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How Classical Economic Theory Fails to Explain the Gender Wage Gap, and How Sociology Fills That Gap

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HOW CLASSICAL ECONOMIC THEORY FAILS TO EXPLAIN THE GENDER WAGE GAP, AND HOW SOCIOLOGY FILLS THAT GAP

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Abstract:

Why do economic models miss the mark in their analysis of the gender wage gap? This paper argues that conventional interpretation of the wage equation and that economic models typically overlook critical factors of social life that substantially affect the gender wage gap, and answers the question: What is the impact of certain social factors such as pay secrecy, and percent of women in legislation on wages? This paper aims to evaluate the differences in a model's effectiveness if social measures are added. Through regression analysis of family level data on household heads and wives aggregated with state level social data, it was found that social variables positively impact men while negatively impacting women; however, results for women are not statistically significant.

Introduction:

Inequality is the newest form of segregation (England, Farkas, and Barton, 1988). The authors also find that sex discrimination during the hiring process is not uncommon. While England's paper may be out of date having been written almost thirty years ago, the gender wage gap still exists today. These ideas are consistent with the sociological view that sex discrimination is present during the hiring process, as well as when employers and firms are determining a new employee's wages. This socialization of hiring practices institutionalizes a limit on interoccupational mobility (England et al, 1988). Therefore, women are less likely to search for other jobs, disqualifying themselves from searching for jobs with better pay. To better understand the gender pay gap, this paper aims to answer the question: How do traditional economic wage functions fail to

understand the gender wage gap? And, do the introduction of sociologic control variables increase the effectiveness of economic models?

There is much literature, both economic and sociologic, on the gender wage gap which tries to understand some of the reasons it is so prevalent, with a recent stagnation. Economists find that women often opt into different occupations that are less competitive, but also offer less competitive pay, whereas, men often opt into competitive and rigorous fields (Bowlus, 1997). They also find that women are less likely to receive competitive bonuses, where a large potion of many wages come from (McGee, McGee, and Pan, 2015). Sociologic literature discusses how pay secrecy laws [1]may hinder women's wages (Colella, Paetzold, and Zardkoohi, 2007) (Kim, 2015) (Kim, 2013). It also discusses the differences in how women are perceived by society and how that may affect women's wages.

The purpose of this paper is to create an intersection between economic and sociologic theories on why women's wages are lower by evaluating a neoclassical economic wage function while controlling for sociologic factors. This paper looks at household level data and analyzes men and women in the years 2009 and 2013, and the impact that experience, education, pay secrecy laws and the percent of women in legislation have on the efficiency and explanatory power of the wage function.

The contributions of this paper are a unique way to look at the wage function the mincer equation. This function was created to understand the differences in wages for men of the same age, with the same experience, with the same education level. This paper aims to expand that model to include social control variables, a test not yet done in the

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[1] Pay Secrecy Laws are laws which prevent workers from discussing their wages with the co-workers.

field of economics. Other contributions are looking at the social factors of women in legislation, which has not been used a measure of cultural perception of women before. This variable will gauge how willing people in each state are to allow women to be in power, giving a control measure for the perception of women.

This paper found that there is a significant correlation between wages and the percent of women in legislation, for men. For women, a greater percent of women in legislation actually decreased wages, however, this relationship was statistically insignificant. Pay secrecy laws were found to be less impactful than originally hypothesized, having low statistical significance for women in 2013, and no statistical significance for men or women in 2009.

Section one gives the motivation behind this paper. Section two reviews the literature. Section three outlines the analytical framework. Section four gives the econometric model and data used in this study. Section five discusses the results of the data and limitations of the data, and section six gives concluding remarks, discussing further research possibilities.

Motivation:

In order to breakdown this neoclassical mechanism of discrimination against women, we must slowly breakdown segregation and uncompensated pay differences between male and female occupations (England et al, 1988). Currently, there are far fewer male and female dominated occupations, then there were just a few decades ago. While there are still some occupations thought to be for women, such as teaching and nursing, and other occupations for men like banking, our culture is finally adapting to

necessary change and it is becoming more common for people of all genders to enter these formally "gendered" occupations. However, this gendered discrimination still exists, but it is shown in wages, rather than occupations.

In a TED talk by Sheryl Sandberg in 2010 titled "Why we have too few women leaders" she explains how women rarely take each opportunity to "sit at the table" and be present in their careers. Women begin to opt out of work far sooner than necessary by taking a back seat in their own career when they decide to have children. Women are far less likely than men to be truly present in their careers and women are likely to withdraw at the first sight of family (Sandberg, 2010) (Fetterolf and Rudman, 2014). This paper led to questions of why economic models never include the social factors of the economy, even though society interacts with the economy. This paper seeks to understand if economic models included social factors of their accuracy would increase to take into account the society that people live in.

In the ever-changing economy, neoclassical economics rarely changes its assumptions for classical models. The neoclassical wage function was developed in 1958 by Jacob Mincer (now called the Mincer Equation) and has had few changes since. Economics does not change with the times, however, sociology is constantly changing with the times and adapting to how people are *now*. The gender wage gap is continuously studied by academics, but what this paper aims to understand is the impact of unconventional social factors in evaluating the gender wage gap to see if its accuracy increases.

The motivation for this paper is to understand the intersection of economic analysis and social factors for why the wage gap exists. Economists previously have only

studied the market factors such as inequality, age, and education when studying the gender wage gap (Mincer, 1958). On the other hand, sociologists have interpreted the social components of the gender wage gap through a sociological lens such as social norms and embeddedness. Social norms are ways in which culture shapes everyday behavior such as raising your hand to speak in class. Embeddedness is the process in which a social norm becomes more of a "fact", meaning that behavior becomes embedded and would not be broken, such as people complying with laws.

Economists have frequently studied the subject to gain insight into this phenomenon; however, economists look at the wage equation using economic variables such as unemployment, inequality, education, and industry, and do not account for the changes in the economy that are more social. These social factors likely have an impact on the economy, but have never been studied in this context. As an economics major and sociology minor, this paper aims to bring together my two disciplines of academic interest to create a more comprehensive analysis of the causation and perpetuation of the gender wage gap.

Women have received more than half of the college degrees given since the 1990s, yet women's increased education has not led to a negligible gender wage gap (Miller, 2016). Over time, the gender wage gap has not changed much (Sandberg, 2010). The gender wage gap has stagnated over recent years starting around 2004, as seen in Graph 1.

Sociology views the economy differently than economists; Rather than assuming stability, sociology accepts the volatility of human nature and changes over time with the

assumptions of social culture. Sociologists can measure a culture through their social norms and embedded behavior.

Men attribute their success to themselves, whereas women attribute their success to the help they have received from others (Sandberg, 2010). Women tend to be more back seat drivers in their own life, and their pay gap reflects that. Our social norms have taught women they are not to negotiate a wage, but rather they are to accept the wage they are given. Some relevant social constructs and embedded behavior are the idea of gender roles and how men are the money makers in a family and women are the people who stay home and work. This ideology dates back hundreds of years, but society is slow to change to accept a growing female work force.

In an article by *The Guardian* on a London think-tank report on inequality and the gender pay gap references a study on Australia's recent increase in inequality since the mid 2000s (The Guardian, 2015). "[E]vidence both in Australia and globally suggests tackling inequality is an important part of achieving wealth creation and growth when technological disruption is causing dislocation in the globalized economy" (The Guardian, 2015). These social constructs are worth noting in the context of economic growth, since inequality can cause a drag on growth in the economy.

Literature Review

The literature reviewed in this paper focuses on a few main ideas. First, it will explore traditional economic understanding of the gender wage gap and how it affects women. This will explore different ideas of how women are disadvantaged in the labor market. Next, this paper will explore relevant sociologic literature to understand how

sociologists view the economy, and how sociologic control variables may affect an economic model. The sociologic literature will focus on how pay secrecy laws[2] impact women and others, how housework broken down by gender effects the gender way gap and willingness to contribute to housework. Lastly, it will focus on how women more often receive different pay schemes than men, and connecting the reasoning behind self-selection into different pay schemes with sociologic theories.

Wage is often studied as a function of age, experience, and education. The neoclassical wage function the Mincer Equation was the first equation to examine differences in pay of men with the same level of education and experience. The Mincer Equation is a formula to understand wage as a function of a man's education, age, and gender (Mincer, 1958). This equation was first introduced to the field of economics in 1958 when Jacob Mincer first wrote on the topic and was the first paper which went to analyze the difference in income between those of the same education level and skill level.

This equation was the first of its kind, however, neoclassical economic theories often lack practical application. While the Mincer Equation is one of few that has more practical variables, it still misses on some of the nuances created by human nature, which can be captured by social control variables.

Men and women have different patterns for job searching. Men are likely to search for new positions with increased wages once they feel that their wage is too low for their skill level (Bowlus, 1997). On the other hand, women are less likely to search

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[2] Pay Secrecy laws illegal in the following states and per put into law in the year in parenthesis: Michigan (1982), California (1984), Illinois (2004), Vermont (2005), Colorado (2008), Maine (2009), New Jersey (2013), Minnesota (2014), New Hampshire (2014), Connecticut (2015), New York (2015).

for other jobs, since they have higher search friction (Bowlus, 1997). This means women are less willing to search for a new job and this search friction can account for up to 30% of the gender wage gap. Women are also far less likely to leave their jobs than their male counterparts as prefer more stability in their work (Keith and McWilliams, 1999). However, if women do choose to leave their job, it is likely that it is for family related reasons such as childcare (Keith and McWilliams, 1999). Therefore, women are far less likely to seek opportunities for increased pay. One may think that having one steady job in the long run will pay off higher due to company loyalty – although both Bowlus and Keith and McWilliams's papers argued that this ideology is mistaken. Though some would argue that job market competitiveness is not a large indicator of the gender wage gap, as it may not be visible competition to someone searching for a new job (McGee et al., 2015). However, these ideas may impact women's decisions when applying for a job or leaving a current job. If women feel as though their partner may not be at home, they may be unwilling to leave a job for a higher paying job in fear that the new job may require more time which could then impact her family life. Familial uncertainty can lead women to staying in the same job where they know the required hours and effort. One of the largest differences between men and women is the elasticity of job searching for higher wages. If women are unwilling to leave their job due to uncertainty, they lose the opportunity to search for a higher paying job even though their current job may not be increasing pay at the same rate that their skills increase.

The assertions above are consistent with findings from Hirsch and Schnabel. They concluded similarly in their study on the German labor market that women were less likely to move jobs due to non-family related reasons. "We argued that due to domestic

responsibilities women should be less inclined to make job-to-job moves, likely to reflect wage-improving voluntary quits, whereas they should have a higher propensity of leaving their jobs to non-employment" (Hirsch and Schnable, 2012). They conclude women are less likely to move jobs to improve their wage, but rather often when women leave a job they are moving out of the labor force into non-employment. The study also concluded that women are significantly less wage-elastic then men (Hirsch and Schnabel, 2012). This wage inelasticity could be another large factor for why the gender wage gap exists, as women are less concerned about wages, whereas men seem to be driven to seek higher wages.

McGee et al. (2015) state that women are less likely to opt into competitive environments for work. However, they also state that competitive work fields are also more likely for them to have increased wage opportunities. Without women opting into these job markets, they will also continue to have lower wages. Women are also less likely to receive bonuses and had originally hypothesized that this competitive structure would cause a large pay gap. However, McGee et al. have concluded differently that their original hypothesis concluding that the competitive nature of a job does affect pay. Women and men both receive bonuses, however, when bonuses are based on a comparative scale – and judged against co-workers, men more often receive the bonuses.

It is important to note that a large impact on the gender wage gap could be from bonuses received in addition to normal pay. Across several well-defined performance-pay types, women with many different specifications were less likely to receive bonuses (McGee et al., 2015). Women are more likely to receive higher pay when using a piece-

pay[3] compensation scheme (McGee et al., 2015). This could mean two things. One, women are more motivated by the amount of output being what they are judged on, or that women are more efficient workers. However, both show that women are being underpaid, regardless of incentives, which could be reflected in the gender wage gap.

Some would argue that the difference in pay is widened due to lack of competition and wage elasticity among women since they are less likely to negotiate and less likely to search for a new job for increased pay (Bowlus, 1997).

It is clear from the literature that the topic of gender wage gap is well researched in both sociological literature, as well as in economic literature, both concluding that the gender wage gap is heavily reliant on sociologic factors that impact the economy (Parsons and Smelser, 2005). However, this innovative research of their impact on one another could shed light on their interaction with one another and how they are highly related, even though they are often researched separately.

Women are not only more likely to receive lower wages for normal work, but when a country is faced with economic crisis, women often receive worse compensation than males (Giron and Correa, 2016). Public policies are likely to benefit men more than women, leaving women to resort to informal employment and lower paying jobs (Giron and Correa, 2016).

Women not only suffer from a gender wage gap, but women also suffer from higher levels of unemployment (Garcia, 2017). When faced with economic crisis, women lost their jobs at faster rates than men (Garcia, 2017). When women lose their jobs, they become more willing to accept work at lower pay. This could be a contributing

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[3] Piece pay is when a worker is paid based on their output, regardless of time put into the output.

factor to why women have lower pay than men. If women believe that their jobs are at risk, they would be less likely to demand higher wages for fear of being laid off (Garcia, 2017). However, Garcia concluded that men are more often laid off than women since men are more likely to opt into jobs which have more cyclical fluctuations in their availability, which leads to gender occupational segregation (Garcia, 2014). Men and women both self-select into occupations they are more attracted to: Men seem to enjoy the riskier positions which have higher wages, but also higher rates of unemployment, whereas women are more risk averse and would rather choose a job that has a lower pay but also lower chances of being laid off (Garcia, 2014).

Having children can lead to an increase in the gender wage gap. After maternity leave, women looking to re-enter the work force face unbelievable barriers, such as reduced wages for time lost at work, and lost skills from potential technological advances that she missed during her maternity leave (Garcia, 2014). These types of loss of time at work do not occur for men, furthering both the embedded nature that women are the partner who takes care of the children, but also that women have barriers men will never face such as decreased wages due to pregnancy.

The gender wage gap has begun to decrease over the past decade, however, many authors believe that it will not yet vanish (Blau, Lawrence, and Kahn, 2000). These authors discuss that there is still quite a bit of discrimination in the labor force that women experience. Women will continue to face this discrimination even if the prejudice against women slowly declines (Blau et al., 2000). Women remain the primary caretaker of children and household work, so their ability to fully engage with the labor market

may be delayed until the stigma of women working in the home is eliminated from our social culture (Blau et al., 2000) (Fetterolf and Rudman, 2014).

Pay secrecy laws are enacted in several states, and banned in seven states (Kim, 2015) (Kim, 2013). These laws legally bind employees to a contract stating they are not allowed to discuss their wages with collogues. These laws can negatively affect women more than men (Colella et al., 2007). Men just graduating from college negotiate a wage 57% of the time whereas women only negotiate their wage 7% of the time. Since women are not negotiating for themselves from the start, these laws could impact them even more. Some researchers believe that pay secrecy is one of the contributors to the gender wage gap (Kim, 2015). In Kim's article about pay secrecy, they discuss how inability to discuss wages at work can leave women with lower wages. Employers can more easily discriminate when employees are unable to disclose their wage to co-workers (Colella et al, 2007). If women do not know their male counterparts have negotiated for a higher wage, they do not know that they should be negotiating for a higher wage (Colella et al, 2007) (Kim, 2015). These laws affect both men and women, however, due to the nature of our society and that on average women do not negotiate their wages, these laws are affecting women more negatively then they are men. However, Colella et al's argument lacks the intersection how pay secrecy may affect social life, and how it effects the economy. Pay secrecy can be detrimental for women who are unable to find out that their wages are lower than male counterparts. The argue lacks analysis of how discussing wages may positively affect both the economy and the pay gap.

If women can feel empowered to inquire about their pay and any gender differences in pay, states which outlaw pay secrecy laws would allow women to negotiate

for increase in pay therefore reducing the gender wage gap (Kim, 2015). These laws were enacted to aid privacy among employees, however, they have caused more harm than they have good since workers no longer have a way to access information which could help them negotiate to a higher wage.

Firms have an incentive to pay lower wages whereas employees have incentives to search for higher wages, for profit maximization for both firm and employee. However, theoretically this makes sense, but practically, this does not happen as often as it should for women. Market wages are supposed to discipline workers and employers by coming up with a fair wage for both (Kim, 2015). However, much of the information needed to explore the fairness of a work compensation package is unavailable to workers giving the employer an unfair advantage of perfect information (Kim, 2015). This perfect information can also negatively affect women, both papers arguing similar points, both discussing the lack of information which more often negatively impacts women. When employees cannot discuss wages with coworkers, it is difficult for to accurately predict their value to the company, and evaluate if their pay is fair.

If workers knew that others were making higher salaries, they may have an incentive to increase productivity to gain leverage for discussing a salary increase. Salary transparency would enable women to know what others are earning and to negotiate for similar pay. This would allow women the information to either informally negotiate a higher wage, or know that they have the information to bring a case to the court system for discrimination in pay (Kim, 2015).

Pay secrecy helps companies avoid perceptions of unfairness by being allowed to prevent workers from discussing wages with one another to unveil any potential

discrepancies between equally qualified workers, while still remaining unfair to workers, and evading the perception of wage discrimination (Kim, 2015). Therefore, lack of knowledge can lead to a larger pay gap. Employer transparency is vital to employees, so the employer is motivated to provide an equal pay system for all workers with equal skills (Kim, 2015). This allows employees to feel as though they can negotiate for themselves if they are not being treated fairly. By being comfortable at work, this could lead to increased efficiency, whereas if an employee is unhappy with their wage and unable to find out if they are being paid unfairly may not want to be as productive of a worker, even if that lack of motivation is unintentional (Kim, 2015). This also allows employers to monitor and remedy any unfair pay brought up by an employee.

Sex discrimination during the hiring process can lead to limited interoccupational mobility (Abbott 2005) (Auspurg, Heinz, Sauer, 2017) (England et al, 1988). This mobility leads to several other problems, such as women being afraid to negotiate a wage when offered a new position for fear of being seen as demanding, or that women are afraid to look for other work, as they may not find it elsewhere and job searching could threaten a current position. These negative perceptions are embedded into our social culture, which makes it difficult for women to emerge from this unintentional discrimination.

A social construct is "a social mechanism, phenomenon, or category created and developed by society, a perception of an individual, group, or idea that is 'constructed' through cultural or social practice" (Dictionary.com). Social construction of gender norms means that society has an accepted list of practices that are either considered to be for men or for women, and these gender norms are slow to change. For example, wearing

blue as young boy or pink for a young girl. These ideas are agreed upon characteristics, which can allude to the gender of the person. A gender construct that is relevant to this research is that women are the partners in a relationship who take care of children, and do the house work; whereas the man of the relationship is responsible for fixing broken things around the house and making sure the family is financially stable (Fetterolf and Rudman, 2014). This embeddedness is so ingrained that women who made the same or less as their husbands believed that they should be completing more of the household work (Fetterolf and Rubman, 2014). Unequal share of housework can be problematic to social culture, leading to resentment among partners because one's belief that they are pulling a greater share of the household labor (Fetterolf and Rubman, 2014). Men feel as if they are entitled to more, even though they should share equal weight.

As income increases, a male partner[4] feels entitled to contribute less in the home; Whereas, domestic entitlement did not affect the amount of housework and childcare that was provided by the female partner (Fetterolf and Rubmann, 2014). The socially constructed gender roles are clear here; women have been deemed the household workers and the home makers for years. Now that women are becoming more prominent in the workforce, society is slow to shift the socially constructed idea that women are required to be working in the home more often than men. A 21st century society cannot be socially and economically efficient if half of population (women) are marginalized from the workforce through such social constructs and a significant gender pay gap.

Gender roles are embedded into the social structures of American culture. Embeddedness is a sociologic theory that explains how something is so engrained into a

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[4] In a relationship with one male partner and one female partner

culture it is unlikely to change. The economy is constructed through embedded culture (Curry, 2005). This means that the economy is shaped by difference factors of social life. The different social factors in the economy allows different types of economic structures to form, which then impact later economic decisions (Curry, 2005).

Similarly, in a study by Mencarini and Maria (2010), they found that spousal entitlement[5] is prevalent and that husbands more often found themselves upset by the unequal share of household work if the larger share fell on the husband. However, the increased household work often did not create animosity towards husbands when a wife had the larger share of the household work (Mencarini and Maria, 2010). This is an example of socially embedded behavior, and gender norms. Men feel as though they should earn money for their families, and in return, they do not have to attend to the housework. This gap in responsibilities shows the embedded ideology that women work in the home, and men work for the family's money, however this is not the case as much anymore. Slowly, our society has been shifting into a more equal share of household labor with stay at home dads on the rise. These instances of breaking social norms can lead to more gender equality in the work force since now both men and women can be associated with household work and child care.

Analytical Framework:

This paper seeks to extend the neoclassical earnings function of the Mincer Equation to include sociologic variables to better understand how the economy and social life intersect. The model looks at a base wage compared to one of skills. The base wage

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[5] Again, while in a relationship with one male partner and one female partner

is an assumption of what someone in a similar occupation would earn prior to any education, skills, and training.

The Mincer Equation was the first to understand that classical economic theories lacked the ability to adapt to change by using many assumptions that would rarely occur in the real world. Therefore, Jacob Mincer attempted to exclude biases that exist in all economic theories of assumptions by adding in assumptions that were more realistic. Some of the variables include controlling for skills, by assuming only those with the same opportunities and skills can be compared, and takes a discounted amount to control for time that it takes to be trained and to obtain those skills to compete for a job or occupation. However, the Mincer equation is quite outdated. It assumes a person only has one job throughout their lifetime, when in fact, people not only have many jobs, but they have many careers over the course of a lifetime. In 1958, when this paper was first written, it may have been more likely that one would stay at the company in the same job for a lifetime. However, in today's labor market, workers are changing jobs frequently, and often changing careers several times in their life (Sandberg, 2010). This creates a potential error or bias that this mode fails to consider due to its dated techniques.

The Mincer equation aims to answer the question of why there are variances in different people's earnings when their education and age are the same. It was the first research of its kind to fully begin to interpret and understand that wages were not always equal even, if equal wages are deserved. Mincer states in his 1958 that the paper was written to explore the difference in take home wages for individuals with the same education in the same occupation (Mincer, 1958).

Data and Methodology:

The data for this has been taken from Panel Study of Income Dynamics (PSID) Family level data. This is a dataset, which began in the 1960s, follows families gathering data on various aspects of the families lives including their income data. The data used for this study includes the years of 2009 and 2013. The families were broken into head and wife. In order to keep this separated by gender, all families with a female head were dropped from the data prior to regression analysis in order to control accurately for gender as the "male" gender has been measured by household head.

The model used for this study will be adapted from the Mincer Equation (1958), which is a model that uses education and experience to understand wage. Due to the aforementioned lack of explanatory power in neoclassical economic theory necessary to identify determinants of wage, this paper will add various sociological control variables in an attempt to create a cohesive model identifying various impacts on wages.

One of the social variables is pay secrecy laws which are currently illegal in 11 states[6]. This variable measures the impact that making pay secrecy illegal has on wages. Although literature does not say much about these variables, it is clear that they would be a vital variable to understand the gender wage gap. Since men are more likely to negotiate their wages, they would be less affected by the prevention of discussing wages at work (Kim, 2015). Men are more willing to make sure they are being paid fairly by negotiating their wages at higher rates than women, whereas women are more likely to be more passive and accept a wage that is offered to them (Kim, 2015). To control for the

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[6] Pay Secrecy laws are illegal in the following states and per put into law in the year in parenthesis: Michigan (1982), California (1984), Illinois (2004), Vermont (2005), Colorado (2008), Maine (2009), New Jersey (2013), Minnesota (2014), New Hampshire (2014), Connecticut (2015), New York (2015).

disproportionate effects the pay secrecy laws have on women, I will include a dummy variable in the dataset to indicate whether a state has pay secrecy laws. The dummy variable will be 0 in the years before the laws were made illegal and 1 the year the law was made illegal and henceforth. This variable will allow for analysis over time of states who have this and allow groups to be compared while running regression analysis of the impact on the states before and after the laws were enacted. This will give insight to the effectiveness of pay secrecy laws. Including this variable will help explain the impact of pay secrecy on wages, which could lead to significant policy implications.

Another social variable included in this study will be the percent of women in legislation (WL). This data was aggregated to the individual level by the state an individual life in, and added to the individual level data as a measure for social embeddedness against women. This has been included to measure how willing a society is to accept women into elected positions which make laws for both the state and the country. This measure has been used by other authors who have tried to understand the differences in women's representation across countries in Europe (Norris, 1985). However, this is the first of its kind for it to be used as an explanatory for embedded bias against women.

Embeddedness is a sociologic theory explaining how social norms become socially accepted behavior (Curry, 2005). To measure how women are viewed in our society, I have included the variable of women legislators. This is a variable, which has not previously been used in sociologic or economic studies previously, to measure the cultural acceptance of women. These are positions women must be elected into, showing what percentage of the state's leading representatives are men and women. This will

measure the social acceptance of women in these positions, therefore measuring the embeddedness, and social and cultural acceptance of women in our society.

There will be two models in this paper that will be explored. The first model will aim to understand the short falls of the economic model by exploring the relationship between both the economic variables, as well as models controlling for social variables to understand the impact they may have on the model. This model seeks to understand how traditionally used economic variables interact with social controls, and if the effectiveness of the model increases This model, the additional variables of pay secrecy laws and women in legislation will be included. The second model includes only economic variables. The difference in these results will allow for analysis of how economic models may be failing by not including variables which aim to understand how humans interact in an economy rather than accepting many assumptions for each model.

The model will include the variable Income of Household Head (IncomeHead) which will represent the income of the head of the household, and Salary of Head's Wife (WifeSalary) which will represent the salary of the wife of the head of the household. The data also includes control variables for both head and wife's education level which is labeled EduWife and EduHead respectively.

To control for experience, the number of years a wife have been employed since 18 was included (YearsEmployedWife). This variable will more accurately control for experience than age (as many others use age as an experience control) since often women take years off for maternity leave, and other household related reasons, that age may inaccurately represent their skill and experience levels (Keith and McWilliams, 1999). For the household heads, the same experience measure was used to express the number of

years they have worked since age 18 (YearsEmployedHead). These variables mirror the labor market experience variable in the Mincer model.

Lastly, social factors are included into the model to measure the impact that they have on the gender wage gap. PS symbolizes a pay secrecy law dummy variable, which is included to measure if state are implementing policies which affect women more negatively than men (Auspurg et al, 2017) (Colella et al., 2007). The variable will be 1 if a state has outlawed pay secrecy laws. WL represents the percentage of women in legislation in each state. WL will be a measure for how culturally accepted women that is new for this study. This type of measurement has not yet been done, but would be a way to understand cultural perception measurement as a way that women would be accepted by their community by being elected officials to a given state. This was measured by the percentage of women who were elected into legislative positions, taken from the Bureau of Labor Statistics. Lastly, there is an error term to account for potential error in the model.

The model has been broken down into heads of households and wife's. This is so that the two groups can later be compared for their difference. Each model will be assessed in 2009, and again in 2013. The independent variable of model one is the Income of Household Head (which will be a log measurement as per the mincer equation), and the dependent variables are Years of education the head has completed, the number of years the head has worked since they were 18, if pay secrecy laws were illegal in the state the household head lived in, and the percentage of women in legislation. This means that it is expected that the education and experience of the head would affect the head's income, as well as if pay secrecy laws are illegal and the

percentage of women in legislation which will control for the impact of the social variables on the model.

The independent variable of model two is the salary of the wife (which will be a log measurement as per the mincer equation), and the dependent variables are years of education the wife has completed, the number of years the wife has worked since they were 18, if pay secrecy laws were illegal in the state the household head lived in, and the percentage of women in legislation. This model is measured for the ith individual, in t year, in j state.

Model MS: Men Household Heads:

$\ln(\text{IncomeHead})_{itj} = \text{EduHead}\beta_{itj} + \text{YearsEmployedHead}\beta_{itj} + \text{PS}\beta_{it} + \text{WL}\beta_{itj} + \varepsilon_{itj}$

Mode WS: Wives:

$\ln(\text{WifeSalary})_{itj} = \text{EduWife}\beta_{itj} + \text{YearsEmployedWife}\beta_{itj} + \text{PS}\beta_{itj} + \text{WL}\beta_{itj} + \varepsilon_{itj}$

Both model ME (Male Economic and Social Control Variables) and WE (Wife Economic and Social Control Variables) will be observed in 2009 and 2013.

Expectations

One may expect that women heads of household would have a similar wage to those of other house hold heads but as seen in table three, their wages are far lower than male heads of households.

It is to be expected that as the education of the individual increases, their salary would also increase (Mincer, 1958). It is to be expected that education will have a larger impact on the wages of females, as education is more important for women as they must

prove they deserve higher wages, whereas men without further education can still earn high wages. This is because education often has a large impact on women since men are already paid higher rates in any job. Also, women with a high school education or lower often opt into professions that are lower paying than their male counterparts (Colella et al, 2007) (Kim, 2015).

The gender wage gap is often misrepresented due to the lack of understanding for what a gender wage gap is (Hunt, 2002). Previous research has found that it is difficult to measure men and women on equal playing fields, therefore it is important to control for skills and experience to most accurately compare the two (Hunt, 2002). Since men and women often choose different fields, women in Germany were more likely to choose vocational tracks, leading women into different occupations and jobs as men, therefore it was difficult to accurately control for skills as men and women often were holding different jobs.

It is also expected that as the experience of an individual increases, their salary would also increase (Colella et al, 2007). Overtime, an individual would gain more experience in a given field and therefore, have skills to receive higher pay. This is reflected in the Years worked since 18 variables for both men and women. The coefficients are expected to positively increase as wage increases since Colella et al discusses how experience attributes to higher wages since employers need to compensate for experience.

It is expected that pay secrecy laws being outlawed would have a positive effect on the wage of the wife, however one would expect that this has a low impact on wages

(Kim, 2013). This is because these are states where it is illegal to have the laws, but other states may also not have laws in place.

It is expected that the education and experience of the head would affect the head's income, as well as if pay secrecy laws were illegal and percent of women in legislation which will control for the impact of the social variables on the model.

Limitations of Data, Shortcomings of the Model

PSID data is not readily available on an individual level, but is easily available on a family level, therefore this data was taken from a family level. The problem with this data was that it was only accessible up to 2013, and since 2013 there have been several changes, such as President Barack Obama signing an executive order in 2014, stating that states can no longer legally have pay secrecy laws and if data were available after 2013 that this study could have a better understanding of pay secrecy laws had on wages if this data went past 2013 since the impact of the 2014 executive order could have been noted. Also, since it was family level data only house hold head's and their wives were included and it would have been beneficial to examine household heads with female head's and their husbands but that data was not available, and neither was data on same-sex couples.

Since women on average receive the majority of college degrees, it would be expected that women would have, on average, more education than men. However, this is not the case. Men and women, in this sample, were equally educated. This could show that this sample is not representative of the population of the United States, or that the data outweighed higher degrees which could have caused the data to show that, on average, men and women were equally educated, when there may have just been more

men with higher degrees and more years of education which would have skewed the results for men higher.

The data did not include a race variable. The literature used in this study largely focuses on the gender wage gap overall, which focuses mainly on those who identify as white. If there were a way to control for race, this model could have had a higher and more impactful explanatory power.

Since Women in Legislation has not yet been included in a study for cultural acceptance, the results are unknown. This is both some of the added value of this paper, but also a concern that this measure is not adequate. Women running for legislative office may not be the best measurement of cultural acceptance of women since men and women do not run for public office in the same amounts, with many people running for public offices being men.

Discussion:

To test the hypothesis of the wage function's explanatory power increases with the introduction of social control variables, stated above in the data and methods section, men and women have been separated to evaluate the impact of education, experience, and social factors on each gender. Further, the sample was tested with a log of the y dependent variable of wages to both increase the accuracy of the model and to accurately represent the mincer model equation.

OLS regressions were run and the results are shown below in tables one and two below show the results that various economic and social factors have on the wages of men and women. In table one, the four models interpret the impact of the social factors

on the model. Below in table two shoes the model without social controls, and you can see that for male household heads, the R-Square value is increased from 0.1095 in the model with only economic variables to 0.1162 with the introduction of social variables in 2009, and from 0.1027 in the model with economic variables to 0.1072 in the model with social controls in 2013. Whereas, you can see in table one that for wives the R-Squared value decreased from 0.1023 in the model with only economic variables to 0.0699 in the model with social control variables in 2009 and from 0.0898 in the model with only economic variables to 0.0637 in the model with social control variables in 2013.showing that the explanatory power of the model, which includes the social factors, decreased, even though the social factors are somewhat statistically significant.

Robustness checks were conducted to endure no heteroscedasticity nor multicollinearity in the models. The tests came back without and concern for either issue, therefore they will not be included any further. Variance Inflation Factor (VIF) tests were conducted to test for multicollinearity in the model, see table 4. No multicollinearity issues were found. Then to test for heteroscedasticity, the Breusch-Pagan / Cook-Weisberg tests were run, resulting in chi squared terms which were low showing no heteroscedasticity, see table 5.

Table 1 shows the results for each of the models MS and WS in both years 2009 and 2013. It is worth noting that the percentage of women in legislation was only significant for the wages of male heads of households. It is curious that this number is positive, as it was expected to be negative. This was expected since it would logically make sense that if more women were involved in government policy decisions they would see to their best interests being met. However, this ideology clearly is flawed as

increasing the number of women in legislation, decreased women's wages. The coefficients for both 2009 and 2013 were small, both being less than one showing that the impact is minimal. Also, since this was not a statistically significant variable for women, even though there is a negative relationship, the impact is likely non-influential on real wages. This data shows that the percentage of women in legislation has a positive effect on men's wages, whereas it has a minimal and not statistically significant impact on women's wages.

One curious result is how in models MS and WS, shown in table one, have opposite significance of social factors depending on the gender. For men, the pay secrecy laws negatively affect their wages, but it is not statistically significant whereas the percent of women in legislature positively affects male heads of households' wages. On the contrary, in the 2013 model 4 for wives, the percent of women in legislation had a negative effect on their wages, which was the opposite of the expected result. It was hypothesized that having women in legislation would cause a positive increase to women's wages as there would be women in the government who would be advocating for pay equality for women, although this was shown to be not statistically significant.

However, pay secrecy laws were minimally statistically significant in 2013 for women. It was expected that if pay secrecy laws were illegal, they would positive affect women's wages, as women are more likely to be negatively affected by pay secrecy laws (Kim, 2015). These laws being illegal causes employers to have increased awareness of the discrimination that may be present in their companies, although it was found that these results were not statistically significant for men, nor women in 2009.

These results are different than expected, and a bit puzzling. It is interesting that an increase in the number of women in legislation would have a negative impact on women's wages, yet have a positive impact on men's and that pay secrecy would have a negative impact on men, but a positive impact on women. However, authors from previous literature feel as though the effects from pay secrecy laws are normal (Kim, 2015). Kim finds that women's wages do increase when pay secrecy laws are outlawed. Logically, it may make sense that men's wages decrease since now, employers must be more aware that their employees can discuss their wages freely at work, so when men get wage increases, this may also require the employer to be able to increase the wages of women in the same position.

It is particularly interesting that for men, education is either non-significant or the lowest level of significance. This would indicate that men make more money even if they have low experience and that their experience level does not translate to their wage as much as women. Also, the coefficients are very small, meaning that for every 1% increase in a wage, the individual is likely to have 0.002 or 0.003 more years of experience. This means that experience for men is not as important when understanding their wage. In contrast, experience measured by the years a wife has worked since 18 is very significant with the highest level of significance. Similar to male heads of households, as a women's wage increases by 1%, the experience they have only increase by 0.016 or 0.018 in 2009 and 2013 respectively, however it is worth noting the difference between the importance of experience for men and women. This can be related back to the embeddedness of social culture that men are the workers and wives are caretakers (Fetterolf and Rudman, 2014) (Mencarini and Maria, 2010). Men do not need

nearly the amount of experience as women to increase their wage. Men and women have different standards for the skills they must have prior to being hired (Blau et al., 2000). Women are required to have more skills and previous experience than their male counter parts (Blau et al., 2000). However, over time (from 2009 to 2013) amount of experience needed to raise an individual's wage increased which results in a slow shift towards increase need for experience for more experience and specialization in today's job market.

Education for both men and women in both 2009 and 2013 is highly statistically significant. This shows that education is a large factor when evaluating wage, consistent with Mincer's findings. However, to increase the wage of a wife by 1% more, they need more education than their male heads. This can be seen by the larger coefficient in 2009, although in 2013 men and women's education coefficient is the same meaning that they need the same increase in education to receive 1% more wage. This shows that Mincer's 1958 paper was incorrect in assuming that all education increases wage, but rather than only sometimes an increase in years of education may increase wage.

Table 2 represents the results of models without social control variables of Women in Legislation[7] and Pay Secrecy laws outlawed[8]. It is curious that the R-Squared values for both 2009 and 2013 increase for male heads with the introduction of social variables, however, the wife R-Squared values in both 2009 and 2013 decrease. The conclusion can be drawn that in fact, the social variables only help with the strength of the model for male heads, whereas the introduction of social control variables decreases

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[7] The percent of women in legislative positions by state
[8] A dummy variable for if pay secrecy laws are illegal

the strength of the model, which is curious since Kim (2015) and Colella et al (2007) discusses the negative impacts they believed pay secrecy would have on wages.

It is interesting to note the differences in men's and women's wages. Table 3 shows summary statistics of the data, but wages are most curious. Both men's and women's wages only slightly increase, but the standard deviations are quite different. Male household heads have a standard deviation in 2009 of over $90,000 increasing to a standard deviation of over $111,000 in 2013. This increase in deviation one may think would be consistent among both men and women, however women's standard deviations grow from a meager $34,600 to just under $35,000. These differences may be worth noting that not only are women getting paid less, but there is a much lower range that most women are making with fewer high outliers.

It is worth noting the relationship between the head's income and the sex and education of the head. Table 3 shows the summary statistics of the difference between men and women heads of households and their pay and education differences. Mean income for both head and wife have increased from 2009 and 2013. It is worth noting that mean education is slightly higher for women in both 2009 and 2013, as this may also affect increased wages in that year since education and wage have a positive relationship (Mincer, 1958).

It is concluded that the explanatory of the model with male heads of households wages are impacted by social characteristics was improved, whereas the model with wife's wages was not improved by the introduction of social variables.

Potential Error

This model could have had some error as there were more males in the sample than females, potentially skewing results since females did not have a representative sample size. Also, this dataset did not include any husband variables if the head of the house was female. Female heads of households may have changed the impact of these variables although there was no way to change the data to include the female heads of household with the other wife categories. The omitted variables could also lead to selection bias. The data was only split by gender by household head and wife, and in order to keep the household head variable the male variable, I had to drop all households with female heads. This, could have caused some selection bias as households with female heads may be different than households with male heads. This could also have affected the summary statistics of male and female wages. If female heads have different characteristics than female wives, those differences would not be shown in this data.

This model also had some potential for endogeneity as some observations may have been accidentally omitted, causing inaccurate data. While cleaning the PSID data some values would both mean that the participant in the survey did not answer, or that they actually were assigned a given value. In order to control for inaccurate skew, these variables were dropped, although this means that there are some omitted observations which could cause a bit of endogeneity.

Wage is very complex and requires many variables to accurately understand it. However, including all necessary control variables was beyond the scope of this paper, therefore, the model lacked high R-Squared values. Lacking the necessary variables

which explain a wage causes omitted variable bias, which can be seen in the low R-Squared values achieved by the model at hand.

Conclusion

This paper aims to understand if the neoclassical wage function of the mincer equation failed to accurately interpret the gender wage due to lack of interaction terms to explain society. The hypothesis that social variables increase the accuracy of this papers interpretation of the wage function fails to be rejected for male household heads. This was seen by the increase of the R-Squared value by just 1%. Although it did increase the R-Squared value, it shows that social variables do not have much of an impact on economic models, even if social variables are statistically significant.

It is especially curious that the social factors negatively impacted one of the models, however, the understanding behind that is beyond the scope of this research.

The hypothesis that social factors increase the accuracy of this papers interpretation of the wage function fails to be rejected as the R-Squared value decreased when social variables were introduced into the model. This also shows that social factors do not increase the effectiveness of economic models, and that in fact, they decreased the accuracy of the model, even though some of the variables were statistically significant. This could be due to omitted variable bias inherent in research of this scale. Wages are complex with many variables needed to accurately explain it. As seen in the low R-Squared value, there is likely many variables missing, leading to omitted variable bias.

Overall, this shows that the inclusion of social factors does have some validity as the social factors were often statistically significant within both models A and B.

However, even though these were statistically significant, it shows that they may not add to the explanatory power of the model.

Some policy implications that could be made are that pay secrecy laws should be outlawed among every state. This would allow co-workers to freely discuss their salaries in order to accurately understand their wages in a larger perspective and know if they are being fairly compensated by their firm. These also infringe on the rights of workers not allowing them to discuss whatever they please with their co-workers.

Further Research

This was the first research done which analyzed the gender wage gap by using the social factors of pay secrecy laws and the percent of women in legislation, however more accurate measures could have been taken to include social variables. If there were less time limitations, it would be interesting to explore the perception of women in society by google search data by finding terms which could show how people view women. Google trend data has been proven to be more accurate than survey data as people do not lie as they might in surveys not realizing that Google monitors their searches (Stephens-Davidowitz, 2014). This new research technique could allow for a better understanding of how women are perceived and how they interact with the economy.

Further research could also look at households with female heads and spouses of the same sex. PSID limits the dataset just to "household head" and "wife" for their family level data leaving many interesting household characteristics to be dropped while trying to control for gender. Households with female heads and same sex couples could add interesting information for how they interact differently as lesbian women often make more than straight women (Martell and Roncolato, 2016).

Graphs:

Graph 1:

Gender Wage Gap Over Time
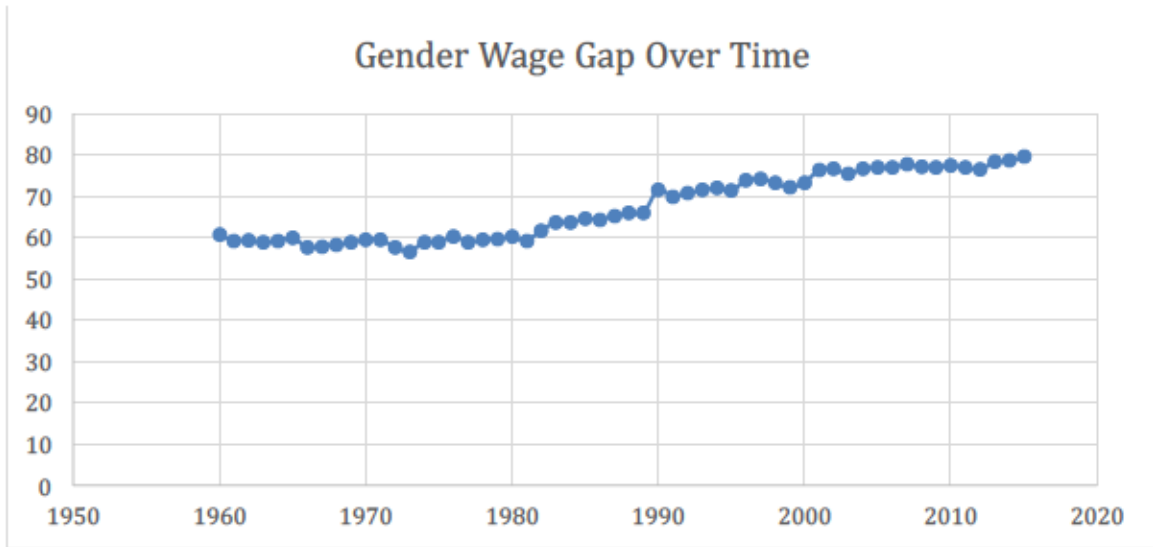
Tables:

Table1: Models MS and WS Results: Economic and Sociologic Variables

Variable	Model 1 MS	Model 2 WS	Model 3 MS	Model 4 WS
Education of Head	0.139***		0.151***	
	(0.005)		(0.006)	
Years Worked in 18 Head	0.002		0.003*	
	(0.001)		(0.002)	
Education Wife		0.160***		0.151***
		(0.011)		(0.011)
Years Worked Since 18 Wife		0.016***		0.018***
		(0.003)		(0.003)
Percent of Women in Legislation	1.468***	-0.156	1.436***	-0.211
	(0.223)	(0.467)	(0.255)	(0.473)
Pay Secrecy Laws Illegal	0.003	-0.010	-0.024	0.129*
	(0.035)	(0.070)	(0.037)	(0.068)
Constant	8.104***	7.809***	7.872***	7.862***
	(0.085)	(0.192)	(0.096)	(0.197)
Year	2009	2009	2013	2013
Individual	Male Head	Wife	Male Head	Wife
R2	0.1162	0.0699	0.1072	0.0637
Adjusted R2	0.1156	0.0686	0.1067	0.0624
N	6,263	2,898	6,329	2,875

All standard errors are in parentheses

* indicates significance at the 90% level of significance

** indicates significance at the 95% level of significance

*** indicates significance at the 99% level of significance

Table2: Economic Variable Results

Variable	Model ME	Model WE	Model ME	Model WE
Education of Head	0.143***		0.155***	
	(0.005)		(0.006)	
Years Worked in 18 Head	0.002		0.003**	
	(0.001)		(0.002)	
Education Wife		0.155***		0.153***
		(0.009)		(0.009)
Years Worked Since 18 Wife		0.012***		0.013***
		(0.003)		(0.003)
Constant	8.399***	7.760***	8.146***	7.752***
	(0.074)	(0.129)	(0.082)	(0.140)
Year	2009	2009	2013	2013
Individual	Male Head	Wife	Male Head	Wife
R2	0.1095	0.1023	0.1027	0.0898
Adjusted R2	0.1092	0.1016	0.1024	0.0892
N	6,327	2,850	6,404	2,844

All standard errors are in parentheses

* indicates significance at the 90% level of significance

** indicates significance at the 95% level of significance

*** indicates significance at the 99% level of significance

Table 3: Summary Statistics

Variable	Observations	Mean	Standard Deviation	Year
Salary of Wife	3,172	35357.3	34607.07	2009
Income of Household Head (Male)	6,873	48903.79	90257.63	2009
Education Wife	4,579	13.65	2.48	2009
Education Head	8,516	13.24	2.54	2009
Years worked since 18 - Wife	4,112	11.487	8.62	2009
Years worked since 18 - Head	7,970	14.175	11.05	2009
Salary of Wife	3,151	36876	36945.11	2013
Income of Household Head (Male)	6,861	49524	116466.6	2013
Education Wife	4,540	13.85	2.481	2013
Education Head	9,931	13.35	2.474	2013
Years worked since 18 - Wife	4,107	11.11	8.39	2013
Years worked since 18 - Head	8372	13.36	10.65	2013

Table 4: Variance Inflation Factor (VIF) Results		
Year	**Individual**	**Mean VIF**
2009	Male Head	1.13*
2009	Wife	1.13*
2013	Male Head	1.10*
2013	Wife	1.09*

* indicates all variables were +/- 0.2 from the mean

Table 5: Heteroscedasticity Results			
Year	**Individual**	**Chi Squared**	**Prob > chi Squared**
2009	Male Head	4.82	0.0282
2009	Wife	0.08	0.7726
2013	Male Head	4.06	0.0439
2013	Wife	1.19	0.2752

References:

2015. "Labor thinktank says party conference must address nations's rising inequality; Exclusive: increasing structural inequality and gender pay gap put a drag on economic growth, says Chifley Research Centre." *The Guardian (London, England)*, 2015. *Academic OneFile*, EBSCO*host* (accessed March 1, 2017).

AAUW Economic Justice. "The Simple Truth about the Gender Pay Gap", 2017. http://www.aauw.org/research/the-simple-truth-about-the-gender-pay-gap/

Auspurg, Katrin, Thomas Hinz, and Carsten Sauer. 2017. "Why should Women Get Less? Evidence on the Gender Pay Gap from Multifactorial Survey Experiments." *American Sociological Review* 82 (1): 179-210.

Blau, Francine D. and Lawrence M. Kahn. "Gender Differences in Pay." *The Journal of Economic Perspectives* 14(4): 75-99.

Bowlus, Audra J. 1997. "A Search Interpretation of Male-Female Wage Differentials." *Journal of Labor Economics* 15 (4): 625-657.

Colella, Adrienne, Ramona L. Paetzold, Asghar Zardkoohi, and Michael J. Wesson. 2007. "Exposing Pay Secrecy." *Academy of Management Review* 32 (1): 55-71.

Curry, George N. 2005. "Doing 'Business' in Papua New Guinea: The Social Embeddedness of Small Business Enterprises." *Journal of Small Business and Entrepreneurship* 18 (2): 231-246.

England, Paula, George Farkas, and Margaret Barton. 1988. "Structural Effects on Wages: Sociological and Economic Views." In , edited by George Farkas and Paula England, 93-112: With a foreword by Michael Piore; Plenum Studies in Work and Industry series; New York and London:; Plenum Press.

Fetterolf, Janell C., Laurie A. Rudman (2014). "Gender and Sexual Economics: Do Women View Sex as a Female Commodity?" *Psychological Science (0956-7976)* 25 (7): 1438-1447.

Garcia, Nagore (2017). Gender Differences in Unemployment Dynamics and Initial Wages over the Business Cycle. (LISER Working Paper) Luxembourg. Institute of Socio Economic Research.

Girón, A., & Correa, E. (2016). Post-Crisis Gender Gaps: Women Workers and Employment Precariousness. *Journal of Economic Issues*, *50*(2), 471-477.

Hirsch, Boris and Claus Schnabel. 2012. "Women Move Differently: Job Separations and Gender." *Journal of Labor Research* 33 (4): 417-442.

Hunt, Jennifer. 2002. "The Transition in East Germany: When is a Ten-Point Fall in the Gender Wage Gap Bad News?" *Journal of Labor Economics* 20 (1): 148-169.

Keith, Kristen and Abagail McWilliams. 1999. "The Returns to Mobility and Job Search by Gender." *Industrial and Labor Relations Review* 52 (3): 460-477.

Kim, Marlene (2015). "Pay Secrecy and the Gender Wage Gap in the United States." *Industrial Relations* 54 (4): 648-667.

Kim, Marlene (2013). "Policies to End the Gender Wage Gap in the United States." *Review of Radical Political Economics* 45 (3): 278-283.

Martell, M., & Roncolato, L. (2016). The Homosexual Lifestyle: Time use in Same-Sex Households. *Journal of Demographic Economics*, 82(4), 365-398.

McGee, Andrew, Peter McGee, and Jessica Pan. 2015. "Performance Pay, Competitiveness, and the Gender Wage Gap: Evidence from the United States." *Economics Letters* 128: 35-38.

Mencarinin, Litizia, and Maria Sironi (November, 2010). "Happiness, Housework and Gender Inequality in Europe." *European Sociological Review*. 28(2): 203-219.

Miller, Julie. 2016. "Gender Pay Gaps are not Petty Issues." *Behavioral Healthcare* 36 (1): 6.

Mincer, Jacob (1958). Investment in human capital and personal income distribution. *The Journal of Political Economy, 66*(4), 281-302.

"The Wage Gap Over Time: In Real Dollars, Women See a Continuing Gap." National Committee on Pay Equity. Accessed at: https://www.pay-equity.org/info-time.html

National Conference of State Legislations. http://www.ncsl.org/legislators-staff/legislators/womens-legislative-network/women-in-state-legislatures-2011.aspx

Norris, Pippa. 1985. "Women's Legislative Participation in Western Europe." *West European Politics* 8 (4): 90-101.

"Panel Study of Income Dynamics". Accessed at: https://simba.isr.umich.edu/data/data.aspx

Parsons, T. and Smelser, N. (2005). *Economy and Society: A study in the integration of economic and social theory.* Routledge.

Sandberg, Sheryl (2010). Why we have too few women leaders. *TED.*

Social construct. Dictionary.com. *Dictionary.com's 21st Centrury Lexicon.* Dictionary.com, LLC. http://www.dictionary.com/browse/social-construct (accessed: Februry 24, 2017).

Stephens-Davidowitz, S. (2014). The cost of racial animus on a black candidate: Evidence using Google search data. *Journal of Public Economics*. 118. 26-40

"University of Texas Inequality Project." University of Texas Inequality Project http://utip.gov.utexas.edu/data.html