9561 (.0137)
Hours Worked per Week	.0171 (.0002)	.0179* (.0002)	.0179 (.0002)	.0173 (0002)	.0179 (.0002)	.0179* (.0002)	.0171 (.0002)	.0179* (.0002)	.0179 (.0002)	.0172 (.0002)	.0179 (.0002)	.0179 (.0002)
Metropolitan Area	.0248 (.0039)	.0277 (.0002)	.0277 (.0040)	.0264 (0043)	.0276 (.0040)	.0277 (.0040)	.0243 (.0042)	.0276 (.0040)	.0274 (.0040)	.0269 (.0044)	.0276 (.0040)	.0273 (.0040)

Age	.1088 (.0012)	.0188 (.0001)	.0188 (.0001)	.1016 (0014)	.0188 (.0001)	.0188 (.0001)	.1051 (.0013)	.01882 (.0001)	.0188 (.0001)	.0269 (.0044)	.0188 (.0001)	.0188 (.0001)
Region												
Midwest	.0675 (.0162)	.0720 (.0165)	.0720 (.0169)	.0617 (.0177)	.0722 (.0165)	.0728 (.0168)	.0688 (.0175)	.0721 (.0165)	.0725 (.0165)	.0640 (.0178)	.0722 (.0165)	.0729 (.0165)
South	.0181 (.0146)	.0278 (.0162)	.0278** (.0148)	.0181 (0159)	.0278 (.0148)	0281 (.0149)	.0206* (.0156)	.0278 9.0148)	.0277** (.0148)	.0171 (.0159)	.0278 (.0148)	.0282 (.0149)
Northeast	.1508 (.0155)	.1536 (.0157)	.1535 (.0157)	.1428 (0168)	.1537 (.0157)	.1546 (.0157)	.1455 (.0165)	.1536 (.0157)	.1539 (.0157)	.1524 (.0169)	.1537 (.0157)	.1545 (.0157)
West	.1108 (.0147)	.1212 (.0149)	.1211 (.0149)	.1194 (0160)	.1213 (.0149)	1218 (.0149)	.1196 (.0158)	.1212 (.0149)	.1214 (.0149)	.1184 (.0160)	.1213 (.0149)	.1218 (.0149)

Table 1 Continued: Male's OLS Coefficient Values with a Dependent Variable of Log Salary/Wages

Values in parenthesis are robust standard errors

*** significant at 1% level, ** significant at 5% level, * significant at 10% level

Table 4: Female's OLS Coefficient Values with a Dependent Variable of Log Salary/Wages with Fixed Effects

	Race/Ethnicity											
Variable	**White**			**Black/African American**			**Latinx/Hispanic**			**Asian**		
	Lesbian	Married	Unmarried	Lesbian	Married	Unmarried	Lesbian	Married	Unmarried	Lesbian	Married	Unmarried
Industry												
Retail Trade	-.1269 (.0071)	-.1271 (.0070)	-.1271 (.0070)	-.1351 (.0081)	-.1272 (.0070)	-.1273 (.0071)	-.1314 (.0078)	-.1272 (.0070)	.1275 (.0071)	-.1338 (.0081)	-.1272 (.0700)	-.1273 (.0071)
Finance and Insurance	.1904 (0065)	.1908 (.0065)	.1909 (.0065)	.1882 (.0070)	.1908 (.0065)	.1904 (.0065)	.1894 (.0069)	.1908 (.0065)	.1903 (.0065)	.1886 (.0070)	.1908 (.0065)	.1905 .0065)
Professional, Scientific, and Management.	.1114 (.0055)	.1105 (.0055)	.1105** (.0055)	.1124 (.0061)	.1106 (.0055)	.1104* (.0055)	.1166 (.0059)	.1104* (.0055)	.1108 (.0055)	.1140 (.0061)	.1106 (.0055)	.1103 (.0055)
Arts Entertainment, and Recreation.	-.2498 (.0073)	-.2502 (.0073)	-.2502 (.0073)	-.2526 (.0083)	-.2500 (.0073)	-.2494 (.0073)	-.2503 (.0080)	-.2500 (.0073)	-.2488 (.0073)	-.2522 (.0083)	-.2500** (.0073	-.2494 (.0073)
Education	.2196* (.0020)	.2356* (.0020)	.2357* (.0020)	.2233* (.0021)	.2357* (.0020)	.2355 (.0020)	.2211 (.0021)	.2356 (.0020)	.2355* (.0020)	.2231 (.0021)	.2356* (.0020)	.2355 (.0020)
Employment Status	. 9335 (.0135)	.9560 (.0136)	.9560** (.0136)	.9248 (.0156)	.9560 (.0136)	.9572 (.0137)	.9313 (.0151)	.9550 (.0136)	.9565 (.0136)	.9207 (.0157)	.9550 (.0136)	.9573 (.0137)
Hours Worked per Week	.0171 (.0002)	.0179 (.0002)	.0179 (.0002)	.0194. (.0184)	.0179 (.0002)	.0178 (.0002)	.0179 (.0002)	.0179 .(.0002)	0179 (.0002)	.0185 (.0002)	.0179 (.0002)	.0178 (.0002)

Metropolitan Area	.0262** (.0039)	.0277 (.0040)	.0276 (.0040)	.0216 (.0043)	.0276* (.0040)	.0272 (.0040)	.025*3 (.0042)	.0276 (.0040)	.0275* (.0040)	.0262* (.0043)	.0276 (.0040)	.0271* (.0040)
Age	.0271 (.0336)	.0188 (.0001)	.0188 (.0001)	.0186 (.0001)	.1088 (.0001)	.1089 (.0013)	0188 (.0001)	.0188 (.0001)	.0188 (.0001)	.1085 (.0013)	.0188 (.0001)	.0188 (.0001)
Region												
Midwest	.0621 (.0162)	.0720 (.0165)	.0717 (.0165)	.0775 (.0178)	.0722 (.0165)	.0713 (.0165)	.0641 (.0174)	.0719 (.0165)	.0714 (.0165)	.0721 (.0178)	.0720 (.0165)	.0713 (.0165)
South	.0167** (.0146)	.0278** (.0148)	.0278 (.01480	.0213 (.0160)	.0278 (.0148)	.0281*** (.0148)	.0142 (.0156)	.0278*** (.0148)	.0281 (.0148)	.0160 (.0160)	.0279 (.0148)	.0282 (.0148)
Northeast	.1476 (.0155)	.1535 (.0157)	.1536 (.0157)	.1570 (.0169)	.1537 (.0157)	.1538 .(0157)	.1435 (.0165)	.1538 (.0157)	.1539 (.0157)	.1544 (.0169)	.1539 (.0157)	.1539 (.0157)
West	.1096 (.0146)	.1212 (.0149)	.1212 (.0149)	.1213 (.0161)	.1213 (.0149)	.1210 (.0149)	.1110 (.0157)	.1211 (.0149)	.1210 (.0149)	.1162 (.0161)	.1212 (.0149)	.1211 (.0149)

Table 2 Continued: Female's OLS Coefficient Values with a Dependent Variable of Log Salary/Wages with Fixed Effects with Fixed Effects
Values in parentheses are robust standard errors
*** significant at 1% level, ** significant at 5% level, * significant at 10% level

Table 5A: Oaxaca-Blinder Decomposition Results by Sexual Orientation, Race and Gender for Males (Same-Race Homosexual and Heterosexual Workers)

Total Log Welfare (Public Assistance)	Race							
	African-American/Black		Latinx/Hispanic		White		Asian	
	Gay	Heterosexual	Gay	Heterosexual	Gay	Heterosexual	Gay	Heterosexual
Attributable to Differences in Characteristics								
Professional Management	.0873	.1015	.1043	.1073	.1123	.0930	.1018	.0821
Finance & Real Estate	.2582	.2231	.2842	.2193	.1981	.2818	.0821	.2646
Retail Trade	-.1166	-.1830	-.1520	-.1734	-.1521	-.0856	-.1040	-.1862
Arts & Entertainment	-.4955	-.3110	-.4505	-.3000	-.2702	-.2688	-.4835	-.3103
Education	.2135	.2372	.2268	.2287	.2045	.2335	.1871	.2478
Region	.0025	.00008	.0032	.0004	.0022	-.0001	.0020	-.0003
Hours Worked Per Week	.0223	.0166	.0193	.0173	.0155	.0178	.0104	.0172
Employment Status	.8751	.9771	.8553	.9732	.8741	.9535	.9086	1.020
Metropolitan Status	.1536	.0272	.1566	.0233	.1668	.0451	.1411	.0685
Age	.0174	.0193	.0170	.0186	.0191	.0186	.0199	.0164
Explained Gaps in the Model	40.8	34.7	43.2	41.8	56.7	63.4	34.9	32.9
Unexplained Gaps in the Model	59.2	65.3	56.8	58.2	43.3	36.6	65.1	67.1

Table 5B: Oaxaca-Blinder Decomposition Results by Sexual Orientation, Race and Gender for Females (Same-Race Homosexual and Heterosexual Workers)

Total Log Welfare (Public Assistance)	Race							
	African-American/Black		Latinx/Hispanic		White		Asian	
	Lesbian	Heterosexual	Lesbian	Heterosexual	Lesbian	Heterosexual	Lesbian	Heterosexual
Attributable to Differences in Characteristics								
Professional Management	.0905	.0928	.1488	.1268	.0962	.1122	.0777	.0947
Finance & Real Estate	.2453	.1915	.2145	.2045	.2891	.1977	.2676	.1892
Retail Trade	-.0400	-.1367	-.1153	-.1464	-.0776	-.1500	-.1310	-.0488
Arts & Entertainment	-.3043	-.2198	-.2462	-.2417	-.4294	-.2700	-.3159	-.2193
Education	.1751	.2469	.1900	.2470	.2075	.2341	.1871	.2478
Region	.0021	.0001	.0009	-.0006	.0008	-.0005	.0020	.0002
Hours Worked Per Week	.0096	.0145	.0163	.0171	.0169	.0179	.0104	.0146
Employment Status	.9110	.9303	.6823	.9370	.8741	.9590	.9086	.9280
Metropolitan Status	.1468	.0705	.1842	.0615	.1603	.0454	.1411	.0685
Age	.0190	.0163	.0205	.0174	.0190	.0187	.0199	.0164
Explained Gaps in the Model	35.6	41.8	40.7	44.5	49.9	52.4	35.7	39.7
Unexplained Gaps in the Model	64.4	58.2	59.3	55.5	50.1	47.6	64.3	60.3

Table 6: Male's OLS Coefficient Values with a Dependent Variable of Log Welfare (Public Assistance)

	Race/Ethnicity							
Variable	**White**		**Black/African American**		**Latinx/Hispanic**		**Asian**	
	Gay	Heterosexual	Gay	Heterosexual	Gay	Heterosexual	Gay	Heterosexual
Education	.1607** (.0610)	.1433** (.0590)	.1220 (.0861)	.1412** (.0587)	.1556*** (.0928)	.1407 (.0587)	.1430 (.0815)	.1410** (.0586)
Employment Status	-.1407 (.1409)	-.1656 (.1372)	-.2638 (.2169)	-.1677 (.1373)	-.2109 (.2282)	-.1689 (.1372)	-.1653 (.1888)	-.1687 (.1371)
Hours Worked per Week	.0040 (.0060)	.0037 (.0058)	.0056 (.0073)	.0035 (.0058)	.0075 (.0079)	.0035 (.0058)	.0021 (.0068)	.0035 (.0058)
Metropolitan Area	-.0230 (.1014)	.0014 (.0982)	.0498 (.1464)	.0131 (.0982)	.0234 (.1554)	.0121 (.0981)	-.0464 (.1364)	.0114 (.0980)
Age	.0093** (.0048)	.0077 (.0047)	.0094 (.0067)	.0084*** (.0047)	.0113*** (.0070)	.0084 (.0047)	.0121 (.0062)	.0084* (.0047)
Region								
Midwest	.2103 (.4423)	.1475 (.4217)	.1288 (.9698)	.1347 (.4216)	.6947 (1.3585)	.1295 (.4211)	.0482 (.8002)	.1299 (.4209)
South	-.1829 (.4094)	-.2584 (.3897)	-.3395 (.9338)	-.2725 (.3901)	.2284 (1.3255)	-.2744 (.3899)	-.3298 (.7653)	-.2730 (.3895)
Northeast	-.2602 (.4293)	-.3080 (.4068)	-.4378 (.9477)	-.3186 (.4072)	.0255 (1.3417)	-.3180 (.4069)	-.3353 (.7824)	-.3175 (.4067)
West	.1119 (.4071)	.0687 (.3870)	.0538 (.9315)	.0614 (.3874)	.5166 (1.3255)	.0615 (.3871)	-.0406 (.7638)	.0619 (.3869)

Values in parenthesis are robust standard errors
*** significant at 1% level, ** significant at 5% level, * significant at 10% level

Table 7: Female's OLS Coefficient Values with a Dependent Variable of Log Welfare (Public Assistance)

Variable	Race/Ethnicity							
	White		Black/African American		Latinx/Hispanic		Asian	
	Lesbian	Heterosexual	Lesbian	Heterosexual	Lesbian	Heterosexual	Lesbian	Heterosexual
Education	.1399** (.0589)	.1432* (.0590)	.1226 (.0757)	.1392** (.0588)	.1984** (.0721)	.1433 (.0590)	.1240 (.0760)	.1433* (.0590)
Employment Status	-.1521 (.1374)	-.1676 (.1373)	-.1657 (.1743)	-.1680 (.1372)	-.2322 (.1637)	-.1656 (.1372)	-.1372 (.1744)	-.1656 (.1372)
Hours Worked per Week	.0021 (.0058)	.0034 (.0058)	-.0014 (.0089)	.0038 (.0058)	-.0076 (.0078)	.0037 (.0058)	-.0054 (.0092)	.0037 (.0058)
Metropolitan Area	.0106 (.0983)	.0108 (.0981)	.0062 (.1262)	.0011 (.0982)	-.0205 (.1177)	.0014 (.0982)	.0105 (.1262)	.0014 (.0982)
Age	.0099* (.0048)	.0083 (.0047)	.0025 (.0064)	.0079* (.0047)	.0075 (.0056)	.0077 (.0047)	.0038 (.0066)	.0077 (.0040)
Region								
Midwest	.1238 (.4194)	.1407 (.4219)	-.0029 (.4470)	.1311 (.4213)	-.0139 (.4517)	.1475 (.4217)	.0036 (.4432)	.1475 (.4217)
South	-.2808 (.3883)	-.2722 (.3901)	-.3328 (.4054)	-.2612 (.3898)	-.2913 (.4077)	-.2584 (.3897)	-.3484 (.4024)	-.2584 (.3897)
Northeast	-.3256 (.4058)	-.3174 (.4071)	-.2957 (.4284)	-.3071 (.4068)	-.3603 (.4285)	-.3080 (.4068)	-.3129 (.4268)	-.3080 (.4068)
West	.0603 (.3855)	.0626 (.3873)	.0008 (.4009)	.0678 (.3870)	.0551 (.4041)	.0687 (.3870)	.0092 (.3980)	.0687 (.3870)

Values in parenthesis are robust standard errors
*** significant at 1% level, ** significant at 5% level, * significant at 10% level