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The Gender Wage Gap: How Does Having Children Affect the Wage Gap?

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Abstract

One of the main political debates in today's society is equal rights for everyone, and that includes equal pay for both men and women. Currently there is a wage gap between men and women due to differences in the industries that they work in, differences in human capital, and discrimination (McLay, 2017). Since the senior class at Illinois Wesleyan is about to graduate and go into the work force, I wanted to see how a female's wages throughout her career are affected by whether or not she had children. Starting and having a family has long been an important part of society, so it is good to know the extent to which wages are affected by children. In this paper, I am going to look at the differences in wages between four groups: men with children, men without children, women with children, and women without children, in order to analyze how having children influences the gender wage gap for women.

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I. Introduction

One of the main political debates in today's society is equal rights for everyone, and that includes equal pay for both men and women. Currently there is a wage gap between men and women due to differences in the industries that they work in, differences in human capital, and discrimination (McLay, 2017). Since the senior class at Illinois Wesleyan is about to graduate and go into the work force, I wanted to see how a female's wages throughout her career are affected by whether or not she had children. Starting and having a family has long been an important part of society, so it is good to know the extent to which wages are affected by children. In this paper, I am going to look at the differences in wages between four groups: men with children, men without children, women with children, and women without children, in order to analyze how having children influences the gender wage gap for women.

The Fair Standards and Labor Act (1938) was put in place in order to create a basis for minimum wages, overtime qualifications, and child labor laws. While the underlying purpose of the law was to create an atmosphere of uniform treatment of workers, it did not explicitly state that everyone should be paid equally. Women were not considered in this act because many were not working at the time (United States Department of Labor, 2017b). There was an amendment to this act in 1963, the Equal Pay Act of 1963, which explicitly states that no employer can discriminate a worker's pay due to gender (U.S. Equal Employment Opportunity Commission, 2017). Since an employer cannot pay their equally skilled workers differently, even if they are different genders, there has to be a reason why women are paid less than men, and I want to explore some possible reasons for that within this paper. More specifically, I want to know if women with children have lower wages than white males without children.

II. Theory

A leading labor economics researcher who focuses on women's wages is Francine Blau, who along with Lawrence Kahn authored an article titled "The Gender Wage Gap: Extent, Trends, and Explanations" that I found very helpful in my research. Within this article she discussed the motherhood wage penalty, which is the term applied to the negative relationship between women's wages and having children. When a woman has a child, she needs to take a maternity leave for medical reasons, no matter if it is allowed by the company or not, and therefore she will lose the time at work. Since she loses the time of physically being

at work, she loses some human capital that she has. A mother might also need to terminate her current job in order to take off the time that she wants to care for her child. If she is terminated from her job, she forgoes any returns that the company she was with might be able to give her, such as a higher salary because of longevity at the company. All these cases result in her human capital being decreased, and therefore she will have less human capital than a male in her position, resulting in lower wages for her (Blau, 2017).

Human capital is defined as "a unique set of abilities and acquired skills" that an employee brings into the labor force (Borjas, 2016). Each individual worker will have different levels of education, hours worked, jobs worked and so on, which is what human capital is made up of. In reference to women with children's human capital, I am focusing on the amount of time they have worked at their job. Since women need to take time off in order to have a child, they therefore do not have as much time worked as a male who did not take time off to care for his child. This is a difference in human capital, a characteristic that men can bring to work but women cannot and hence is a leading cause in the reasoning for the gender wage gap.

Since many employers prioritize long, continuous, traditional work, the working mother is not a favorable attribute to have because a mother would need to have flexible schedules. Men normally do not take care of the children; therefore, they are able to have those long traditional careers that companies adore. Since they are able to have strong careers and have children, companies see that as desirable because they can balance work life and home life, so they normally receive a "fatherhood bonus", basically a bonus for having a child. On the other hand, mothers are penalized with lower salaries because they have children (AAUW, 2017). It is a very hypocritical bonus on the part of the company.

Another contributing factor to the gender wage gap as suggested by existing literature is pay secrecy. Since most individuals keep how much they are making as a secret, women therefore do not necessarily know when they are making less than men because they do not discuss it. Pay secrecy is a contributing factor to the gender wage gap, due to discrimination from the employer (Kim, 2015). Gender discrimination is a theory that Francine Blau also explored, but this time in the article "The Gender Pay Gap: Have Women Gone as Far as They Can?" She explained that discrimination is based on a prejudice that women have to maintain socially appropriate roles, such as child-rearing (Blau, 2007). Pay secrecy is a prejudice that employees have against other employees in that they do not want others knowing their salaries. The employer utilizes pay secrecy and social roles of women to penalize them with lower wages. I will not pursue discrimination as a theory for this paper although with further research one can find similar results to the

human capital theory.

From the literature within the human capital theory, I have come up with the following hypothesis: women who have children will have a larger wage gap than women who do not have children, when compared to men without children. In other words, women with children will have lower wages and salaries than women without children. For the rest of the paper I will be focusing on testing this hypothesis and utilizing the human capital theory.

III. Data & Methods

Since my focus is on the gender wage gap in the United States, I collected data from the American Census Survey through the data retrieval tool IPUMS. I only retrieved data from the year 2015 because I wanted to keep my data size small yet large enough where I did not have to worry about any problems with the data being heteroscedastic or auto-correlated. Once my data were downloaded, I then used SPSS to manipulate the data. In order to maintain consistency in the population, I limited the sample size to only full-time workers. A full-time worker is someone who was aged between 18 – 65 years old and worked more than 48 weeks and 36 hours a week within the last year, in the 2015 survey. These limitations allowed my selected sample to be full-time workers before retirement age, which resulted in a final sample size of 953,371 people.

Once my data were filtered to be full-time workers, I then created dummy variables to proceed with my descriptive statistics and regressions. I created dummy variables for the following variables: female, children, married, Black, Asian, and educational attainment. For the variable female, if the respondents were female, the dummy variable populated with a 1, and if they were not female, it populated with a 0. The children variable is the same, if the respondent had children, it was a 1 and if not, it was a 0. To be considered married in my sample, the respondent needed to either be: married, married but not living together, or widowed. If these criteria were met, then the dummy variable populated with a 1, if not, a 0. In my sample, I only singled out two races because my reference group is white males with no children, so if the respondent was black, then the dummy variable populated a 1, and if not, a 0. The same goes for if they were Asian. The educational attainment dummy variable is five different dummy variables, each with a different education level. If the respondent had met that level, but not exceeded the attainment, the dummy variable populated with a 1, and if not a 0. A chart with all my variables and their definitions can be found on the next page. Within the chart there is a variable FemaleChildren; this is an interactive term that takes the female variable, and times it by the children variable to find the interaction of the two terms. I transformed my wages and salaries variable into the natural log of wages and salaries to be able to produce data that are more linear

than normal wages and salaries. Once my data had dummy variables, I then ran descriptive statistics and four regressions. My descriptive statistics ran the frequencies of each of my four groups within the sample and the mean wages and salaries.

Variable Name	Description
Dependent	
LnWages and Salaries	The natural log of annual wages for full-time year-around employed individuals
Independent	
Primary	
Female	1 = female 0 = male
Children	1 = has children 0 = no children
FemaleChildren (FemKids)	1 = is female with children 0 = is not both female and has children
FemNoKids	1 = females without children 0 = is not both female and has no children
MaleNoKids	1 = Male with no children 0 = is not both male and has no children
MaleKids	1 = Male with children 0 = is not both male and has children
Demographics	
Age	Age of sample
AgeSQ	(Age * Age) of sample
Number of Children	Number of children sample has in household
Married	1 = married, married but not living together, or widowed 0 = divorced, single
Black	1 = Black 0 = not Black
Asian	1 = Asian 0 = not Asian
HighSchool	1 = graduated from high school 0 = didn't graduate from high school
SomeCollege	1 = attended college but didn't receive a degree 0 = didn't attend college
Bachelors	1 = received Bachelor's degree 0 = didn't receive Bachelor's degree
Masters	1 = received Master's degree 0 = didn't receive Master's degree
Professional	1 = received a Professional degree 0 = didn't receive Professional degree
Age of youngest	Age of youngest child in household of sample
Age of eldest	Age of oldest child in household of sample

My regression equations are built on top of each other, starting with the simplest variables and working up to include all demographic variables as control variables. My regression equations are as follows:

Regression 1: $LnWages = \beta_1 (Female)$

Regression 2: $LnWages = \beta_1 (Female) + \beta_2 (Children)$

Regression 3: $LnWages = \beta_1 (Female) + \beta_2 (Children) + \beta_3 (FemaleChildren)$

Regression 4: $LnWages = \beta_1 (Female) + \beta_2 (Children) + \beta_3 (FemaleChildren) + \beta_4 (Age) + \beta_5 (Number\ of\ Children) + \beta_6 (AgeSQ) + \beta_7 (Married) + \beta_8 (Black) + \beta_9 (Asian) + \beta_{10} (HighSchool) + \beta_{11} (SomeCollege) + \beta_{12} (Bachelors) + \beta_{13} (Masters) + \beta_{14} (Professional) + \beta_{16} (Age\ of\ Youngest) + \beta_{17} (Age\ of\ Eldest)$

Within my Regressions 3 and 4, I am able to find the net effect that children have on a woman's salary by adding together the variables: β1 (Female) + β2 (Children) + β3 (FemaleChildren). By adding these variables together, I can see the net effect of how being a woman and having children affects a women's wages in comparison to my reference group, white males with no children.

IV. Results

To begin with, I analyzed the descriptive statistics of the frequency of females with children (FemKids), females without children (FemNoKids), males with children (MaleKids), and males without children (MaleNoKids). The results are presented in Table 1.

Table 1: Frequency	Frequencies	Percent
FemNoKids	216,087	22.7
FemKids	188,470	19.8
MaleNoKids	289,222	30.3

MaleKids	259,592	27.2
Total	953,371	100.0

As you can see in Table 1, females without children make up 22.7% of the sample, females with children are 19.8% of the sample, males without children are the largest with 30.3% of the population, and males with children are 27.2% of the population. From these descriptive statistics, males make up 57.5% of the population, which is the majority. This majority of males in the workforce is supported by Francine Blau (2017) stating that many times when a woman has children, she will either exit the labor market or become a part-worker, which neither scenario is included in this population, and therefore the males will make up majority of my current population.

Table 2 presents descriptive statistics for each group within the sample to see the mean values of the wages and salaries variable, without holding any variables constant.

Table 2: Average Wages

	GenderKids	N	Mean	Std. Deviation	Std. Error Mean
Wage and salary income	FemNoKids	216087	50164.02	46001.717	98.960
	FemKids	188470	51826.16	49628.378	114.317
	MaleNoKids	289222	60046.71	64875.579	120.633
	MaleKids	259592	75651.55	79899.069	156.818

For females without children, their average wage was $50,164, while that of women with children was $51,826. This goes against the theory that females with children make less than women without children, but no demographic variables other than gender and the presence of children have been held constant. This difference in expected wages could be attributed to women who have higher wages will want to stay in the workforce even after having children, because their opportunity costs are too great to exit the workforce (Miller, 2009). The men's average wages are as predicted by the literature, where males with children had a higher salary at $75,651 than males without children whose average wage was $60,046, which is significantly less than that of males with children.

The regression results are compiled in the following table:

Regression Results

Variable	Regression One	Regression Two	Regression Three	Regression Four
Constant	10.861***	10.793***	10.749***	9.362***
Female	-.233***	-.232***	-.129***	-.212***
Children		.145***	.239***	-.444***
FemaleChildren			-.218***	-.112***
Age				.070***
AgeSQ				-.001***
Number of Children				.020***
Married				.114***
Black				-.149***
Asian				.023***
HighSchool				-.001
SomeCollege				.187***
Bachelors				.566***
Masters				.730***
Professional				1.104***
Age of youngest				.007***
Age of eldest				-.013***
*** Significance of 0.01 level				

In my first regression with the only independent variable was being female or not, a female is at a -.223 percentage point disadvantage than men, which according to previously stated literature is to be expected. The second regression which included the independent variables, gender and children, still provided a consistent result with the literature that women are at a disadvantage compared to men, but it showed that having children (regardless of gender) gave a

wage advantage of .145 percentage points. From these two variables I cannot conclude the effect of being a woman and having children takes on wages which is why my next regression (regression three) includes my interactive term (FemaleChildren). This regression results in the interactive term having a negative .218 percentage point coefficient, proving women with children are at a disadvantage. From the variables female, children, and FemaleChildren, I can add the coefficients together to find the net effect of having children for women. The following adds together the three coefficients:

Female + Children + FemaleChildren = net effect on LnWages and Salaries

(-.129) + .239 + (-.218) = (-0.108)

From this net effect, it is shown that women are at a negative 0.108 percentage point disadvantage when compared to men without children. This supports the literature and that by having children, women are penalized with lower wages. While this regression did not control for demographic or human capital variables, my next regression (regression four) did. Once the demographic and human capital variables were controlled for, the coefficients of female, children, and FemaleChildren changed to the following: the female term has a -.212 percentage point impact on wages, while children has a -.444 percentage point impact, and FemaleChildren has a -.112 percentage point impact. In order to support my hypothesis, I need to see the net effect of children on wages, so again, I added the female, children, and FemaleChildren coefficients.

Female + Children + FemaleChildren = net effect on LnWages and Salaries

(-.212) + (-.444) + (-.112) = (-.768)

As you can see, children have a net effect of negative 0.768 percentage point on women's wages. This is a large impact that holding the demographic and human capital variables constant produces. The difference between these results and the results of my average wages and salaries can suggest that women who stay in the workforce have larger opportunity costs for exiting the workforce than the women who do leave the workforce. Both of my third and fourth regressions support my hypothesis that women who have children will have a larger wage gap than women who do not have children when compared to white men without children.

V. Conclusions

As the nation continues to progress, women should not have to be concerned that their wages will be penalized once they start having children. Hence I chose to focus on the net effect that children have on women's wages when compared to white men without children. Through my research, both in literature review and in empirical research, my hypothesis was supported. The research found that the net effect that children have on women's wages is negative, and therefore having children produces lower wages and a

larger wage gap for women with children. This difference is mostly due to the human capital difference that women experience when they must take time off of work to care for their children, and whether it be a few weeks or a few days, the time off still puts them at a disadvantage. This wage gap can be lessened by society and businesses accepting that men can and should take more time off to take care of their children. Women automatically are assumed to take time off from work because they have a maternity leave, but men do not have a designated leave that allows them to take care of their children. Some regulations can help with this problem, such as by requiring companies to give both men and women paternity leaves when their child arrives and to give them more sick days to be able to care for their children. The US government provides a leave that if you want to take it, your company must allow you to and promise to give you a job when you get back. This is known as the Family Medical Leave Act (FMLA) that provides all employees, both male and female, access to 12 weeks unpaid leave time that they can use to take care of a qualified family member, which a child counts as a qualified family member (United States Department of Labor, 2017a). So technically men can take time off to take care of their child and therefore lose the same human capital that women lose when they take time off for their maternity leave. But society expects that women will be the ones staying home with the children. A solution to this is that companies can enforce the FMLA and allow men to take the time off for their children without the worry about discrimination and thoughts of lack of loyalty to the company.

Also, it is suggested in the literature that men who have children get a "child bonus"; it could be instituted to give women the same "child bonus" in order to incentivize them to keep working while they have children. Nonetheless, the wage gap between women without children and women with children should be nonexistent – yet it still exists and is very large, which disadvantages women who want children.

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