1 Introduction

Heterogeneity in wage has been studied extensively in economics. One well-established finding is that often times income inequality is not such a bad thing. There is no better way to motivate the workers to put in effort than incentives that reflect the workers’ productivity. However, income inequality promotes efficiency only as long as a difference in individual productivity is driving a wage gap. Intuitively, if income is arbitrarily low or high regardless of productivity, this type of wage gap can be a source of inefficiency and unhappiness. One way that this can occur is through discrimination. Many theoretical and empirical studies of race-based or gender-based discrimination have been conducted, but the literature on the sexual orientation based wage gap is relatively new.

Disclosing sexual orientation to the public has not been popular among the L/G/B/T people in the past. Generally, individuals with any sexuality that deviates from heterosexuality have been subject to some form of discrimination. It can easily be imagined that the disclosure of sexual behaviors that deviate from social norms would not have been done frequently. More recently, however, many societies have become more open to diversity. Social acceptance of non-hetero sexualities, therefore, has increased over time, and more sexual orientation minorities have found the courage to disclose their sexuality. Hence, society’s growing openness with regards to sexual orientation has allowed for easier collection of data on sexual behavior and self-reported sexual orientation.

This, however, does not imply that the discrimination against non-heterosexual persons has become less prevalent. As the number of sexual orientation minorities disclosing their sexuality at work increases, the scale of direct discrimination toward the minority grows as well. Consequently, the civil rights of sexual orientation minorities in the work-
place has become a concern. Some states have adopted laws that specifically prohibit unequal treatment of employees based on their sexual orientation in recent decades. In response, some political movements against civil rights protection for sexual orientation minorities argue that gays and lesbians are already affluent people who do not require such protective measures (Badgett 1995). However, the available measurements of the wage gap at the time were not from a randomized sample and there was no statistical or economic explanation for why such a wage gap existed.

These two prerequisites for the emergence of the sexual orientation wage gap literature were met in the early 1990s. The growing openness toward non-traditional sexual orientation allowed for the measurement of sexual behaviors and political discussion regarding civil rights protection for L/G/B people in the United States and necessitated the analysis of the wage gap using econometric methods. Since the seminal paper by Lee Badgett was published in 1995, the literature has expanded to find unique characteristics about the sexual orientation wage gap as well as conflicting results. This paper attempts to provide a thorough overview of the sexual orientation wage gap literature and discuss where it is headed in the future.

The paper is structured in the following way: Section 2 lists the main theories on the causes of the sexual orientation wage gaps, and discusses them in detail. Section 3 discusses the empirical implementation of the wage gap analysis. This section contains an overview of the econometric methods and data used in the literature. Section 4 provides an overview of main results from the literature and discusses select papers. Section 5 discusses the current and future research possibilities and Section 6 concludes the paper.

2 Theory

The theoretical framework for the sexual orientation wage gap is part of a larger literature on wage determination. This paper will not attempt to go through the general theories
of the wage gap. Instead, it will go through the theories directly related to the sexual orientation wage gap. These theories are applied to explain the gay wage penalty and lesbian wage premium documented in various papers. Specifically, human capital accumulation, occupational sorting, lifestyle choices, and discrimination as they relate to the sexual orientation wage gap are the main topics discussed in this section.

2.1 Human Capital Accumulation

Becker (1991) discusses a model of household specialization. Although availability of contraception and broad changes in social norms regarding the necessity of marriage have changed the structure of the American family quite a bit in the last few decades, Becker’s theory is still relevant in the discussion of behaviors of families as a unit. Becker’s idea is related to the fact that men assume the role of the head of the family in a patriarchal society. Men’s responsibility is to work in the labor market to earn income and support their families. Women, on the other hand, mainly work at home, raising children and maintaining the house. This implies that a man will expect to form a family with a woman who has specialized in household production. In order to complement the woman’s specialization, the man will specialize in market production. Likewise, a woman will likely specialize in household production and expect to form a family with a man specialized in market production.

According to numerous papers including Black et al. (2003), this theory can be applied to the same sex family households if we consider that a gay man’s expectation on a formation of family is not the same as a heterosexual man’s expectation. A gay man, knowing he will form a family with another gay man instead of a heterosexual woman, will expect his partner’s specialization to be geared toward market production instead of household production. Complementarity between partners implies that a gay man needs to specialize less in market production and more in household production in order to compensate for his partner’s lack of household production capabilities. The same story
should hold for lesbian women, but in the opposite direction, making a lesbian woman need to specialize in market production more than a heterosexual one does.

The implication of Becker’s theory is that gay men will spend less effort in accumulating human capital for market production and lesbian women will spend more effort in accumulating human capital for market production, creating the appearance of a wage penalty for gay men and a wage premium for lesbian women. Also, given that market production requires a higher level of education, gay men should have lower levels of education compared to heterosexual men on average. Likewise, lesbian women require higher levels of education compared to heterosexual women.

2.2 Occupational Sorting

The theory behind occupational sorting is discussed in Blandford (2003) and Antecol, Jong, and Steinberger (2008). There are two different reasons to suspect that occupational sorting may be causing the wage gap. The first has to do with differences in the distribution of men and women across different occupations. The second has to do with the disenfranchised minority workers sorting themselves into the occupations with a less discriminatory work environment.

According to Antecol, Jong, and Steinberger (2008), heterogeneity in male density exists across different occupations for various reasons. One possible reason is that some occupations are traditionally male or female dominated and have become “normal” occupation for a particular gender to have. Another reason is the biological differences between men and women favor men in some occupations due to the necessity of physical strength.

Gay men and lesbian women do not readily fit into the heteronormative distribution of men and women in different types of occupations. Gay men may want to work in less male-dominated sectors compared to their heterosexual counterparts. It is possible that gays and lesbians are less likely to follow the social norms with regards to their occupa-
pational choice because they are already non-conformers with respect to their sexuality. This effectively frees them from the social pressure to choose the occupations that are considered to be “normal” for them to take. As their occupational choices differ from their heterosexual counterparts’, gays and lesbians will receive different wages compared to heterosexual men and women.

According to Ellis and Riggle (1995), the occupational choice of gay men and lesbian women is affected not only by the wages they receive, but also by the level of tolerance at the workplace. There is no reason to believe that this would not be true, since it is generally accepted that workers consider the work environment as one of important determinants when they are choosing their job. Hence, gay or lesbian workers may accept lower pay in exchange for a more tolerant workplace. In this way, the occupational sorting can cause reduced wages for both gay men and lesbian women.

2.3 Lifestyle Choices

Another possible explanation for the lesbian wage premium that various authors (Badgett 1995; Blandford 2003) have discussed is women’s choices regarding childbearing. Statistically, lesbian women deviate from the social norm by giving birth to less children. This can result in the lesbian worker’s actual experience aligning with their measured (or potential) experience, whereas heterosexual women who have given birth to a child will have their experience overestimated. This gap in experience can explain the observed wage premium for lesbian women. This theory is well documented in Becker (1991) and two papers from Polachek both published in 1975.

This can be thought of as a form of discrimination. First, it can be that there is reverse discrimination against heterosexual women, if employers take a worker’s sexuality as a signal for a potential fertility rate. Believing that heterosexual women will be more likely to take time off for childbearing, an employer may spend less effort on training and giving opportunities such as promotion to heterosexual women.
Another possibility is that gay or lesbian couples experience sexual orientation-based discrimination in an adoption process (Black, Sanders, and Taylor 2007). If same sex couples are less likely to be granted a child, they will also be less likely to have to take time off to raise a child. At the present, most of work related to raising a child is done by women. This may imply that there will be minimal effect on gay couples. For lesbian couples, however, inability to adopt a child will raise their expected productivity.

2.4 Discrimination

Becker (1971) introduces a concept of “taste based” discrimination, wherein interacting with certain types of population causes disutility for some agents. These agents will require additional benefits in order to interact with the disutility generating groups. In terms of wages, this means that discriminating employers will not hire a worker who is a member of group that they do not like unless the worker is willing to accept wage lower than wage that other workers with the same level of productivity are willing to accept.

Another form of discrimination that researchers have modeled in the past is statistical discrimination. Arrow (1973) and Lundberg and Startz (1983) model discrimination based on an idea that an employer will pay less wages if they believe immutable characteristics such as race or gender are signals for productivity. An employer who believes certain groups have lower levels of productivity on average will decide to hire workers of that particular group at lower wages. As Lundberg and Startz (1983) show, a lack of information about individual characteristics for one group can lead to a statistical discrimination.

Bertrand, Chugh, and Mullainathan (2005) describes an idea of implicit discrimination. In modern societies, a prevalence of outright racism or sexism has decreased. However, even people who subscribe to the idea of gender and race equality can unconsciously display discriminatory behaviors in split second decisions. Hamermesh et al. (2011) show that this type of discrimination can manifest in evaluation of worker’s productivity using
In the sexual orientation wage gap literature, discrimination can be based on all three forms of discrimination discussed in this section. A large part of discrimination is thought to be based on distaste for sexual behavior that deviates from the social norm. This can be manifested into what is generally known as heterosexism or homophobia. It can also be that employers believe that the lifestyle of sexual orientation minorities will cause a drop in productivity. In this case we have statistical discrimination. It can also be that a perpetrator of discrimination is not aware of the adverse effect their actions have on sexual orientation minorities. In these cases, there is an implicit discrimination.

The discriminatory behaviors directed toward the sexual orientation minorities can be further divided into two categories. Direct discrimination refers to any form of discrimination that is directed toward openly gay or lesbian workers. This category of discriminatory behaviors includes harassment, disadvantage in promotion, lower wages, and unfavorable evaluations.

Any discriminatory behaviors occurring at workplace that are not directed at sexual orientation minorities, but can still affect their productivity of the minorities, are indirect discrimination. This type of discrimination can include any behavior at a workplace that can make both open and masked sexual orientation minorities feel uncomfortable or threatened. This type of discrimination may not be directed at an individual worker, but it can still cause a reduced productivity for a worker who does not feel comfortable at work.

Badgett (1995) argues that the direct discrimination is a larger piece of the wage gap puzzle and subsequent researchers who looked at the sexual orientation wage gap seem to agree. This is consistent with Grenier and Rubin (2011), where it is argued that the discrimination occurs via perception. Therefore, it is important to identify sexual orientation disclosure at work in order to provide a clear interpretation of the results regarding discrimination. If both disclosure at work and self-identification of sexual orientation data
are available, the effect of direct discrimination and the effect of indirect discrimination can be measured separately.

3 Empirical Framework

In this section, an overview of the general econometric methods used to analyze the sexual orientation wage gap will be provided and extensions to the general model used in the literature will be discussed.

3.1 The General Model

The econometric method for an analysis of sexual orientation wage gap generally follows the usual OLS framework with a logarithm of wage as the dependent variable and individual characteristics as independent variables.

\[
\log(wage_i) = \alpha + \beta X_i + \gamma M_i + \epsilon_i
\]  

\(X_i\) accounts for the measure of observable individual characteristics that can affect a wage determination, so any effect of these observable characteristics on the wage should be captured by a vector of coefficients, \(\beta\). \(M_i\) is a dummy variable that denotes minority status. If an individual belongs to a group different than the main focus of comparison (or the majority group), then the dummy variable is activated and \(M_i\) takes the value of one. There can be more than one group that we compare with the base group. For example, Blandford (2003) includes an unmarried heterosexual indicator, a masked gay/bisexual indicator, and an openly gay/bisexual indicator separately. Carpenter (2005) categorizes gay/lesbian and bisexual separately. In these cases, we can have multiple types of minorities in the sample that we compare.
3.2 Identification Problem

One problem with the identification is that the disclosure is an endogenous choice. Rational L/G/B workers will choose to disclose if and only if the benefit of disclosure outweighs the cost. The cost of disclosure is the direct discrimination that they will receive after having disclosed. Benefits may be psychological, political, or economic. For a simple example of a benefit from disclosing, consider a case of non-disclosed worker trying to pass as a heterosexual. They must choose conversation topics carefully as to not draw a suspicion. They can also be subject to a great deal of stress and indirect discrimination from the heterosexual coworkers’ remarks. By disclosing, this person can avoid having to spend energy on passing as a heterosexual and shift the additional productivity to work. Furthermore, disclosure can reduce the level of indirect discrimination and create a more inclusive work environment. This will have a positive effect on other sexual orientation minorities at the workplace who are passing as heterosexuals. Finally, the disclosure may extend the non-monetary benefits to the domestic partners.

Consequently, L/G/B workers will face different levels of cost and benefit based on the occupation, which may also depend on the level of education or the region of residence. Therefore, it is likely that the workers who disclose are also a subset of L/G/B population that live in more tolerant regions with higher levels of education. These selection issues imply that the effect of indirect discrimination can enter into the wage gap equation through individual characteristics, thus causing $\gamma$ to be mismeasured. This is not a very big issue if we do not believe indirect discrimination has a large effect, but as stated in the previous paragraph, there are reasons to believe that the indirect effect of discrimination should not be ignored for a complete picture.
3.3 Data

The unique characteristic about the sexual orientation wage gap analysis is that the data on identification of the minority status is not always readily available. Ideally, the discrimination that we want to capture is the effect of the direct discrimination on the wages. A separation of direct and indirect discrimination, however, requires data on the disclosure of sexual orientation at workplace. This data, thus far, has been unavailable to researchers. The best that researchers studying the wage gap can do is to identify sexual orientation using one of following three methods: the data on sexual behavior as a proxy, self-identification of sexual orientation, or disclosure of same gender partnerships from the Census.

3.3.1 Sexual Behavior as a Proxy

Most papers in the literature use this type of data when information on self-identified sexual orientation is not available. In this case, a proxy must be formed to act as an instrument for the unobserved sexual orientation. The method of creating a proxy requires two datasets: The first dataset must contain explicitly stated sexual orientation and the variables on sexual behavior related to the sexual orientation of an individual. The second dataset must contain the labor productivity-related variables as well as sexual behavior-related variables. One of the variables on sexual orientation that appears in both datasets is selected as a proxy for the sexual orientation unobserved in the second dataset. Finally, the researcher analyzes the sexual orientation wage gap from the second dataset using the proxy to approximate the wage gap that can be attributed to sexual orientation.

There is no particularly clear advantage of using this type of data; however, they have become available before other sets of data. Badgett (1995) used the General Social Survey from 1989 to 1991 with a proxy for the sexual orientation data. Other papers such as Blandford (2003), Black et al. (2003) and Carpenter (2005) analyzed the wage gap using GSS data with different proxies. One interesting finding is that the wage gap found us-
ing this type of data remains significant controlling for individual characteristics such as education, experience, and marital status whereas the wage gap mostly disappears after having controlled for individual characteristics in other types of data. This difference persists for another dataset of this type. Carpenter (2007) looks at the National Health and Nutrition Examination Survey data to find that the wage gap persists after controlling for the productivity measures for men. This occurrence will be discussed in a greater detail later in this paper.

There are some disadvantages with using this type of dataset for a sexual orientation wage gap analysis. One disadvantage is that the results are heavily dependent on the proxy used to identify the sexual orientation minorities. Therefore, a better identification method may result in a more accurate analysis. Proxies can be tested to check if they are effective in identifying sexual orientation using the datasets containing both self-identified sexual orientation and sexual behaviors. Nonetheless, the proxies are estimating self-identification on a survey, so we still do not have an effective method to identify the disclosure at workplace.

Two examples of datasets that belong to this category are the GSS and the NHANES. The GSS collects about 1500 samples each year. It includes questions on the recent and past sexual behaviors related to the sexual orientation. NHANES is a face-to-face interview that surveys male subjects for their past sexual behaviors. NHANES III, in particular, contains the data collected between 1988 and 1994 from about 40,000 respondents. However, only 5,731 men are asked questions relevant to sexual orientation.

3.3.2 Self-identified Sexual Orientation

A clear advantage of this type of data over other types is that there is no guesswork involved in figuring out sexual orientation. The identification of an openly gay or lesbian person is very simple and there is almost no possibility of misclassification. Self-identification in a survey does not imply disclosure at work or to family, however. It is
not hard to imagine why a sexual orientation minority individual may disclose their sexual orientation on an anonymous survey but not at their workplace. There is virtually no cost of disclosing one’s true sexual orientation on a survey over the phone, but there can potentially be a substantial cost to disclosure at work.

One such dataset available to the researchers is California Health Interview Survey. The surveys were done via telephone in 2001 and 2003 with 55,428 households and 42,000 participating households in the respective years. While this dataset enjoys a clear advantage in the identification of sexual orientation minorities, there are some disadvantages as well. CHIS mainly suffers from a geographical constraint. Since it is conducted in California to capture a representative sample of the state, the results from CHIS are not representative of the rest of the country given that there exist geographical differences in terms of discrimination against the sexual orientation minorities.

3.3.3 Disclosure of the Same Gender Partnerships

The U.S. Census began to collect the data that can be used for identification of sexual orientation since 1990. Gender of a household head as well as other members of each household is recorded. For members of the household other than the head, the form asks for their relationship with the head of household. The possible responses are Husband/Wife, Unmarried Partner, Housemate, Boarder, Roommate, and Other Non-relative. Therefore, any same gendered unmarried partners can be classified as sexual orientation minorities.

The advantage of Census data is that the sample size is much larger than that of any other datasets available for sexual orientation wage gap analysis. This is a huge improvement over many other datasets where the number of identified sexual orientation minorities is very small. The larger sample size makes the results much more robust and convincing.

There are some issues with using the Census. As it can be intuited from the collection method, identifying non-cohabiting sexual orientation minorities is not possible with
this dataset. Therefore, researchers are restricted to studying a subpopulation containing the people who have self-selected into a cohabiting relationship. There is a potential for a self-selection issue that can be potentially significant. According to Carpenter and Gates (2008), individual characteristics of cohabiting gay couples are considerably different from those of single gay men.

Another issue is a potential misclassification in the Census form. Black et al. (2007) discuss how it is possible for an individual to miscode the gender. Since the share of true sexual orientation minorities is small, even if a small amount of respondents miscode the gender, it will cause substantial problems. In the 1990 Census, the Census Bureau altered the gender of the same-sex married couples. In the 2000 Census, the Census Bureau changed the relationship status from Husband/Wife to Unmarried Partner. According to Black et al. (2007), this implies the misclassification issue is much greater in 2000 census. The 1990 correction can lead to misclassification of gay or lesbian couples and underestimation of the minority. The 2000 correction can lead to misclassification of married heterosexual couples. Since the number of married heterosexual couples is much larger than than the number of gay or lesbian couples, misclassification is a greater concern in the 2000 Census. One method is to rectify this is to exclude any couples with correction on the marriage status. This seems to be the method adopted by Antecol, Jong, and Steinberger (2008).

3.4 Methods of Decomposition

The general OLS framework provides a good interpretation of the factors affecting the wage gap with respect to measuring discrimination. The general regression framework, however, is limited in comparing the effects of different factors. If a comparison between the effect of education and experience is needed, the general OLS framework can provide coefficients for the two factors, but it is not easy to determine which is driving the wage gap. For example, it could be that the wage gap is mainly driven by the higher educational
attainment by sexual orientation minorities rather than the occupational sorting, but it is not possible to assess this through single OLS procedure. A method for decomposing the wage gap into smaller pieces attributable to certain characteristics is needed.

### 3.4.1 Oaxaca-Blinder Decomposition

Fortunately, there are decomposition methods that can be used for this purpose. The simpler of the two is Oaxaca-Blinder decomposition. This method decomposes the wage gap into two parts. The first part is the wage gap attributable to differences in the average of observable characteristics between two groups, which can be further subdivided for different characteristics such as experience or education. In order to utilize the decomposition method, the linear regression must be done for different groups separately. This requires that there are enough samples for both groups in the data.

\[
W^S - W^H = (\bar{Educ}^S - \bar{Educ}^H)\hat{\beta}_1^H + (\bar{Exp}^S - \bar{Exp}^H)\hat{\beta}_2^H + (\hat{\beta}_0^S - \hat{\beta}_0^H) + \bar{Educ}^S (\hat{\beta}_1^S - \hat{\beta}_1^H) + \bar{Exp}^S (\hat{\beta}_2^S - \hat{\beta}_2^H)
\]

(2)

An example of Oaxaca-Blinder decomposition is described in the equation (2). \( S \) and \( H \) denote the two groups. The first term on the right hand side of the equation is the wage gap attributable to differences in the average educational attainment between the two groups. The second term is the wage gap attributable to differences in the average work experience between the two groups. Therefore, the first two terms, in this example, account for the wage gap attributable to differences in observable characteristics. If one group has more education than another group, the effect of the difference in the wage gap will be captured here.

The second row of the equation consists of the wage gap attributable to returns to observable characteristics. This can be interpreted as the wage gap due to unobservable
characteristics. If all productivity measures are considered in the controls, this gap will account for the wage gap due to discrimination.

3.4.2 DiNardo-Fortin-Lemieux Decomposition

A disadvantage of Oaxaca-Blinder decomposition is that the wage gap can only be decomposed at the mean values of variables. If the wage gap is expected to be uniform across different levels of wage, this is not a problem. However, if the wage gap is expected to be dependent on the level of wage, then we are only learning about one particular instance of it. Therefore, a decomposition method for varied levels of wage is required if we suspect a non-uniform distribution of the wage gap across different levels of wage.

DiNardo Fortin and Lemieux decomposition uses a distribution of wage and conditional distributions of independent variables to decompose wage across different levels. Simply put, the decomposition method works in the following way. First, the joint distribution of wages of the group $S$ is separated into a distribution of independent variables and a distribution of wage conditional on independent variables. Then, the distribution of independent variables is divided into a distribution of education conditional on experience and a distribution of experience. In order to find the wage gap attributable to the experience, we replace the distribution of the education of group $S$ conditional on experience with the distribution of the education of group $H$ conditional on experience. This yields the distribution of wage for group $S$ if group $S$ had the distribution of education of group $H$. Therefore, this procedure takes out the wage gap attributable to a difference in an observable characteristic holding other control variables constant.

I use a specification similar to that of Antecol, Jong, and Steinberger (2008):
\[ f(W, X|g = S) = \int \int f(W|\text{Educ}, \text{Exper}, g = S)dF(\text{Educ}|\text{Exper}, g = S)dF(\text{Exper}|g = S) \] (3)

\[ f(W, X^*|g = S) = \int \int f(W|\text{Educ}, \text{Exper}, g = S)dF(\text{Educ}|\text{Exper}, g = H)dF(\text{Exper}|g = S) \] (4)

Equation (3) represents the wage distribution for group \( S \). (4) represents the wage distribution for group \( S \) if it had a distribution of education identical to that of group \( H \). Comparison of the two distributions will reveal the effect of education on the wage differential. By using the distribution of the wage gap instead of wage, the decomposition of the wage gap can be done for a range of wages.

4 Results

The main empirical results from the literature are that there exists a gay wage penalty and a lesbian wage premium. The gay wage penalty has been found in most of the papers discussing the sexual orientation wage gap. The wage penalty is mainly attributed to the marriage premium. The lesbian wage premium is mainly observed in analyses of GSS data, but it has been also documented in analysis of British, Canadian, and Dutch data as well, meaning it is not a specific occurrence for GSS or the United States.

4.1 Blandford (2003)

Blandford (2003) builds upon the seminal paper by Badgett by comparing married heterosexuals with three other groups: unmarried heterosexuals, gay/lesbian/bisexual and masked gay/lesbian/bisexual. Masked gay/lesbian/bisexuals are identified by picking out married (with a heterosexual partner) individuals among the individuals identified
as gay/lesbian/bisexual in the data.

Blandford uses GSS from 1989 to 1996 for this paper. The data contains 5,998 total observations with 139 sexual orientation minorities. Blandford’s proxy for unidentified sexual orientation is a respondent’s sexual behavior within the last twelve months. An individual is identified as a minority if they have not had an exclusively heterosexual relationships for the last twelve months. Masked L/G/B denotes anyone who has had sexual relationships with a same gendered partner who is concurrently married. For the econometric analysis, Blandford uses a standard log-wage OLS model and includes three dummy variables for comparisons against the control group (married heterosexuals). The results are shown in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1) Male Workers</th>
<th>(2) Female Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Digit Occup.</td>
<td>Coeff.</td>
<td>Coeff.</td>
</tr>
<tr>
<td>Intercept</td>
<td>8.30*** (92.1)</td>
<td>8.25*** (85.9)</td>
</tr>
<tr>
<td>Orientation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>−0.15*** (6.1)</td>
<td>0.02 (0.9)</td>
</tr>
<tr>
<td>Masked Gay/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisexual</td>
<td>−0.20 (1.5)</td>
<td>−0.01 (0.0)</td>
</tr>
<tr>
<td>Open Gay/</td>
<td>−0.38*** (5.1)</td>
<td>0.21*** (2.4)</td>
</tr>
<tr>
<td>Bisexual</td>
<td>−0.20 (1.5)</td>
<td>0.01 (0.1)</td>
</tr>
<tr>
<td>Human Capital:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.08*** (14.4)</td>
<td>0.09*** (14.0)</td>
</tr>
<tr>
<td>Experience</td>
<td>0.05*** (15.5)</td>
<td>0.04*** (9.8)</td>
</tr>
<tr>
<td>Squared Potential</td>
<td>0.00*** (9.4)</td>
<td>0.00*** (7.0)</td>
</tr>
<tr>
<td>Experience</td>
<td>0.00*** (9.2)</td>
<td>0.00*** (7.0)</td>
</tr>
<tr>
<td>Race:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>−0.06 (1.5)</td>
<td>0.01 (0.2)</td>
</tr>
<tr>
<td>Other</td>
<td>−0.04 (0.8)</td>
<td>−0.11* (1.8)</td>
</tr>
<tr>
<td>Resides in Large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Area</td>
<td>0.19*** (6.2)</td>
<td>0.15*** (4.6)</td>
</tr>
<tr>
<td>Geographic Region:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>0.12*** (3.7)</td>
<td>0.17*** (4.6)</td>
</tr>
<tr>
<td>Midwest</td>
<td>0.10*** (3.3)</td>
<td>0.06* (1.8)</td>
</tr>
<tr>
<td>West</td>
<td>0.04 (1.3)</td>
<td>0.10*** (2.8)</td>
</tr>
</tbody>
</table>

**Figure 1:** Results from Blandford (2003) wage gap analysis

The wage penalty for L/G/B men is consistent with Badgett’s (1995) results where a wage penalty of about 27 percent has been found. Also, the wage premium for married
men is not surprising. It is, however, interesting to find that there seems to be a persistent wage gap between unmarried heterosexuals and L/G/B men in the sample. Also, although it is not statistically significant, Blandford finds a wage penalty for the masked L/G/B men. This may imply a productivity loss from passing as a heterosexual or it could be that cheating on a spouse requires substantial energy that can otherwise be used for the market production.

No wage premium is found for married women compared to unmarried heterosexual women. This may not be too surprising considering that the two factors that would cause the difference are opposite in direction. While married women may have more experience, married women are also more likely to take time off from work for the childbearing and other household production. There is a significant wage premium for lesbian women; Lesbian women earn around 20 percent higher wages compared to married women.

Blandford tests whether fertility is a cause of this wage premium by including the Heckman correction term that models the likelihood of an individual working full-time. Inclusion of the Heckman correction term has a limited effect on the wage premium. Blandford also included only women without children in the regression. Even in this case, the wage premium for L/G/B women persists. These results, however, must be interpreted cautiously, because the sexuality of a woman can be a source of statistical discrimination by employers as discussed in Section 2.

Although Blandford looks at the occupations of the respondents, there is not too much evidence for occupational sorting driving the result. It could be that more categories of occupation are needed to actually see occupational sorting. Blandford’s contribution in this respect is to show the effect of occupational sorting is uncertain with two-digit categories of occupation. Finally, the wage penalty and the wage premium identified for men and women respectively suggests that the theory of specialization within a family may be valid.
4.2 Antecol, Jong, and Steinberger (2008)

In contrast to other papers in the literature that mainly focus on estimating the effect of discrimination on the wage gap, Antecol, Jong, and Steinberger (2008) decomposes the wage gap into wage gaps attributable to different characteristics with an aim of comparing the effect of occupational sorting with the effect of human capital accumulation via education. Antecol, Jong, And Steinberger (2008) uses both the Oaxaca-Blinder method and the DiNardo-Fortin-Lemieux method for decomposition. The results are similar for both.

The data used in this paper is U.S. Census data from 2000. In order to avoid additional variables in the analysis, the sample is restricted to white men and women. As explained in the section on decomposition, the regression must be done separately for different groups. Antecol, Jong, and Steinberger (2008) separates the sample into three different groups: married heterosexual, cohabiting heterosexual, and cohabiting same-sex. Therefore, the wage gap can be analyzed separately for any two of the three groups. The authors specifically compare the two heterosexual groups with cohabiting same-sex.

The initial analysis does not provide a significant differences in the estimated coefficients between heterosexual men (2 distinct groups) and L/G/B men. Only significant differences are found in the coefficients for region indicators. This result implies that there is discrimination in certain regions where the differences are significant.

For women, the samples have significantly different coefficients on returns to education for the college graduates and post-Bachelors. The returns to experience curve is significantly different as well. The former is a surprising finding. This implies that a stronger discrimination is observed at the occupations requiring higher levels of education. This can potentially imply that the lesbian women with higher levels of education are subject to a greater level of discrimination. It can, however, also imply that educated women are more likely to disclose their sexual orientation at work. The latter may be portraying inconsistent returns to experience for heterosexual women who may take time off
for childrearing. This explanation, however, is unlikely to be correct because the experience curve for the heterosexual women looks closer to the men’s experience curve than the curve for the lesbian women do.

Figure 2: Results from wage analysis for separate groups

The next step is the decomposition of the wage gap. Details on the decomposition method have already been provided and will not be repeated here. The result of the Oaxaca-Blinder decomposition suggests that there is an unobservable characteristic-based
wage penalty for cohabiting same-sex couples compared to married men. For other comparisons, there is small to no evidence of discrimination. This result is consistent with Allegretto and Arthur (2001), a previous paper that analyzed the 1990 Census. In both papers based on Census, the wage penalty for gay couples is observed. This wage penalty is generally attributed to the marriage premium, but this remains unclear as a wage gap analysis for married heterosexual men and the married gay couple is required for a definitive answer.

Table 6. Oaxaca-Blinder Decomposition Results.

<table>
<thead>
<tr>
<th></th>
<th>Panel A: Men</th>
<th>Panel B: Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gay vs. Married</td>
<td>Gay vs. Cohabiting</td>
</tr>
<tr>
<td></td>
<td>Specification 1</td>
<td>Specification 2</td>
</tr>
<tr>
<td>Total Log Hourly Wage Gap</td>
<td>-0.046</td>
<td>-0.046</td>
</tr>
<tr>
<td>Attributable to Differences in Characteristics</td>
<td>0.073</td>
<td>0.078</td>
</tr>
<tr>
<td>Education</td>
<td>0.102</td>
<td>0.085</td>
</tr>
<tr>
<td>Experience</td>
<td>-0.058</td>
<td>-0.059</td>
</tr>
<tr>
<td>Part Time</td>
<td>-0.003</td>
<td>-0.001</td>
</tr>
<tr>
<td>Metropolitan Area</td>
<td>0.024</td>
<td>0.021</td>
</tr>
<tr>
<td>Region</td>
<td>0.012</td>
<td>0.011</td>
</tr>
<tr>
<td>Male Density</td>
<td>-0.025</td>
<td>0.002</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attributable to Differences in Returns to Characteristics</td>
<td>-0.119</td>
<td>-0.125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[\text{Notes: The total log hourly wage gap, which is calculated as the same-sex log hourly wage minus the heterosexual log hourly wage, is decomposed into a portion attributable to differences in average observable characteristics and differences in returns to these characteristics. We further decompose the portion due to differences in average observable characteristics into subcategories to illustrate the relative importance of particular observable characteristics. Within each specification, the heterosexual OLS coefficients from Tables 3 through 5 are used to weight the mean differences in observable characteristics between same-sex and heterosexuals groups. In Panel A (for men) the sample sizes are 814,155 for married, 57,825 for cohabitating, and 5,785 for gay, and in Panel B (for women) the sample sizes are 701,900 for married, 55,872 for cohabitating, and 6,205 for lesbian.}\]

Figure 3: Oaxaca-Blinder decomposition results

A decomposition of the wage gap for observable characteristics suggests that a substantial part of the wage gap can be attributed to education while the effect of occupational sorting is small. The theory on the specialization within families does not seem to
hold here, however, because gay men have significantly higher levels of education compared to heterosexual men even though it is expected that the gay men will specialize less on the market production and more on the household production. Therefore, there is no evidence for the market/household specialization found in this analysis.

![Figure 4: Results from DFL decomposition](image)

The DiNardo-Fortin-Lemieux decomposition produces similar results as Oaxaca-Blinder decomposition. The results are reported in Figure 4. The solid lines represent the wage gap without controls. The dotted lines represent the wage gap with controls. The difference between the two lines can be interpreted as the wage gap attributable to observable characteristics. The difference between the dotted line and the horizontal axis can be interpreted as the wage gap attributable to unobservable characteristics. Results for women are shown on the left and results for men are shown on the right. Lesbians with lower levels of wage are beneficiaries of a wage premium. Gay men with lower levels of wage,
on the other hand, suffer from a wage penalty. These trends are consistent in a sense that the lower wage groups are subject to greater degrees of discrimination for both men and women.

4.3 Carpenter (2005)

Carpenter (2005) uses CHIS data from 2001. This dataset is explained in the section 3. Since CHIS samples Californians, the analysis cannot be generalized to the American population in general.

With this dataset, Carpenter uses the general OLS regression to find virtually no effect of wage differential for gay men and lesbian women. Carpenter does find, however, a wage gap for bisexual men and women. Carpenter argues that individual characteristics such as family background or political leaning may cause the individuals to both identify as bisexuals and receive lower wages. There is no good evidence to support this hypothesis. It can still potentially be that the bisexual men and women are subject to discrimination in California.

Carpenter also changes the regressors to obtain more insights. One consistent finding with other papers in the literature is that excluding the marriage dummy variable causes a wage penalty for gay men. This is consistent with the other papers that find wage penalty for gay men compared to married heterosexual men. This result may suggest that there is a geographical variation in the discrimination. While this has been suggested by numerous papers on the demography of sexual orientation minorities, this is the first paper to analytically show that regional differences might be a factor. Evidences supporting this hypothesis is found in Antecol, Jong, and Steinberger (2008) as previously discussed.

The possibility of temporal variation is also explored. Carpenter looks at GSS data separately based on the years sampled to find that the most recent data has a smaller discrimination based wage gap compared to analyses of the earlier years.
5 Discussion

There are some remaining issues in the sexual orientation wage gap. One of the biggest remaining issues is the lesbian wage premium. Previous attempts to provide an adequate explanation have not been fruitful. Statistical discrimination over potential fertility can be an explanation, but it has not been truly tested yet. Wong and Yip (2014) isolate women’s potential fertility rate based on individual characteristics including sexual orientation to measure the effect of the discrimination in the United Kingdom.

Another issue is the inconsistency in the results of different types of datasets used for the wage gap analysis. Carpenter (2007) discusses this in detail. To briefly summarize the issue, the proxy based datasets tend to provide an evidence for a strong effect of unobserved characteristic on the wage gap. Other datasets, on the other hand, show that the only wage gap remaining after having controlled for the productivity measures is the marriage premium. The occurrence is well documented, but no convincing explanation
for this inconsistency across datasets is provided by the past literature. Perhaps learning more about the efficacy of the proxies used may provide explanations for this discrepancy.

Temporal and geographical differences can provide a method to identify the differences between direct and indirect discrimination. If a panel dataset is available for the wage gap analysis and if the date of disclosure is known, then the direct and indirect discrimination can be easily separated by looking at the wage for the same individual before and after the disclosure occurs. The effect of changing social norms and workplace environments can potentially be measured as well. Temporal and geographical differences can also provide an insight into effectiveness of policy measures aimed at reducing the wage gap. Gates (2009) studies state policy variables and Klawitter (2011) studies local and state policy variables using the 2000 Census. Gates (2009) finds that there are wage premiums for both gay and lesbian couples in states with anti-discrimination policies. Klawitter (2011) finds higher labor supply for gay couples in those same states. He also finds that the local laws are important in determining the effectiveness of the state policies. Martell (2014) studies the GSS data to measure the change in labor supply decisions of gay men in response to introductions of Employment Nondiscrimination Act across the U.S.

Thus far the sexual orientation wage gap literature has exclusively focused on Lesbians, Gays, and Bisexuals. It is questionable whether some sexual orientation minorities such as asexuals would be subject to a non-marriage premium wage gap for a couple of reasons: first, social stigma against asexuality is smaller compared to other sexualities. Second, risk of accidentally displaying asexuality is smaller compared to other sexualities. However, others such as Trans-people are likely to be subject to a large amount of both indirect and direct discrimination. Availability of dataset for identification of trans-people is a problem, but this may be an interesting subset of sexual orientation minority population to look at.

According to Carpenter and Gates (2008), gay and lesbian couples are more likely to be
white, older, and better educated. Since couples-based studies provide a result with lower levels of discrimination, the more disenfranchised subset of sexual orientation minority population is likely to be subject to greater degrees of discrimination. Perhaps a study of individuals with multiple minority statuses can provide an insight into how sexual orientation minorities are treated within racial minority groups.

The literature does not need to be limited to the observed wage gap. The discrimination can prohibit minority workers from obtaining an occupation during a hiring process. If lower match rate for a minority worker is expected, then it is likely that there will also be lower reservation wage for a minority worker. This implies that the wage gap can potentially be explained by looking at employment prospects for minority workers. One paper that looks at this issue via resume study in Germany is Weichselbaumer (2015). Resume studies in other countries may provide interesting regional heterogeneity.

Another big non-wage related issue is a work environment. If gay or lesbian workers are subject to a hostile work environment, then we may expect the workers to have a higher level of productivity in absence of the handicap. Then, even if there is no statistical wage gap, the workers are experiencing a masked wage gap because they are not paid according to their potential productivity. Carpenter (2008) is a good example of a paper that empirically studies worker’s happiness at work as it relates to the economic outcome. Carpenter (2008) finds that lesbian workers in Australia report more harassment related complaints, have more difficulty finding an employment, and generally less happy about their economic outcomes compared to heterosexual women. Further research in the work environment may shed a light on the extent of indirect discrimination.

6 Conclusion

This paper has provided an overview of the theory and empirical studies relating to the sexual orientation wage gap. In summary, there are some consistent results such as the...
marriage premium, but many issues discussed in the sexual orientation wage gap literature remain inconclusive. There is room to improve the literature given a larger amount of data as well as more clever ways to analyze the data. Specifically, more work is needed to analyze why sexual orientation minorities make different human capital accumulation and lifestyle choices than heterosexuals. Theoretical and empirical studies of differences between heterosexual couples and gay/lesbian couples are the most promising next steps in this direction. The compounding effect of race on the sexual orientation wage gap is an essential next step as well.

References


