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# Sexual Orientation, Motherhood and Pay 

The case of the gender pay gap for homo-/bisexual women

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## 2 Abstract

The aim of this thesis is to widen the understanding of the gender pay gap by introducing the factor of sexuality. Same-sex couples have legal rights that are relatively new; how does our understanding of labor division and pay change when more data on queer people emerge? This is achieved by using data from the German Socio-Economic Panel (SOEP) from the year 2017 and making multiple regressions, which are based in the Mincer equation. This allows us to compare this data to already existing research.

### 2.1 Keywords

Labor economics, gender pay gap, motherhood penalty, same-sex couples, Mincer equation.

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## 4 INTRODUCTION

The gender pay gap is one of the many questions labor economist all around the world research. The case has been made for statistical discrimination, different interests, and motherhood penalty, among others. Most studies focus on women that are married/cohabiting with a male partner or are single mothers. Fewer studies have investigated the pay gap in same-sex couples. What is different when there is no assumption that your partner will earn significantly more? What choices do women partnered with women make, when gender is not an issue? I will also investigate the pay gap for gay fathers, compared to their straight counterparts. With a Mincer equation I will map the case of the gender pay gap in Germany in 2017 and also analyze the penalty of being gay, and specifically, a gay woman.

### 4.1 Hypotheses

I have 8 hypotheses of what the data will show:

- Women earn less than men, even when education, experience, residence, area of work, and sexual orientation are accounted for.
- Men benefit more from education and labor market experience than women, in general.
- Homosexuals earn less than straights.
- The difference between gay women and gay men is less than between their straight counterparts.
- Having children in general negatively impacts pay for women; the more one has and the younger they are, the more pay is impacted.
- Women who have children earn less than their childless counterparts.
- Part of the gender pay gap is that mothers earn less
- Gay women who have children do not suffer the same wage penalty as their straight counterparts.


## 5 BACKGROUND AND LITERATURE REVIEW

### 5.1 Women and Pay

This study focuses on two things: the correlation between gender and pay, and the correlation between sexual orientation and pay. What causes the gender pay gap? Gendered factors that have been researched are housework, propensity to take care of children, childcare availability, maternity leave, and other career influencing factors.

### 5.1.1 Women's Careers

Firstly, are there some factors that concern all women? It would seem so. Aisenbrey, Evertsson, and Grunow write that women are less likely to have leading positions in countries with long parental leave available, than they are in countries without. They also find that women's wages are lower in general in countries with longer maternity leave available (2009, pp. 573-575).

### 5.1.1.1 Specialization Within Couples

There is a (quite common) idea that men and women are different on an essentialist basis, that women are interested in nurturing and childrearing, and men in more business-like endeavors. Women staying at home more and working in lesser-paid sectors would then be a consequence of choice and interest. This would then explain a major part of the gender pay gap. (Jacobsen, 2008) As a consequence, this would be true for everybody, but especially in a relationship between a man and a woman, where she likes to take care of the household and he to focus on his career. The more specialized they are, the higher returns on effort they get, which leads to continued specialization within the couple. Aisenbrey, Evertsson, and Grunow propose the idea that less productive women might prioritize child rearing (2009, p. 575). If less productive women prioritize child rearing, it might lead to women who would otherwise have had a slightly lower wage than more efficient colleagues now having no wage. This takes down the average of women's pay.

### 5.1.1.2 Statistical Discrimination

The New Palgrave Dictionary of Economics defines statistical discrimination as "a theory of inequality between demographic groups based on stereotypes that do not arise from prejudice or racial and gender bias" (Moro, 2009). This means that demographic groups are treated differently, but not just because of their differences. For women this usually means that when compared to a man with the same characteristics, he is chosen most of the time. Although this might seem unfair, the reasoning of the employer is that women traditionally have a propensity
to take time of work for child rearing, which makes them a more volatile investment. Even if the woman in question is not planning on having children, all women get treated equally by the likelihood of pregnancy - hence the word statistical discrimination.

### 5.1.2 Motherhood Penalty

What is there to say about women who do have children? There are two choices when having children, if the mother works outside of the home. Either a woman goes back to work, or she stays at home permanently being a homemaker. There is the gray scale of maternity leave, and when a woman takes maternity leave for more than three years, it effectively makes them homemakers (Aisenbrey, Evertsson, and Grunow, 2009, p. 575). Being a homemaker for years significantly reduces pay (Kühhirt \& Ludwig, 2012, p. 195). This means that for women's wages to match men's, getting back into the work force after having had children is crucial.
If maternity leave is available, though, women are more likely to rejoin the workforce. They take longer leave of absence if they do return to work, but most do so to another employer and usually on a part-time basis. The women who stay with the same employer seem to not suffer as many consequences in wage as those who switch employer. (Aisenbrey, Evertsson, and Grunow, 2009, pp. 575-581) Kühhirt \& Ludwig, on the other hand, do not agree. They find that lower motivation to work, destroyed human capital, and change in career to accommodate childcare does not seem to impact wage that much. Changing career to a more mom-friendly one with lower wage only makes a difference if one has more than one child. It is not the case that all housework impacts wages equally. The amount of housework that impacts wages seems to have a threshold value (2012, pp. 194-197). This means that single and/or childless women, who can be more flexible with how and when they complete routine chores are not as impacted, with regards to wages.
It does not matter if mothers continue working or are homemakers, the burden of housework increases with having children. When measured, routine housework such as cooking, vacuuming, and washing dishes, impacts wages more than large fixings (i.e. painting, fixing the car, mowing the lawn), probably because the former is less flexible. (Kühhirt \& Ludwig, 2012, p. 189) Having children, which entails considerable amounts of routine housework, should in theory impact wages.
Even though it might not seem like much at first, staying at home is an expensive choice. The child penalty is cumulative, which means that for each year of being a mother, women lag further and further behind on the wage curve. (Kühhirt \& Ludwig, 2012, p. 196)

### 5.1.3 Fatherhood Premium

Men who become fathers see an increase, both in working hours and hourly wage. (Lundberg \& Rose, 2000). This is commonly known as the "fatherhood premium".

### 5.2 Germany

Germany is one of the largest economies in Europe. They are a country with a singlebreadwinner social state (Aisenbrey, Evertsson, and Grunow, 2009, p. 577). The maternity pay is quite generous. Schooling and careers are available for women, though most women stay at home. Childcare is sparse and maternity leave is long and quite well compensated (SPLASH, 2014).

### 5.2.1 Germany and Childcare

The availability of childcare, to make routine housework more flexible and careers more available, is not very large in Germany. (Kühhirt \& Ludwig, 2012, p. 187) There is public subsidized childcare from the age of 3 , which ends at noon, which leads to many German mothers working part time. (Aisenbrey, Evertsson, and Grunow, 2009, p. 576) This leads to not many mothers working full-time, and even fewer getting a good pay, even if their wage should be equal to their male counterparts.
Germany has long career breaks, which, when accounted for, takes down the child penalty a lot, but in reality means that mothers earn way less than non-mothers (Kühhirt \& Ludwig, 2012, p. 188) Families depend on the father's income, and the mother taking care of the home. $50 \%$ of women are not doing paid work 5 years after a childbirth (Aisenbrey, Evertsson, and Grunow, 2009, p. 581).

### 5.3 Queers

If we are going to look at the way parenthood impacts wages for queer people, we have to define how queer parenthood differs from their straight counterpart.

### 5.3.1 Terms of Sexual Orientation

Before I go any further, please note that sexual orientation is fluid, and gender exists on a spectrum (Jourian, 2015).
For this thesis I will assume that gender is correctly assigned on all the participants and that only respondents who are straight are in the "straight" category. There is always the possibility that people who are not yet "out of the closet" hide in such categories, but it is safe to assume
that in such a safe and anonymous survey as the SOEP, we have maximized the possibility to only have straight people there.
In the original data sets, there were several sexual orientations. I chose to lump all non-straight sexualities into one, to make the sample size bigger. Without this change the representability of my study would have been even smaller. There might not even have been sufficient data for all the variables I wanted to include in my regressions.
I chose to add all non-straight people together, and not add e.g. bisexuals to the group straight. This is based on the presumption that people who are not straight have more in common with each other, the "not normal", than they do with the straights, the "normal".
From this point onward I will use the word straight and heterosexual interchangeably. The other group I will, for simplicity's sake, call gay/homosexual/queer interchangeably. All people in that group are not technically homosexuals, and some of them are not even attracted to their own gender (asexuals i.e.). This is not something I have forgotten, but for the sake of readability, even bisexual, asexual and "choose not to answer" will be called gay as a group. Please note that women who are not straight/female homosexuals/lesbians/female queers will also be used interchangeably.

### 5.3.2 Estimating Sexual Orientation

Firstly, what does it even mean to be queer? Who is queer? Sexual orientation is hard to estimate for different reasons. Noack, Seierstad, \& Weedon-Fekjær claim that $4 \%$ is a conservative, but provable number (2005, p. 94), but who is queer depends on who defines what is considered queer and whether sexual orientation is static at all.
Considering people who have been married to a person of another gender, and then married someone of their own, are they bisexual? Whether earlier marriage was because of suppression or change in sexual orientation is not clear (Noack, Seierstad, \& Weedon-Fekjær, 2005, p. 105). There is also the possibility that a person may have been attracted to multiple genders but has been married to someone of another gender than their own.
How this study will use language around sexual orientation, and who counts as what will be discussed more in detail in the description of the data.

### 5.3.3 Studying Sexual Orientation

Since, as far as we know, there are only $4 \%$ of any given population that is queer, studying how queer people and queer relationships differ from straight ones is difficult. There is a theme of small samples, which make studies regarding same gendered couples hard to extrapolate to a wider scale. Also, the fact that much of the data is self-reported, e.g. from queer groups or
readers of a particular paper, makes the generalization of our results questionable. There is not much data to be had, since the decriminalization of homosexuality is fairly recent in, for example, Norway, and many have not been in same sex relationships of longer duration. (Noack, Seierstad, \& Weedon-Fekjær, 2005, p. 93)

### 5.3.4 Biological Children

There are forces that try to stop gay parenting (Goldberg, 2010, p. 53). It is usually hard for same-sex couples to get biological children. Registered partnerships (a form of partnership available only to same-sex couples, in Nordic countries, before marriage equality was achieved) or same-sex marriages might differ from already existing marriages for different sexed people in one or several of these ways: adoption and insemination (Noack, Seierstad, \& WeedonFekjær, 2005, p. 92).
Both of these options take time and money, especially compared to conceiving biologically. Only $.9 \%$ of the people surveyed had biological children while in a registered partnership. (Noack, Seierstad, \& Weedon-Fekjær, 2005, p. 98). One possible reason is the cost, especially in the USA, where governmental support of gay parenting is particularly low. (Goldberg, 2010, p. 54)

Other factors that impact the decision to have children are societal factors. Goldberg writes that both internalized homophobia and legal insecurities for the non-biological parent, make people hesitant to try for children. (Goldberg, 2010, pp. 51-52) Such legal insecurities might be the right for the non-biological parent, possibility to access care, and so forth.
Most people in same sex relations who have biological children have them from previous different sex relations. When already existing children live with their parents in same sex household it is usually with their mother. US Census data indicate that having children living in the household is fairly common for female couples, but rare for male couples; $22 \%$ and $5 \%$ respectively (Noack, Seierstad, \& Weedon-Fekjær, 2005 pp. 95-97).
This leads us to the conclusion that queer people who want to get children and queer people who have children are not groups that are wholly overlapping. Noack, Seierstad, \& WeedonFekjær found that the proportions that wanted children and the proportion that gets children are significantly different. (2005, p. 105).

### 5.3.5 Gendering of Tasks in Same-Sex Households

The gendering of tasks and work outside of the household is often an explaining factor when it comes to the gender pay gap. But if both partners have the same gender, there are no preexisting gender roles to determine who is the bread winner and who is the home make. Noack, Seierstad,
\& Weedon-Fekjær find that there is no evidence of gendering within registered partnerships (2005, p. 105).
When it comes to double women partnership there is trends that are not found in heterosexual relationships. Double mothers may take consecutive parental leave (Goldberg, 2010, p. 77). This leads to a sharing of tasks where both mothers take turns. The birth mother stays at home first after the delivery to recover, and when the child is old enough, the other mother takes over of being a homemaker.
Both mothers tend to reduce paid work when one is pregnant. Even though the birthmother needs the first time to rest and recover, non-birth mothers tend to take extra time to bond with the child (Goldberg, 2010, p. 76).

### 5.4 OTHER FACTORS

There are some factors that do not fit neatly with either gender, Germany, or sexual orientation. These factors will be accounted for in the following section.

### 5.4.1 Returns to Schooling

Returns to schooling is a term commonly used in labor economics to describe the effect each extra year of schooling has on wages, on the margin. (Card, 2008)

### 5.4.2 Potential Important Factors

This is only a bachelor's thesis, and there is only so much time and resources available to design a detailed model. Factors that were considered, but eventually cut, are: age, marriage status, unemployment status, migration background, father's education, father's pay, mother's education, mother's pay, household income, presence of supportive parents, childcare availability, and ideas about women's place in the household. All of these are recorded in the SOEP and are available to use in addition to the data that has been considered in this thesis.

## 6 DESCRIPTION OF THE DATA

In this section I will describe my source material: where it comes from, how it's structured, and which variables I will use in my regressions.

### 6.1 About SOEP

The basis of my thesis is data from the socio-economic panel in Germany, SOEP. It is a survey that has been done on a large scale in Germany since 1985, and added East Germany 1990, after the unification of the country (SOEP, 2019). The benefit of using this data is its scope and thoroughness, as well as the fact that this survey has been collecting data for a long time, consistently.
The data comes in several datasets, some of which are on a household basis, and some on an individual basis. To get the right combination of variables needed for my thesis, I started by selecting my variables in the original dataset, making sure that I was keeping the never changing ID variables that keep track of subjects over time and various data sets.. This way I could ensure that all the data points were applied to the right individual(s). The survey administrators added a presumed sexual orientation in 2002, and since 2016 they have a question on sexual orientation, so that the interviewee might define that for themselves (SOEP, 2018.) Given that SOEP is a longitudinal source of data the variable is still presumed heterosexual/presumed homo-/bisexual.

### 6.2 About the Data Set

In the beginning the dataset included all data from 1985-2017 unedited. I narrowed it down to my choice in variables, and only observations that were from 2017, my year of observation. Starting with this data set I also excluded all non-private household interviewees. If the interviewee was a child, youth, without information, has moved abroad, or is deceased I also excluded them from my data, leaving me with the number of observations at 9,981.

### 6.3 About the Variables

This section describes my final variables, why I chose them, and what they describe.
My variables which are the most important are the gender of the person, the sexual orientation of the person, and in the later stages, if they have children, how many, and how old.

Variable name: Definition:

| Female | Gender of the respondent. 0 is male 1 is female |
| :---: | :---: |
| Homosexual | Sexual orientation. 0 is heterosexual, 1 is everybody else |
| FemaleHomosexual | 1 is if the subject is both female and non-straight, 0 is everybody else |
| YearsOfSchooling | Number of years the respondent has gone to school |
| Experience | Number of years of labor market experience |
| ExpSq | Number of years of labor market experience, squared |
| Rural | Area of residence. 0 is urban, 1 is rural |
| AreaOfWork | $0=$ laborer, $1=$ clerical, $2=$ managerial, $3=$ self-employed |
| HasKids | $0=$ does not have children, $1=$ has children |
| NumberOfKids | Number of children the respondent has |
| AgeOfKids | Age of the oldest child in the household |
| (Table 1) |  |

### 6.3.1 Personal Variables

I created a dummy variable that had the value 1 if the person identified as female, and 0 otherwise. That means that the coefficient means that being a woman impacts the wage with the coefficient in percent.

### 6.3.1.1 About Sexual Orientation

The variable "sexual orientation" is a dummy, where the 0 consists of presumed heterosexuals and the 1 consist of presumed bi-/homosexuals.
I also created the dummy femaleHomosexual where women who also are (presumably) anything but straight 1 and everybody else is a 0 . This is to control for the intersection of being a woman and being queer.
Kühhirt \& Ludwig write that having children, the number of children one has, as well as the age of one's children impact wage - and in different ways (2012). To separate these effects, I chose to have them as three separate variables, kidAge, numberOfKids and kidAge.

### 6.3.2 Professional Variables

Experience and schooling are measured in years. Working hours are measured in hours/week, and the income in euros/month. To get the hourly wage we multiply the working hours by number of months in a year and the wage by the number of weeks in a year. Then I divided the wage by the number of hours worked, which gave me their hourly wage.

### 6.3.3 The Weighting Variable

A weighting variable is used to trace which groups who are overrepresented in a survey to make their result represent Table. (Hong, 2008) Homosexuals, for example, are not a large group of people in any society, with our estimation being $4 \%$. To make the sample representative of the population as a whole there is a weighting variable to reverse the results back to the weighting of the population at whole. There is a weighting variable included in all the datasets. I will in this paper only make regressions without weighting variables, since including them would be outside the scope of this thesis.

## 7 Empirical Model

With my data I will do a cross sectional analysis. This, I will do twice: one general, and one which accounts for the impact of kids on pay. Each round of regressions will take six forms. First for the whole population, then men/women, queers/straights, and lastly lesbians.

### 7.1 The Mincer Equation

$$
\ln w=f(s, x)=\ln w_{0}+\rho s+\beta_{1} x+\beta_{2} x^{2}
$$

This is the base Mincer equation. The coefficients are $\rho, \beta_{1}$ and $\beta_{2}$. The variable s is schooling, and the variable $x$ is experience. Since wage is logarithmic it means that the coefficients mean the percental change in wage for each year of change in our variables. We have $x^{2}$ as a variable to measure how experience influences wage in comparison to how much experience a person has. (Borjas, 2000)

### 7.2 REGRESSIONS

I aim to check for gender and sexual orientation differences in pay first, without accounting for children. This is to have as large sample size as possible. There is also the possibility to check for differences in return to schooling when comparing my regressions with and without children accounted for.

My dependent variable will always be the logarithmic wage, hourly, which I describe in detail in chapter 6 . This means that each $\beta$-coefficient represents the percental change in wage for each year of schooling and workplace experience. For our dummies, the coefficient represents the percentage difference between our reference group and the selected group.
All regressions will have the explaining variables of experience, experience squared, years of schooling, area of work and area of residence.
Some regressions will only be done on a part of the population. These will be marked with "if variable name $=$ ". If this is specified, it signifies that only the subgroup of the variable will be considered in the regression.

### 7.2.1.1 Baseline

First, I do a baseline regression to have a control of sorts where I check, in addition to aforementioned parameters, gender, sexual orientation and lesbianism.

$$
\begin{aligned}
\text { lnWage }_{i, h} & =\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { homosexual }_{i}+\beta_{3} \text { femaleHomosexual }_{i}+\beta_{4} \text { yearsOfSchooling }_{i} \\
& +\beta_{5} \text { experience }_{i}+\beta_{6} \text { experience }_{i}^{2}+\beta_{7} \text { rural }_{h}+\beta_{8} \text { areaOfWork }_{i}+\varepsilon_{i, h}
\end{aligned}
$$

I have added the subscript $i$ to all variables that are measured on an individual basis, and $h$ where the data is measured on a household basis. $\beta_{1}$ is the percental change in wage for being a woman, $\beta_{2}$ the percental change for being non-straight, $\beta_{3}$ the percental change for being both a woman and not straight. $\beta_{4}$ is how much each year of schooling contributes to pay, $\beta_{5}$ how much each year of experience contributes, $\beta_{6}$ explains the $\beta_{7}$ is the percental change for living in a rural area and $\beta_{8}$ is the percental change in wage for the manner of work one has. Since our reference variable is laborer the comparison is always how much more a clerk, manager or selfemployed earns compared to a laborer.
The results of this regression can be found in the first column of Table 2.

### 7.2.1.2 Gender

These following equations are the same, with the exception that they are only for one gender at a time. This means that the variable female and femaleHomosexual are redundant, and hence removed from the equations.

### 7.2.1.2.1 Male

This I do to check for our education and experience coefficients for men.

$$
\begin{aligned}
& \operatorname{lnWage}_{i, h}= \alpha+\beta_{1} \text { homosexual }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
&+\beta_{6} \text { areaOfWork }_{i}+\varepsilon_{i, h} \quad \\
& \quad \text { if } \text { female }=0
\end{aligned}
$$

The results of this regression can be found in the second column of Table 2.

### 7.2.1.2.2 Female

This I do to check for our education and experience coefficients for women.

$$
\begin{aligned}
\operatorname{lnWage}_{i, h}= & \alpha+\beta_{1} \text { homosexual }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
& +\beta_{6} \text { areaOfWork }_{i}+\varepsilon_{i, h} \\
& \text { if } \text { female }=1
\end{aligned}
$$

The results of this regression can be found in the third column of Table 2 .

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### 7.2.1.3 Sexual Orientation

For sexual orientation we also start in the base regression, but instead of removing female, we remove sexual orientation and femaleHomosexual.

### 7.2.1.3.1 Heterosexuals

This I do to check for the gender pay gap for straights.

$$
\begin{aligned}
& \operatorname{lnWage}_{i, h}=\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
&+\beta_{6} \text { areaOfWork }_{i}+\varepsilon_{i, h} \quad \\
& \quad \text { if sexuality }=0
\end{aligned}
$$

The results of this regression can be found in the fourth column of Table 2 .

### 7.2.1.3.2 Homosexuals

This I do to check for the gender pay gap for gays.

$$
\begin{aligned}
\text { lnWage }_{i, h} & =\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
& +\beta_{6} \text { areaOfWork }_{i}+\varepsilon_{i, h} \quad \\
& \quad \text { if sexuality }=1
\end{aligned}
$$

The results of this regression can be found in the fifth column of Table 2.

### 7.2.2 Model 2: Adding Children

To capture the impact having children has on pay, I do the same operation again as in 7.2.1, but adding the variables havingKids, numberofKids, and kidAge. All of these are measured on a household basis, which means that children only count if they live within the same household as the surveyed person.

### 7.2.2.1 Baseline with Kids

With this regression we will add the coefficients for children, which are necessary to determine how pay is impacted when one has children. Doing so also encompasses more variables. Adding these variables might explain the gender/sexual orientation pay gap even better.

$$
\begin{gathered}
\text { lnWage }_{i, h}=\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { homosexual }_{i}+\beta_{3} \text { femaleHomosexual }_{i}+\beta_{4} \text { yearsofSchooling }{ }_{i}+ \\
\beta_{5} \text { experience }_{i}+\beta_{6} \text { experience }_{i}^{2}+\beta_{7} \text { rural }_{h}+\beta_{8} \text { areaOfWork }_{i}+\beta_{9} \text { havingKids }_{h}+\beta_{10} \text { numberOfKids }_{h}+ \\
\beta_{11} \text { kidAge }_{h}+\varepsilon_{i, h}
\end{gathered}
$$

The new coefficients in this regression are $\beta_{9}, \beta_{10}$, and $\beta_{11} . \beta_{9}$ is the effect just having children has on pay, $\beta_{10}$ is how much each additional child has on pay, and $\beta_{11}$ is how the age of one's oldest child impacts pay.
The results of this regression can be found in the first column of Table 3.

### 7.2.2.2 Gender with Kids

This is the same as 7.2.1.2, but with our added variable for children.

### 7.2.2.2.1 Men with Kids

This we do to capture the "fatherhood premium"

$$
\begin{aligned}
& \text { lnWage }_{i, h}= \alpha+\beta_{1} \text { homosexual }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
&+\beta_{6} \text { areaOfWork }_{i}+\beta_{7} \text { havingKids }_{h}+\beta_{8} \text { numberOfKids }_{h}+\beta_{9} \text { kidAge }_{h}+\varepsilon_{i, h} \\
& \text { if } \text { female }=0
\end{aligned}
$$

The results of this regression can be found in the second column of Table 3.

### 7.2.2.2.2 Women with Kids

This we do to capture the "motherhood penalty".

$$
\left.\begin{array}{c}
\text { lnWage }_{i, h}= \\
\text { } \alpha+\beta_{1} \text { homosexual }_{i}+\beta_{2} \text { yearsOfSchooling } \\
i
\end{array}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h}\right)
$$

The results of this regression can be found in the third column of Table 3.

### 7.2.2.3 Sexual Orientation with Kids

This is exactly the same as 7.2.1.3, but with our variables for children added.

### 7.2.2.3.1 Heterosexuals with Kids

This I do to check for the gender pay gap for straights, when kids are accounted for.

$$
\begin{gathered}
\text { lnWage }_{i, h}=\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
+\beta_{6} \text { areaOfWork }_{i}+\beta_{7} \text { havingKids }_{h}+\beta_{8} \text { numberOfKids }_{h}+\beta_{9} \text { kidAge }_{h}+\varepsilon_{i, h} \\
\text { if sexuality }=0
\end{gathered}
$$

The results of this regression can be found in the fourth column of Table 3.

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### 7.2.2.3.2 Homosexuals with Kids

Here we can, like in 7.2.1.3.2, see how the gender pay gap is expressed when we only have people of the same sexual orientation, but now with coefficients for children added.

$$
\begin{aligned}
& \text { lnWage }_{i, h}=\alpha+\beta_{1} \text { female }_{i}+\beta_{2} \text { yearsOfSchooling }_{i}+\beta_{3} \text { experience }_{i}+\beta_{4} \text { experience }_{i}^{2}+\beta_{5} \text { rural }_{h} \\
&+\beta_{6} \text { areaOfWork }_{i}+\beta_{7} \text { havingKids }_{h}+\beta_{8} \text { numberOfKids }_{h}+\beta_{9} \text { kidAge }_{h}+\varepsilon_{i, h} \\
& \text { if sexuality }=1
\end{aligned}
$$

The results of this regression can be found in the fifth column of Table 3.

### 7.2.2.3.2.1 Lesbians with Kids

Since parenting might differ between gay men and lesbians, and, as Noack, Seierstad, \& Weedon-Fekjær stated, female couples are more likely to have children living with them, separating lesbians from the queer population as a whole is highly relevant (2005). On top of this, highlighting the effect children have on pay for lesbians is also highly relevant.

Here we can see the motherhood penalty for lesbians:

$$
\begin{gathered}
\operatorname{lnWage}_{i, h}=\alpha+\beta_{1} \text { yearsOfSchooling }_{i}+\beta_{2} \text { experience }_{i}+\beta_{3} \text { experience }_{i}^{2}+\beta_{4} \text { rural }_{h}+\beta_{5} \text { areaOfWork }_{i} \\
+\beta_{6} \text { havingKids }_{h}+\beta_{7} \text { numberOfKids } \\
h
\end{gathered}+\beta_{8} \text { kidAge }_{h},+\varepsilon_{i, h} .
$$

The results of this regression can be found in the sixth column of Table 3.
In the regressions above, we have no gender variable and no sexual orientation variable, since all our subjects have the same gender and same sexual orientation.

## 8 Results

Our first regression is the baseline from which we derive all other comparisons. First thing to notice is that most effects are significant at the 1 percent level. Exceptions are female homosexuals in our main sample (significant at the 5 percent level), homosexuals in our female sample, and women in our homosexual sample (both not significant at all). It is still interesting to look at the data, though, since it is the best we have at the time of writing.

### 8.1.1 Gender and Pay

Our coefficient female, which is a dummy variable, describes the unexplained wage gap between men and women in our sample. For the population as a whole (see Table 2, column 1), this lands at $15 \%$, which it also does for the straight part (see Table 2, column 5).

### 8.1.2 Gender, Experience, Schooling, and Pay

Each year of schooling gives (on average) 6\% higher pay, and each year of experience $3 \%$ (see Table 2). If we divide the population into subgroups, we can see how it differs between our different focus identities. Returns to schooling are equal across the board at $6 \%$ (see Table 2). Returns to experience are the same as for the population as a whole for gays and for straights $(3 \%)$, whereas men get a significantly higher return to experience, at $5 \%$, compared to women's 2\% (see Table 2).
Each additional year of schooling is worth 7\%, when children are accounted for (see Table 3, column 1). If we look at only women it's $6 \%$, for queers it's $5 \%$, and for lesbians $3 \%$. Experience, on the other hand is at $2 \%$, for women as a whole. The difference here is that when we only look at women/queers/lesbians, they all have a return to schooling at $4 \%$ (see Table 3). This is counterintuitive; one would expect that both experience and schooling should benefit the employee in the same way. This means, when we account for kids, education pays, but experience does not. The reason why experience is more beneficial for women and queers might be because they are not expected to participate as much in the labor market. Experience, therefore, becomes more valuable to them, whereas men, especially straight ones have a quite linear progression of pay. It signifies that schooling and experience impact wages more equally than the other factors. Hence, there are more high earning women than there are high earning people that have little to no schooling.

## Table 2

Comparison of Wage
Regression

|  | $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | Whole | Only men | Only <br> women | Non- <br> straights | Straights |
| Vample |  |  |  |  |  |
| VARIABLES | lnWage | lnWage | lnWage | lnWage | lnWage |
| female | $-0.15^{* * *}$ |  |  | -0.06 | $-.15^{* * *}$ |
|  | $(0.01)$ |  | $(0.04)$ | $(0.01)$ |  |
| sexual orientation | $-0.11^{* * *}$ | $-0.11^{* * *}$ | -0.03 |  |  |
|  | $(0.02)$ | $(0.02)$ | $(0.02)$ |  |  |
| femaleHomosexual | $0.07^{* *}$ |  |  |  |  |
|  | $(0.03)$ |  |  |  |  |
| yearsOfSchooling | $0.06^{* * *}$ | $0.06^{* * *}$ | $0.06^{* * *}$ | $0.06^{* * *}$ | $0.06^{* * *}$ |
|  | $(0.00)$ | $(0.00)$ | $(0.00)$ | $(0.01)$ | $(0.00)$ |
| yearsOfExperience | $0.03^{* * *}$ | $0.05^{* * *}$ | $0.02^{* * *}$ | $0.03^{* * *}$ | $0.03^{* * *}$ |
|  | $(0.00)$ | $(0.00)$ | $(0.00)$ | $(0.00)$ | $(0.00)$ |
| Constant | $63^{* * *}$ | $51^{* * *}$ | $50^{* * *}$ | $66^{* * *}$ | $61^{* * *}$ |
|  | $(0.03)$ | $(0.04)$ | $(0.04)$ | $(0.10)$ | $(0.03)$ |
| Observations | 9,981 | 4,715 | 5,266 | 954 | 9,027 |
| R-squared | 0.35 | 0.39 | 0.28 | 0.27 | 0.35 |

Standard errors in parentheses
${ }^{* * *} \mathrm{p}<0.01,{ }^{* *} \mathrm{p}<0.05, * \mathrm{p}<0.1$

### 8.2 Sexuality and Pay

This part looks at our sexuality related coefficients. How does one's sexuality impact pay?

### 8.2.1 Gender, Sexuality, and Pay

When we look at our non-straight participants (see Table 2, column 4), though, the difference in pay between gay men and lesbians is only $6 \%$. Non-straight people earn $11 \%$ less, but if we add the coefficient for female queers, it is a $7 \%$ positive. This means that if we were to add the coefficients for women ( $-15 \%$ ) and queers ( $-11 \%$ ) it would seem like women queers earn $26 \%$ less than straight men, all else equal. However, this is not the case: we also have to add our femaleHomosexual dummy (7\%). Queer women "only" earn $19 \%$ less than their male straight counterparts. For homosexuals it is $-19 \%$, but still the gap is larger when children are accounted for. It is quite a difference from the population without kids at $-15 \%$.

### 8.3 Children and Pay

Table 3 is with the added factor of children in a household. Much of women's lower wages occur because children need care, daily and inflexibly. To see what the motherhood penalty is, as well as what the gay parenthood penalty is, we need to establish a baseline how children affect pay.
When children are accounted for women get even less paid with a beta of $-22 \%$ (see Table 3, column 3). This is counter to what our hypothesis would lead us to believe, which is that when children are accounted for, women's and men's pay were expected to be closer. Since our child coefficients are so surprising, the question rises if this is a case of the fatherhood premium. To check for that I ran a regression separately for men and women, to see if children affect their pay differently.
The big surprise in the data comes from our beta coefficients for children. Research shows that the inflexible and straining work of caring for children usually result in a drop of pay, especially for women. Our hypothesis supports this. However, according to Table 3, just the act of having kids gives an $26 \%$, raise. Men get more of a raise, at $27 \%$, than women ( $22 \%$ ), but straights get $31 \%$ extra on average for having kids.

If we look at the population as a whole, having extra kids is neither beneficial nor detrimental, at $0 \%$. Men get $2 \%$ less for each extra kid, whereas women get $2 \%$ more (see Table 3).
Having additional kids might be detrimental to fathers' pay because of the extra work entailed with having more than one child, due to the theory that just being a father is what gives men their advantage in pay. In other words, a father's first child is what impacts his pay the most;
subsequent children do not affect his pay as much. This lines up neatly with the theory of the fatherhood premium.
The age of children does not result in a meaningful difference in pay (at least not in the first years of parenthood), with the low positive impact of $1 \%$ per year (see Table 3). However, if we consider the cumulative effect of this impact, it adds up over time; having a child of 14 years will mean a positive difference in pay of $14 \%$ pay compared to someone with a newborn. The only group where this is not true is for women, where the impact of the age of the kid is $0 \%$. This might not be entirely accurate, as this impact might be a positive value very close to $0 \%$ that has been rounded down to $0 \%$. As such, it will accumulate over time and may result in a value large enough to be considered significant. Despite this, it will most likely still be small enough to be dwarfed by other factors.

### 8.3.1 Women, Children, and Pay

The hypothesis that Women who have children earn less than their childless counterparts is not supported by our data. Having children on average boosted women's pay by $22 \%$ (see Table 3, column 3). This was unexpected. However, one possible hypothesis, which could be researched further, is this: only women who have a high earnings potential keep working after having had children. If women without income were included in our regressions, what would that show? Do less productive women have a propensity for child rearing? Or is the fact that they go back to work after having children an indicator of having personality traits that employers value? There are many possible explanations, but it still stands, that for the scope of this thesis, there is no wage penalty to motherhood, quite the opposite.

### 8.3.1.1 Lesbians, Children, and Pay

Gays lose money on parenthood, suffering a wage decrease of $5 \%$; lesbians get even more of a decrease, at $12 \%$ (see Table 3). The reason for this could be one of two causes: statistical discrimination or voluntarily focusing less on work. Since gays who want children must make the extra effort, it is safe to assume that gays with children prioritize having children above working. If a person works less, it's reasonable to assume that their income increase will be smaller. The fast that gays with kids within our population earn less might also be caused by statistical discrimination. If we assume that it is more common for gay parents to prioritize family and homemaking over their careers, then employers might take that into consideration and not see gay parents as as good investments for their firm.

If we look at how having more than one child impacts straight vs gay people, we see that having more than one child is slightly negative for straight parents, who get $1 \%$ less on
average. But the big surprise is gays and lesbians: for both these groups, each subsequent child gives $5 \%$ increase in wage (see Table 3). But considering that having children is a viable option primarily for gays who can afford the adoption/insemination process, the correlation might go in the other direction as well: having more children, despite not being able to conceive without assistance, might be linked to already having a higher wage.
When children are accounted for, sexual orientation impacts pay at a lesser rate: $4 \%$ (see Table 3 , column 1). Men have a sexual orientation penalty that is lower, at $6 \%$, whereas women have a slightly higher sexual orientation penalty, at $5 \%$. Being a lesbian now has a negative coefficient, at $-3 \%$. This means that when children are accounted for, lesbians earn $29 \%$ less than straight men. The indicates that the "bonus" we saw in the positive coefficient in Table 2, column 1 is tied to having children.

## Table 3

Wage Impact of Children

|  | (1) | (2) | (3) | (4) | (5) | (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VARIABLES | Whole sample lnWage | Only men lnWage | Only <br> women <br> lnWage | Straights <br> only <br> lnWage | Queers <br> only <br> lnWage | Lesbians only lnWage |
| female | $\begin{aligned} & \hline-.22 * * * \\ & (0.03) \end{aligned}$ |  |  | $\begin{aligned} & \hline-.22^{* * *} \\ & (0.03) \end{aligned}$ | $\begin{aligned} & \hline-0.19 \\ & (0.12) \end{aligned}$ |  |
| sexual orientation | $\begin{aligned} & -0.04 \\ & (0.08) \end{aligned}$ | $\begin{aligned} & -0.06 \\ & (0.05) \end{aligned}$ | $\begin{aligned} & -0.05 \\ & (0.07) \end{aligned}$ |  |  |  |
| femaleHomosexual | $\begin{aligned} & -0.03 \\ & (0.09) \end{aligned}$ |  |  |  |  |  |
| yearsOfSchooling | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.07 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.06^{* * *} \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.05 * * \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.03 \\ & (0.02) \end{aligned}$ |
| yearsOfExperience | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.02 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.04 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.04^{* *} \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.04 \\ & (0.03) \end{aligned}$ |
| havingKids | $\begin{aligned} & 0.26 * * \\ & (0.10) \end{aligned}$ | $\begin{aligned} & 0.27^{*} \\ & (0.14) \end{aligned}$ | $\begin{aligned} & 0.22^{*} \\ & (0.13) \end{aligned}$ | $\begin{aligned} & 0.31^{* * *} \\ & (0.11) \end{aligned}$ | $\begin{aligned} & -0.05 \\ & (0.30) \end{aligned}$ | $\begin{aligned} & -0.12 \\ & (0.40) \end{aligned}$ |
| numberofKids | $\begin{aligned} & -0.00 \\ & (0.01) \end{aligned}$ | $\begin{aligned} & -0.02 \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.02 \\ & (0.02) \end{aligned}$ | $\begin{aligned} & -0.01 \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.05 \\ & (0.04) \end{aligned}$ | $\begin{aligned} & 0.05 \\ & (0.07) \end{aligned}$ |
| kidAge | $\begin{aligned} & 0.01^{* * *} \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.01^{* * *} \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.00 \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.01^{* *} \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.01 \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.01 \\ & (0.02) \end{aligned}$ |
| Constant | $\begin{aligned} & 38^{* * *} \\ & (0.13) \end{aligned}$ | $\begin{aligned} & 09 * * * \\ & (0.17) \end{aligned}$ | $\begin{gathered} 38^{* * *} \\ (0.18) \end{gathered}$ | $\begin{gathered} 33 * * * \\ (0.14) \end{gathered}$ | $\begin{aligned} & 71 * * * \\ & (0.39) \end{aligned}$ | $\begin{gathered} 77 * * * \\ (0.49) \end{gathered}$ |
| Observations | 1,799 | 1,265 | 534 | 1,665 | 134 | 98 |
| R -squared | 0.39 | 0.33 | 0.42 | 0.39 | 0.31 | 0.21 |

Standard errors in parentheses

$$
* * * \mathrm{p}<0.01, * * \mathrm{p}<0.05, * \mathrm{p}<0.1
$$

### 8.4 Descriptive Statistics

If we look at our $\mathrm{R}^{2}$ for Table 2 we see that the population as a whole has an $\mathrm{R}^{2}$ at .35 . This means that approximately $35 \%$ of the difference in wage is explained by our variables. Men come in at .39 , women at .28 , gays at .27 and straights at .35 . This means that men's and straights' wages are more impacted by the factors of the first model (the model that did not take children into account) than women's and queers'.
When comparing the values of $\mathrm{R}^{2}$ of Table 2 and Table 3, we see that they do not all increase; some decrease. The groups with lower $\mathrm{R}^{2}$ values in Table 3 than in Table 2, aka the groups for which children do not impact wages as much, are men. This lines up well with previous research, which states that men are not as involved in the parts of child rearing that impact long term pay, staying at home, and daily strenuous tasks. Our biggest change is for women: $\mathrm{R}^{2}$ is 14 percentage points more in Table 3 than in Table 2. This means that our model with children explains $42 \%$ of what impacts women's pay, or $50 \%$ more than our model without children. This once again corroborates with existing research. Women are usually the ones to not stay late, change work or do other career sacrifices when children are introduced to a household.
Our other groups do not have as surprising changes in $R^{2}$ between Table 2 and Table 3. The population as a whole goes from .35 to .39 and so does straights. This has been a theme throughout: since straights are a considerably larger part of the sample population than gays, removing gays from the sample doesn't usually make that big of an impact. Gays go from . 27 to .31 . Lesbians have a much lower $R^{2}$ than any other sub-group. This is probably since it is the smallest sub-group of those that have been investigated in this essay. The closer to infinity our sample size comes, the better the fit of the regression. I look forward to more data being available to research the pay of lesbians in the future; this thesis is only scratching the surface. We can therefore draw the state that having children does impact pay, just not for men in general.

## 9 DISCUSSION

What do these results mean? Clearly there is something to be said about there being a gender pay gap in Germany. In all of our data, women earned significantly less than men, even when education, experience, sector, residential area and sexual orientation was accounted for. The gap between men and women was even larger when we accounted for children. There was a premium for fathers, but mothers did not seem to suffer a penalty. Having children in general, especially for straight people, was a clear benefit, where wage is considered.

There seemed to be some kind of sexual orientation related pay gap, with gay people earning significantly less, all things accounted for. This gap decreased when children were accounted for. This seems to signify that having children impacts pay for queer people less than it does for straight people. Lesbians, specifically, did not suffer quite as much of a wage penalty for their sexual orientation as gay men did, which makes sense, if the gender roles were less pronounced for queer people.
Since lesbians presumably do not expect to have a child with a partner that traditionally is more career-focused, they will likely specialize more on their careers. Conversely, homosexual men presumably do not expect to have a child with a partner that is traditionally expected to be at home and take care of said child, and therefore they focus more on taking care of the child themselves more than their straight counterparts. This is what leads to gender roles being less pronounced in same-sex relationships.

What is there to say in relation to my hypotheses?

## Women earn less than men, even when education, experience, residence, area of work, and sexual orientation are accounted for

This seems to be true given the available data. There was a gap, even for women with the same experience and schooling, which hints at statistical discrimination. Women are expected to leave the work force and hence get fewer and smaller raises and promotions.

## Men benefit more from education and labor market experience than women, in general

This was a surprising result. The returns to schooling were the same in the first five regressions, no matter how the population was separated. There was a slight difference in returns to
schooling when children were accounted for, except for lesbians, who did not seem to benefit nearly as much from schooling as the rest of the population.
When it came to returns to experience in the first five regressions, men got a slightly higher coefficient than the population as a whole, but there was no difference between straight and queer people. The big surprise, though, came when we accounted for children. All of a sudden, women, queers, and lesbians got more returns to experience than men. This was unexpected. One possible explanation is that men participate in the labor force for a larger percentage of their life, and hence each year of work is less significant, whereas women are expected to work less, with presumed longer spells of absence, and for them to have similar wages to men, experience has to pay more for women when compared to men.

## Gays earn less than straights

Gay people do indeed seem have a pay gap. Is this voluntary, statistical or prejudicial? There is a trend of gay parents to share household work more equally. This compromise between work and household tasks might not make gay men as attractive and focused in a professional setting, and the equivalent compromise for gay women make gay women more attractive in a professional setting. Queerness is not visible, as opposed to skin color or gender, but if their queerness were to be known by their employers, they might be perceived as being not as work focused as a straight man. This might lead to a statistical discrimination, in that companies invest less in gay people. There is also the possibility that employers are prejudiced and pay queer people less, and gay people do not want to upset the hands that feed them. There is also the possibility that potential employers are fewer for gay people and hence the possibility of higher pay is lower.

## The difference between gay women and gay men is less than between their straight counterparts

This also seems to be true. Specialization is less prominent among queer people, partially because there are fewer gendered expectations of pay. If you do not live life with the assumption that your partner will take care of any potential kids, or will provide for you and any potential kids, a professional/household work balance is more important. Gay men focus more on the home, and gay women focus more on their career than their straight counterparts.

## Having children in general negatively impacts pay; the more one has and the younger they are, the more pay is impacted

This surprised me. There seems to be a general uptick in pay for parents, expect maybe for gay parents. The cause may be that women who have kids, and still work, do so because it is worth the salary they are getting. For men, the reason might be the fatherhood premium, but also that, since Germany is a single breadwinner country, employers pay more to those with more dependents. This may also be applicable to women who continue to work after having children.

## Women who have children earn less than their childless counterparts

This was also a surprising discovery. The coefficient for having children was substantial, and neither the number of kids, nor the age of the kids, were detrimental to women's pay. It seems like, at least for our sample, having children is actually beneficial when it comes to women's wages.

## Part of the gender pay gap is that mothers earn less

Even though we already stated that women with children earn more than childless women, does the gender pay gap shorten when we account for children? This appears to not be the case. The unexplained difference between men's and women's wages was even larger when we accounted for children. This would imply that there is a purely gender-based difference in wages in Germany.

## Gay women who have children do not suffer the same wage penalty as their straight counterparts.

Gay women do indeed seem to not suffer the same wage penalty as their straight counterparts. Instead, gay women seem to suffer a wage penalty for having children, whereas straight women get a wage benefit. Each additional child reduces the size of this penalty, but regardless, it still remains present. It's worth noting that none of the data behaved according to our predictions for this section.

## Concerning values of $\mathbf{R}^{\mathbf{2}}$

$\mathrm{R}^{2}$ is below .5 in all our regressions. This means that there is a lot of room to expand the scope of this thesis. Nearly all our regressions which account for children have higher $\mathrm{R}^{2}$ than their childfree counterparts; all except for men. This signifies that children are an explaining variable for the wage differences for all investigated demographics except for men. Still, there is room left to account for background, presence of supportive parents, childcare availability, ideas about women's place in the household, and other potential explaining variables.

## 10 CONCLUSION

There are still way too small sample sizes of homosexuals to say anything definitively, even if we group all queer people together. Women earn less than men, gays earn less than straights, and queer women earn the least of the groups investigated. However, queer women's wage penalty is not as large a penalty as the sum of gay people's wage penalty and straight women's wage penalty. Schooling, as a factor of wage, impacts the population and our subgroups equally, with the exception of lesbians. Experience on the other hand, was more beneficial to everybody except men. Children affect pay positively for all of the sample population, except for gay people. Children mostly affects pay positively, but since this paper aims to describe what effects children have for same-sex couples, it is worth noting that having children, for queer people, is the only one of our factors that has a wage penalty.

## 11 APPENDIX

### 11.1 Variables in Detail

### 11.1.1 Origin of Variables

My variables come from different data sets. Each data set contains variables pertinent to a specific question. All data is collected on an individual level, if not otherwise specified.
PPath is the data set which contains all personal variables. It's the personal tracking file. The purpose of this dataset is to match a participant with identification numbers, survey status, and so on.
$P l$ is all the data from the personal questionnaire.
Bhpgen is the data from $p l$ but scaled down to make the data file smaller and easier to handle. Bioagel is an aggregation of data from the questionnaires about the children.
Bhpequiv is the income data.
The two data sets hbrutto and $h l$ are household data. hbrutto is all household identifier data on new and continuous respondents. Hl is all data from household questionnaires. (SOEP 2018)

### 11.1.2 Background Variables

This section describes the variables that are necessary to make the regressions, but not in the regressions themselves. It also aims to clarify which variables from the data are used, by linking the names they have in the regressions to the original variable names.
Syear is the variable of the survey year, in our case 2017. The variable of sexual orientation is sexor. Whether the sexual orientation of the interviewee is self-reported or not is marked in the variable sexorinfo.
Pid is the never changing personal number, and hid is the ID number of the current household of the respondent. Working hours can be found in bhp_79_01, the year of birth of the oldest child in birthy, years of education in d1110917, how many children in household in d1110717, labor market experience in expft17, whether or not the participant has children in hlk0044 and their gender in sex. Occupational information can be found in egp88_17. The tracking variable, which describes whether a person was participating in a specific year, can be found in netto. For the interested, the weighting variable is phrf. The variable pop describes whether the participant lives in a private or non-private household. The variable I chose to represent area of residence is regtyp. It checks if the participant lives in a rural or urban area.

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| Name: | Explanation/comments: |
| :--- | :--- |
| bhp_79_01 | Working hours |
| birthy | Year of birth of child |
| d1110717 | How many children in household |
| d1110917 | Years of education |
| egp88_17 | Occupational information |
| expft17 | Labor market experience |
| hid | Household ID number <br> children |
| hlk0044 | Status <br> (participating/dead/etc.) |
| netto | Weighting variable |
| phrf | Personal permanent id number |
| pid | Household status (private/non- <br> private) |
| pop | Region of residence |
| regtyp | Gender (male 1, female 2) |
| sex | Sexual orientation |
| sexor | How the sexual orientation was <br> determined |
| sexorinfo | Survey year (2017) |
| syear |  |

(Table 4)

### 11.1.3 Adapting Variables

The age of children in the household is not described in the data. There is, however, a variable which stores the year of birth of the first child. To get the variable which determines the age of the first child, hypothesis being that having kids early affect women's wages negatively, I created kidAge by taking the survey year minus the birth year or the kid.
My variable for area of work is derived from egp88_17. That variable in the data consists of 11 categories, which I then divided into four, depending on the type of work they did. Laborer consists of agricultural laborers, semi- and unskilled workers, and skilled manual workers. Clerk consists of routine clerical work, manual supervisors, and routine service \& sales workers. Manager consists of lower managerial \& professional workers, and higher managerial \&
professional workers. Self-employed encompasses small self-employed with employees, small self-employed without employees, and self-employed farmers.

### 11.2 ANALYSIS OF Miscellaneous CoEfFICIENTS

This is the analysis of variables of lesser importance. Pay is, for example, also affected by area of residence. People in rural areas earn $8 \%$ less on average, both for the population as a whole and for gays and straights. Between men and women, once more, there is a difference. This time, though, men suffer more from rural dwelling, with a negative coefficient of $10 \%$ instead of $6 \%$ for women (see Table 5). When we add our variables of children, rural living impact slightly more, but not enough to pay notice to, at $9 \%$. With men at $10 \%$, homosexuals at $7 \%$ and lesbians at $16 \%$, We can gather that lesbians living in rural areas have a significant wage disadvantage (see Table 6).

## Table 5

## Comparison of Wage

Regression

| VARIABLES | (1) | (2) | (3) | (4) | (5) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Whole sample | Only men | Only women | Non- <br> straights | Straights |
|  | lnWage | lnWage | lnWage | lnWage | lnWage |
| female | -0.15*** |  |  | -0.06 | -.15*** |
|  | (0.01) |  |  | (0.04) | (0.01) |
| sexual orientation | -0.11*** | -0.11 *** | -0.03 |  |  |
|  | (0.02) | (0.02) | (0.02) |  |  |
| femaleHomosexual | 0.07** |  |  |  |  |
|  | (0.03) |  |  |  |  |
| yearsOfSchooling | 0.06*** | 0.06*** | 0.06*** | 0.06*** | 0.06*** |
|  | (0.00) | (0.00) | (0.00) | (0.01) | (0.00) |
| yearsOfExperience | 0.03*** | 0.05*** | 0.02*** | 0.03*** | 0.03*** |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| expSq | $-0.00 * * *$ | $-0.00 * * *$ | -0.00 *** | -0.00*** | $-.00 * * *$ |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rural | $-0.08 * * *$ | -0.10 *** | -0.06*** | -0.08** | $-.08 * * *$ |
|  | (0.01) | (0.01) | (0.01) | (0.03) | (0.01) |
| Work: clerical | 0.13*** | 0.04* | 0.18*** | 0.03 | 0.14*** |
|  | (0.01) | (0.02) | (0.02) | (0.04) | (0.01) |
| Work: managerial | 0.34*** | 0.32*** | 0.39*** | 0.30*** | 0.35*** |
|  | (0.01) | (0.02) | (0.02) | (0.05) | (0.01) |
| Work: self-employed | -0.02 | 0.00 | -0.05 | -0.37*** | 0.03 |
|  | (0.04) | (0.05) | (0.06) | (0.13) | (0.04) |
| Constant | $63^{* * *}$ | 51*** | 50*** | 66*** | $61 * * *$ |
|  | (0.03) | (0.04) | (0.04) | (0.10) | (0.03) |
| Observations | 9,981 | 4,715 | 5,266 | 954 | 9,027 |
| R-squared | 0.35 | 0.39 | 0.28 | 0.27 | 0.35 |

Standard errors in parentheses

$$
* * * \mathrm{p}<0.01, * * \mathrm{p}<0.05, * \mathrm{p}<0.1
$$

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|  | Table 6 <br> Wage impact of children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Whole <br> sample <br> lnWage | Only men lnWage | Only <br> women <br> lnWage | Straights <br> only <br> lnWage | Queers <br> only <br> lnWage | Lesbians only lnWage |
| female | $\begin{aligned} & \hline-.22^{* * *} \\ & (0.03) \end{aligned}$ |  |  | $\begin{aligned} & \hline-.22^{* * *} \\ & (0.03) \end{aligned}$ | $\begin{aligned} & \hline-0.19 \\ & (0.12) \end{aligned}$ |  |
| sexual orientation | $\begin{aligned} & -0.04 \\ & (0.08) \end{aligned}$ | $\begin{aligned} & -0.06 \\ & (0.05) \end{aligned}$ | $\begin{aligned} & -0.05 \\ & (0.07) \end{aligned}$ |  |  |  |
| femaleHomosexual | $\begin{aligned} & -0.03 \\ & (0.09) \end{aligned}$ |  |  |  |  |  |
| yearsOfSchooling | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.07^{* * *} \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.06 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.05^{* *} \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.03 \\ & (0.02) \end{aligned}$ |
| yearsOfExperience | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.02^{* * *} \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.04 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.04^{* *} \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.04 \\ & (0.03) \end{aligned}$ |
| expSq | $\begin{aligned} & -.00^{* * *} \\ & (0.00) \end{aligned}$ | $\begin{gathered} -0.00^{*} \\ (0.00) \end{gathered}$ | $\begin{aligned} & -0.00^{* * *} \\ & (0.00) \end{aligned}$ | $\begin{aligned} & -0.00^{* *} \\ & (0.00) \end{aligned}$ | $\begin{aligned} & -0.00 \\ & (0.00) \end{aligned}$ | $\begin{aligned} & -0.00 \\ & (0.00) \end{aligned}$ |
| Rural | $\begin{aligned} & -.09 * * * \\ & (0.02) \end{aligned}$ | $\begin{aligned} & -0.10^{* * *} \\ & (0.03) \end{aligned}$ | $\begin{aligned} & -0.09^{* *} \\ & (0.04) \end{aligned}$ | $\begin{aligned} & -.09 * * * \\ & (0.02) \end{aligned}$ | $\begin{aligned} & -0.07 \\ & (0.09) \end{aligned}$ | $\begin{aligned} & -0.16 \\ & (0.12) \end{aligned}$ |
| Work: clerical | $\begin{aligned} & 0.20^{* * *} \\ & (0.03) \end{aligned}$ | $\begin{aligned} & 0.27 * * * \\ & (0.04) \end{aligned}$ | $\begin{aligned} & 0.13 * * \\ & (0.06) \end{aligned}$ | $\begin{aligned} & 0.21^{* * *} \\ & (0.03) \end{aligned}$ | $\begin{aligned} & 0.16 \\ & (0.12) \end{aligned}$ | $\begin{aligned} & 0.22 \\ & (0.15) \end{aligned}$ |
| Work: managerial | $\begin{aligned} & 0.37 * * * \\ & (0.03) \end{aligned}$ | $\begin{aligned} & 0.45^{* * *} \\ & (0.05) \end{aligned}$ | $\begin{aligned} & 0.30^{* * *} \\ & (0.05) \end{aligned}$ | $\begin{aligned} & 0.38^{* * *} \\ & (0.04) \end{aligned}$ | $\begin{aligned} & 0.30^{* *} \\ & (0.12) \end{aligned}$ | $\begin{aligned} & 0.35 * * \\ & (0.17) \end{aligned}$ |
| Work: self-employed | $\begin{aligned} & -0.06 \\ & (0.10) \end{aligned}$ | $\begin{aligned} & -0.06 \\ & (0.13) \end{aligned}$ | $\begin{aligned} & 0.06 \\ & (0.14) \end{aligned}$ | $\begin{aligned} & -0.04 \\ & (0.10) \end{aligned}$ | $\begin{aligned} & -0.31 \\ & (0.34) \end{aligned}$ | $\begin{aligned} & -0.21 \\ & (0.53) \end{aligned}$ |
| yearsOfSchooling | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.07^{* * *} \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.06 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.07 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.05 * * \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.03 \\ & (0.02) \end{aligned}$ |
| yearsOfExperience | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.02 * * * \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.04^{* * *} \\ & (0.01) \end{aligned}$ | $\begin{aligned} & 0.02 * * * \\ & (0.00) \end{aligned}$ | $\begin{aligned} & 0.04^{* *} \\ & (0.02) \end{aligned}$ | $\begin{aligned} & 0.04 \\ & (0.03) \end{aligned}$ |
| havingKids | $\begin{aligned} & 0.26^{* *} \\ & (0.10) \end{aligned}$ | $\begin{aligned} & 0.27^{*} \\ & (0.14) \end{aligned}$ | $\begin{aligned} & 0.22^{*} \\ & (0.13) \end{aligned}$ | $\begin{aligned} & 0.31^{* * *} \\ & (0.11) \end{aligned}$ | $\begin{aligned} & -0.05 \\ & (0.30) \end{aligned}$ | $\begin{aligned} & -0.12 \\ & (0.40) \end{aligned}$ |
| Constant | $\begin{gathered} 38^{* * *} \\ (0.13) \end{gathered}$ | $\begin{gathered} 09 * * * \\ (0.17) \end{gathered}$ | $\begin{gathered} 38^{* *} \\ (0.18) \end{gathered}$ | $\begin{gathered} 33^{* * *} \\ (0.14) \end{gathered}$ | $\begin{aligned} & 71^{* * *} \\ & (0.39) \end{aligned}$ | $\begin{gathered} 77 * * * \\ (0.49) \end{gathered}$ |
| Observations | 1,799 | 1,265 | 534 | 1,665 | 134 | 98 |
| R -squared | 0.39 | 0.33 | 0.42 | 0.39 | 0.31 | 0.21 |

Standard errors in parentheses

$$
* * * \mathrm{p}<0.01, * * \mathrm{p}<0.05, * \mathrm{p}<0.1
$$

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