

**THE CULTURE OF CONSERVATIVE PROTESTANTISM AND INCOME INEQUALITY:
A MULTILEVEL ANALYSIS**

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the form
requirements for the degree of
Master of Arts

In

The Department of Sociology

by

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B.A. Louisiana State University, 2004
August 2008

Acknowledgements

I thank my advisor, Mariano Sana, for his proficient and steadfast guidance throughout this process. I also thank Troy Blanchard and Jack Beggs for their substantial contributions as members of my committee. I thank all three for their input; their contributions to both my academic development and this paper are invaluable.

I am also thankful to all of my friends in the LSU Department of Sociology. Your support and kind words kept me going through a lot of this. Finally, I also thank my parents Craig and Anita Gremillion for their support. It's not always easy to support someone in all situations, especially when they don't make it easy to be supportive.

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Abstract

Despite major advances in equality of rights, women still earn less money than men. Social science researchers see sex-based income inequality as an issue of discrimination. While the problem has been identified, its causes are a matter of debate. In this study I offer one possible influence on this discrimination. I theorize that conservative Protestant culture has a strong effect on local norms and business practices. Those norms are a part of the institutional environment, and manifest themselves as allocative and valuative discrimination, keeping women out of high paying jobs or paying women in high skilled jobs less than men in similarly skilled positions. I test my theory using Hierarchical Linear Modeling techniques and data from the U.S. Census and the Association of Religious Data Archives. My results show a significant association between the proportion of the population that belongs to conservative Protestant congregations and the sex-wage gap. However, the amounts involved are relatively small.

Chapter 1: Introduction

While many view sex inequality as a thing of the past, it is still a major problem in the United States. Sex inequality manifests itself in many forms; however it is seen most easily in the labor market outcomes of women. Social science research has consistently shown a sex based wage gap in the United States (Corcoran and Duncan 1979; Blau and Kahn 1997; Alksnis, Desmarais et al. 2008). Early scholars believed women were intentionally paid less than men while doing the same jobs, but equal opportunity laws and federally mandated hiring policies have ended those practices. The sex-wage gap is still present however, and women are under-represented in high wage jobs and make less money than men while doing jobs that require the same accreditation and skills (Daily, Certo et al. 1999; Cotter, Hermsen et al. 2001; Kunze 2005; Alksnis, Desmarais et al. 2008).

Two types of sex discrimination, allocative and valuative, are the most common forms of workplace sex discrimination seen today (Hartmann and Triemann 1981). However, they only describe two forms of sex discrimination and do not offer any insight into the influences of discrimination. Some issues of sex discrimination, such as traditionalist beliefs that women are responsible for nurturing activities and men for bread-winning, are cultural (Ellison and Bartkowski 2002). This is evidenced in the dual workload of family and career that many women take on. To compensate for the increased workload women are forced to either work part time or choose between family and career. (Manning and Petrongolo 2006; Bardasi and Gornick 2008). Some cultures, specifically conservative Protestants, have shown a tendency towards sex inequality (Ellison and Bartkowski 2002; Fram 2006).

Religion itself is a strong social integrating factor, helping to bind communities, establish belief systems and influence social networks (Ellison and George 1994; Emerson 2000; Durkheim 2001; Brewer, Kersh et al. 2003; Wunthrow 2004; Beyerlein 2005; Beyerlein 2006). Given that sex discrimination is so pervasive in everyday-life and that religion is a strong cultural power, it seems plausible discrimination could have an effect on labor market outcomes. Research into the labor market has shown institutional effects on labor market processes. Environments with existing levels of institutional inequality will bring those factors over into the labor market through those areas culturally-based norms (Beggs 1995).

My research looks to answer one major question—what role does religious culture play in the sex-wage gap? More specifically, do communities with larger populations of conservative Protestants have a higher sex-wage gap. My analysis uses multilevel regression techniques with data from the Association of Religious Data Archives and the US Census to examine the role of religious culture on the sex-wage gap.

Chapter 2: Review of Literature

2.1 Theoretical Framework

Previous sociological research has shown conservative Protestant congregations to be isolated from the larger community (Blanchard 2007) and to derive their concepts of sex roles largely from scripture, and literature produced specifically for the conservative Protestant community. This literature often features essentialist themes which argue for a divided sex structure in which women are considered weaker than and subservient to men. (Cooper 1974; LaHaye 1977; Dobson 1991). In the work force this means that women should only perform certain types of jobs and should mainly concern themselves with domestic activities. Empirical research corroborates this, showing conservative Protestant women performing four times more household labor than their husbands compared to mainline Protestant and Catholic couples (Ellison and Bartkowski 2002).

The scope of conservative Protestant influence may extend outside the home and into the community at large. Social science researchers have posited religion as a key integrating factor into the social environment (Ellison and George 1994). Recent academic work has shown religion is a strong factor in communities and functions as both form of bridging and bonding social capital (Beyerlein 2006). Because evangelical congregations tend to create social capital that is bonding and not bridging, they are deeply tied into the conservative Protestant culture and primarily associate with people who are like-minded, thus reinforcing their beliefs (Altemeyer and Hunsberger 1992; Emerson, Smith et al. 1999; Emerson 2000; Altemeyer 2003).

The social mechanisms present in conservative Protestantism may instill and foster essentialist concepts of sex inequality, which are firmly rooted in scripture and reinforced

through conservative Protestant produced literature, possibly creating a culture inclined to sex inequality. A culture's disposition towards inequality is integrated into the labor force through the system of norms and attitudes that these cultures can foster. Institutions are created and operate within the system of norms defined by culture, and as such those same norms can be integrated into the structure of the institution (Selznick 1948, Parcel 1985, Beggs 1995).

However, these norms do not come into the institution through processes of osmosis. On the contrary, the decision to discriminate may be a rational one that is born of the surrounding area's influence. For businesses to thrive in a market that is instilled with inequality, they themselves must adhere to the normative structure of the area. Their potential work force and customer base will have the same normative influences and be prone to the same inequalities, thus they must appeal to the local tastes to survive (Beggs 1995). The strong ties and social influence of conservative Protestants may spread these concepts of inequality through the local area, instilling it into the normative structure and creating a labor market area with built-in inclinations towards sex inequality manifested in the labor market outcomes of women.

Sociological research into the discrimination-based sex wage gap has remained focus on both the individual attainment of women and also on firm-level discrimination and interactions. While researchers have explored the overall effect of the local environment on discrimination, specific cultural influences are left unidentified. My research looks to expand the body of knowledge on culture's effect on labor market outcomes and determine the role conservative Protestant doctrine, through its number of adherents, may have in limiting the success that women may achieve in the labor market.

2.2 Previous Literature

2.2.1 Sex Wage Inequality

In the United States, social science researchers have found that women have consistently earned less income in wages than men. The magnitude of this gap has fluctuated throughout the latter half of the 20th century, although overall it has decreased dramatically, and today women are closer to making equal wages with men (O'Neill and Solomon 1993). During the 1960s and most of the 1970s the gap remained stagnant at around 60 percent, meaning that women's weekly median income was only 60 percent of the median weekly income for men. In the late 1970's the gap began to decrease and by 1993 women were earning 77 percent of what men earned. During the middle of the 1990s the sex-wage gap increased to a decade high of 74 percent before consistently shrinking for the remainder of the decade. By the end of 2005 the gap reached an all time low of 81 percent (US Bureau of Labor Statistics 2006).

The decrease in the sex wage gap is primarily seen as a result of individual level factors. Increases in women's levels of work experience and also the acquisition of skills that increase the quality of women's work experience have been major factors in this increase. Women's levels of labor market experience grew drastically in the 1980s, increasing their value on the labor market compared to males (O'Neil and Polacheck 1993 ; Wellington 1993). The past 30 years have seen great improvement in the level of female skills relative to men. Skill increases have come primarily from large scale improvements in women's educational attainment. The number of women receiving higher education degrees has increased steadily since the 1960's, which has led to decreases in occupational segregation (Blau 1996).

2.2.2 Sex Discrimination and Wages

While women have made great strides to increase the individual characteristics that will affect their labor market outcomes, increases in these factors do not account for the role of discrimination in the wage gap. The effects of sex discrimination on the wage gap are important because they are beyond the scope of individual characteristics: regardless of what women do to increase their own skills and experience levels, their wages may be affected by the attitudes and decisions of their employer.

Most researchers do not see the role of discrimination in the sex wage gap as a concerted effort to pay women less. On the contrary, many see this discrimination as a the routing of women into jobs that pay lower wages. This form of discrimination is commonly referred to as allocative discrimination (Petersen and Morgan 1995). Through allocative discrimination women are denied access to jobs and promotions that pay as well or better than the wages men make. Trieman and Hartman (1981) were able to predict roughly 35 to 40 percent of the wage gap through occupational distribution. Hultin and Szulkin (1999) found female access to high-paying jobs was limited by the sex makeup of the management at their firm.

Allocative discrimination is not the sole form of sex discrimination that affects the sex wage gap. Another form of discrimination, valuative discrimination is also commonly proposed as a major mechanism in sex wage discrimination. Through valuative discrimination, the jobs primarily performed by women are paid much less than those primarily performed by men (Petersen and Morgan 1995). Sex segregation among occupations is widely recognized and

highly pervasive, though it alone cannot explain the majority of the sex wage gap (Baron and Bielby 1984).

A third form of sex-wage discrimination is within-occupation discrimination. This is primarily seen as women in both the same job and same establishment as men receiving less pay. Recent research finds this type of discrimination as less prevalent than allocative and valuative discrimination, and also shows it accounting for less of the sex-wage gap (Petersen and Morgan 1995). Researchers have increasingly placed emphasis on the allocative and valuative forms of wage discrimination as the strongest factors in the discrimination based sex wage gap (Hartmann and Triemann 1981; Petersen and Morgan 1995)

2.2.3 Religion and Community

Social scientists have long seen religion as a major part of community formation and attachment. Emile Durkheim's seminal work *Suicide* used religious affiliation as the central means of social integration and a strong deterrent against suicide. Max Weber's *Protestant Work Ethic and the Spirit of Capitalism* showed religion as a cultural mechanism—Calvinism promoted norms in society that led the spread capitalism, albeit unintentionally. Modern research has altered perceptions of the role religion plays in community and specific mechanisms are now more defined.

Religious congregations overall encourage civic engagement and activity in the outside community. Many advise their members to enter the community through their sermons and official teachings (Brewer, Kersh et al. 2003; Wunthrow 2004). Religious leaders often use their position on the pulpit to encourage community members to civic duty, increasing efficacy and feelings of good will, which can often lead to community involvement (Cavendish 2001).

Congregations also offer opportunities for building social networks through the creation of friendship ties (Brady, Verba et al. 1995). Overall religious activity increases social networks and civic engagement; however the direct effects vary between denominational types.

Mainline Protestant and Catholic groups tend to expand a their members role in the community, as they are more apt to involve themselves with groups bridging them with people outside of their congregation (Beyerlein 2006). Conservative Protestants show a different kind of social bonding and tend to develop strong ties within their congregation and lesser ties with outside groups. When conservative groups do venture into the outside community, their goal is usually to gather funds or to convert new members to the congregation (Emerson, Smith et al. 1999). Conservative Protestants do not form large communities with the outside world, but they do demonstrate strong bonds between members of the same congregation (Beyerlein 2006). Furthermore any new members brought into the congregation are most likely brought in as fully indoctrinated members (Beyerlein 2005). Any expansion into the outside community would actually be to increase or strengthen the congregation's size and role in the community. People who live in communities with large percentages of conservative Protestants are likely to have a strong ideological bond and to share many of the same beliefs and practices.

2.2.4 Conservative Protestantism

Traditionally, social science research has placed conservative Protestantism in the same category as mainline Protestantism. Recently, scholars have argued for a different interpretation of religious affiliation, placing conservative Protestants in their own distinct category (Beyerlein 2006) . This new distinction seems appropriate as conservative Protestants are not theologically identical to their mainline counterparts (Ellison and Bartkowski 2002;

Blanchard 2007). Conservative Protestants also have different social characteristics and are more socially disconnected than mainline Protestants and Catholics (Wilson 1995). As a result, conservative Protestant congregations feature closed social networks and a focus on within-group ties, leading to a lack of bridging social connections and an increasingly isolated environment (Altemeyer and Hunsberger 1992; Emerson, Smith et al. 1999; Emerson 2000; Altemeyer 2003). This isolated environment serves to reinforce the traditionalist beliefs of conservative Protestants and does not allow for ties with the larger community (Blanchard 2007).

2.2.5 Sex in Conservative Protestantism

Sociological research has provided an adequate examination into the motivations or sources of conservative Protestantism. Holy books and scriptures cannot provide an accurate measure because they are interpreted to the congregations and do not contain the specific message broadcast to the congregation (Ellison and Bartkowski 2002). Documents produced for and disseminated to the conservative Protestant community do not formulate an effective assessment of their sex and family attitudes either. These documents are widely circulated, but only indicate the intent of their creator and cannot establish a causal relationship between their contents and the practices of specific conservative Protestant congregations (Ellison and Bartkowski 2002). The documents are widely used however, and can provide insight into the general worldview of conservative Protestants.

Ellison and Bartkowski (2002) analyzed the primary source materials of conservative Protestants. These materials consisted primarily of popular press books and pamphlets. The goal of their study was to establish a baseline measure of the conservative Protestant

worldview. They found contemporary conservative Protestantism to be strongly characterized by deference to the authority of Biblical scripture. From the source materials they determined that most conservative Protestants view the scripture as sufficient guides to family life and a basis for the conceptualization of sex roles.

The source materials define a culture guided by scripture. Because the scriptures are rarely used literally, they are interpretive texts and thus social products (Fish 1980; Boon 1989). Those subscribing to these social products are themselves interpretive communities. Members of these communities often share both a basic system of beliefs and a normative structure organizing both the reading and interpretation of the canonical works of their faith (Boon 1989; Bartkowski 1996; Ellison and Bartkowski 2002). My analysis will focus on the traditionalist view of gender and family as held by conservative Protestant groups as defined by Ellison and Bartkowski (2002).

Traditionalism bases its concept of gender on two points: essentialism and patriarchal domestic authority. Essentialism views masculinity and femininity as two distinct and exclusive classifications, with male and females playing mutually exclusive roles (Ellison and Bartkowski 2002). Patriarchal domestic authority posits male leadership, namely the husband, has been given decision-making authority in the home by God. Masculine traits (logic, strength, and assertiveness) make them ideal to lead (Cooper 1974; LaHaye 1977; Dobson 1991). Feminine traits (psychological responsiveness and vulnerability) place women as best suited to defer to male authority and confined to the domestic tasks such as raising children. (Elliot 1976; LaHaye 1977; Dillow 1986).

2.2.6 Institutional Environments and Labor Markets

Selznick (1948) argues that the cultural norms of society are reflected within the institutions created in that culture. Parcel (1979) linked regional race segregation to the wage outcomes of African Americans. In her research Parcel showed local levels of racial segregation affected the wage outcomes of workers in the regional area. Tolbert (1985) argued that institutions legitimize behavior that occurs within the culture as functional and rational organizational practices. These legitimized practices and rationalized norms make up the environment that operates within a given institution. Building on that framework, Beggs (1995) used data from the US Census and multiple regression techniques to examine the effect of the local culture on wage outcomes. Beggs found that organizations located in areas that displayed characteristics of high equal opportunity had lower levels of race and sex inequality in the labor market. So the egalitarian characteristics of the local area carried over into the organization. The mechanism for this transfer of inequality was the local environment itself. For organizations to thrive in their local area, they must adopt the characteristics of that area. Their customer and employee base will be derived from that area, therefore to appeal to that base; they must adopt the cultural characteristics of their area (Beggs 1995). Here Beggs provides the mechanism through which cultural norms spread through to the labor market outcomes.

2.3 Hypothesis

Research has shown religious factors influencing community building and community attachment. Conservative Protestants in particular show strong bonds based in the mutual acknowledgement of interpreted scripture and commonly held social norms. The source materials and original texts distributed by many conservative Protestants have also shown a

tendency towards sex inequality. Because the texts are interpreted to entire congregations and these congregations display strong bonds, conservative Protestant culture may be pre-disposed to sex inequality. Communities as large and well bonded as these conservative Protestants could thereby have an effect on the local labor market and its sex-wage gap. Current research has gone a long way to explain the sex-wage gap, but still relies heavily on individual characteristics and does not completely take into account the effect of local culture. My research expands the current body of knowledge by testing the mediating effects of conservative Protestant culture on the sex-wage gap.

After reviewing the currently published literature I propose the following hypothesis:

Because conservative Protestants have strong bonds based in shared scripture interpretation, their shared values should transfer into social norms that construct the institutional environment of their labor market area. I expect this will manifest itself in an increased sex-wage gap in areas with higher concentrations of conservative Protestants.

Chapter 3: Methodology

3.1 Data

3.1.1 Individual Level

Individual level data for my analysis come from the 5 percent file of the 2000 U.S. Census Public Use Micro Samples (PUMS). Prior to analysis I excluded from the sample all individuals younger than 25 and older than 64; those younger than 25 may still be in college and individuals over 64 may be retired so their occupations and sources of income may not be as steady as the general population. I also excluded individuals who in 1999 worked less than two weeks and less than an average of 4 hours per week to eliminate any effects that may be caused by the transient labor population. Data on race, sex, wages, residence, occupation, and fertility are taken from these files.

3.1.2 PUMA Level

PUMA-level data are taken from the Association of Religious Data Archives (THEARDA) 2000 Religious Congregations and Membership Study. The study contains data for 149 religious bodies on the number of congregations represented within each PUMA in the United States. These data were also initially sorted by the FIPs code, but in order to merge the data with the individual level PUMS data, they were later attached by the State Public Use Microdata Area (State PUMA) code. PUMAs are groupings of counties contained within the boundaries of a single state. Each state may have more than one state PUMA and each State PUMA may contain more than one county. Data on rates of adherence in each of four major religious denominations categories (mainline Protestants, conservative Protestants, Catholics and other religions) will be taken from this file. Additional county level data on employment and total

county population size were taken from the 2000 U.S. Decennial Census Counties files. As with the other county data, these were summed to the PUMA level.

3.2 Measures

3.2.1 Individual Level

Table 1 lists the descriptive statistics of my data. The outcome variable for my analysis is the hourly wage earned by an individual in 1999. Because the PUMS does not include a variable specifically listing the hourly wage of individuals, I calculated the wage variable by dividing the overall wages earned in a year by the product of the number of weeks worked per year and the averaged number of hours worked per week. The hourly wage measure was chosen because some individuals may not work the entire year, but still earn a wage. The individual level independent variables are as follows.

Females are used as a measure in the analysis and males as their reference. Women made up around 47 percent of the sample. The marital status measures consisted of categories for separated/divorced and never married. In the regression analysis, individuals who are currently married served as the reference. Almost two thirds of the sample was married, 17 percent were separated or divorced, and 16 percent were single.

Race is divided into the following categories: non-Hispanic white, non-Hispanic black, non-Hispanic other and Hispanic; non-Hispanic white served as the reference category. Over 80 percent of the sample was white, 10 percent black, 5 percent other, and 5 percent Hispanic. Educational attainment was divided into a series of academic milestones. The categories are high school diploma, some college, college degree and advanced degree.

Table 1: Descriptive Statistics

| Variable | Mean | Min | Max | SD |
|---------------------------|-------|--------|----------|--------|
| Second Level | | | | |
| Conservative Protestant | 14.14 | 0.63 | 62.73 | 12.19 |
| Mainline Protestant | 9.41 | 0 | 45.14 | 6.16 |
| Catholic | 22.25 | 0 | 75.52 | 14.93 |
| Other Religion | 4.38 | 0 | 88.14 | 7.16 |
| Total Population | | | | |
| Unemployment | 5.87 | 1.72 | 15.97 | 2.09 |
| Job Growth | 13.86 | -18.63 | 117.23 | 16.04 |
| South | 0.34 | 0.47 | 0 | 1 |
| First Level | | | | |
| Age | 41.66 | 25.00 | 63.00 | 10.04 |
| Male | 0.53 | 0 | 1 | 0.49 |
| Female | 0.47 | 0 | 1 | 0.49 |
| Married | 0.65 | 0 | 1 | 0.47 |
| Separated | 0.17 | 0 | 1 | 0.39 |
| Single | 0.16 | 0 | 1 | 0.37 |
| White | 0.80 | 0 | 1 | 0.40 |
| Black | 0.10 | 0 | 1 | 0.31 |
| Other | 0.05 | 0 | 1 | 0.21 |
| Hispanic | 0.04 | 0 | 1 | 0.21 |
| High School | 0.25 | 0 | 1 | 0.45 |
| Some College | 0.23 | 0 | 1 | 0.42 |
| College Degree | 0.26 | 0 | 1 | 0.44 |
| Advanced Degree | 0.09 | 0 | 1 | 0.29 |
| Work Experience | 18.53 | 1.00 | 40.00 | 10.01 |
| Management | 0.34 | 0 | 1 | 0.47 |
| Service | 0.13 | 0 | 1 | 0.34 |
| Retail | 0.25 | 0 | 1 | 0.43 |
| Farming | 0.01 | 0 | 1 | 0.09 |
| Construction | 0.10 | 0 | 1 | 0.30 |
| Production | 0.17 | 0 | 1 | 0.37 |
| Job Growth | 13.86 | 16.04 | -18.36 | 117.23 |
| Children Present | 0.52 | 0 | 1 | 0.50 |
| Hourly Wage | 18.67 | 0 | 87777.00 | 26.63 |
| Second Level N = 2057 | | | | |
| First Level N = 5,401,470 | | | | |

Those with less than a high school education are included in the high school diploma measure. For this variable high school diploma served as the reference category. Nearly 28 percent of the sample had attained a high school diploma or less, 23 percent had attended some college, 25 percent had a college degree and less than 10 percent had graduated with an advanced degree.

I estimated a work experience variable. The PUMS has no variable that directly reports the number of years an individual has worked, however previous research indicates the measure to be vital when discussing wage and wage inequalities (Light and Ureta 1995). A proxy for work experience was made by subtracting the highest year of schooling completed by the respondent and the constant 6 from their age. I do not include a measure of age alone.

A series of occupation categories control for the job type of each respondent; those listed as currently unemployed or employed by the military were excluded from the analysis. Individuals who were employed in the year previous were included in their proper occupational category, however currently unemployed individuals were excluded because they did not have wages in the previous year and those in the military were excluded because their source of income is not likely to be affected by the local institutional environment (Lundquist 2008). Management made up 34 percent of the sample, service employment 13 percent, retail 25 percent, farming less than one percent, construction 10 percent, and production 17 percent. Service employment was used as the reference categories.

Finally I include a measure of the respondent's family status. It is a dichotomous variable that controls for the presence of the respondent's own children in the home, regardless of their age. Around 51 percent of the sample had children present in their home.

3.2.2 PUMA Level

PUMA-level measures attempt to capture ecological factors in the local institutional environment. They are not aggregates of individual data, but they do represent the larger contribution of individuals to the local environment. All means in Table 1 are taken across all state PUMAS. The unemployment rate is calculated from the county-level measures for the unemployed and employed civilian populations, which were summed up to the PUMA level. The mean unemployment rate was 5.87 percent. I control for the growth of the area in the previous decade with a measure of percent change in jobs. To compute this rate, I subtracted the number of employed individuals in 1990 from the employed individuals in 2000 and then divided by the 1990 employed population. The mean rate of growth was around 13 percent. I include the log of the population size of the local area; the mean population was 487,478 persons per PUMA. The Southern residence variable controls for the location of the state PUMA. Because some factors associated with income inequality are typically associated with the south, controlling for the location of the PUMA was necessary. The religious categories indicate the percentage of the total PUMA population that self identify with each denomination. Of those denominations Catholics were 22 percent of the sample, mainline Protestants 9 percent, conservative Protestants 14 percent and 4 percent were other religions. These measures account for roughly 51 percent of the population; the remaining 49 percent are those who do not identify with any religion, or do not attend regular services. I tested other religious measures controlling for the number of congregations per one thousand people and measures controlling for percentage of congregations but they were less effective than the final measures.

3.3 Analysis

For my analysis I used the hierarchical linear modeling (HLM) software to fit a series of multilevel models. The HLM program estimates two models simultaneously, one on each the individual and PUMA levels. The first level models the within unit equation, while the second level models the between unit equation. The within-unit model regresses hourly wages on sex, race, educational attainment, work experience, occupation and family status. The between unit model, which operates at the PUMA level in my analysis, models the religious make up variables, unemployment rate, job growth and population size onto the within-unit slopes and variances.

The within-unit, individual level model can be written:

$$(Hourly\ Wages)_{ij} = \beta_{0j} + \beta_{1j}(Other\ Individual\ Characteristics) + \beta_{2j}(Education) + \beta_{3j}(Work\ Experience) + \beta_{4j}(Occupation) + \beta_{5j}(Children) + e_{ij}$$

Where β_0 is the intercept, β_{1j} , β_{2j} , β_{3j} , β_{4j} , and β_{5j} are sets of coefficients of the individual variables that represent the individual characteristics, educational attainment, work experience, occupation and fertility status of the respondents and e_{ij} is the unique contribution of each individual i in the state PUMA j .

The between unit, PUMA level model can be written:

$$\beta_{0j} = \theta_{00} + \theta_1 (Religious\ Affiliation) + \theta_2 (Population) + \theta_3 (Unemployment) + \theta_4 (Job\ Growth) + U_{0j}$$

β_{0j} is the average wage for the study area when all other variables are set to 0. θ_1 are the regression coefficients that account for the religious denominations in the study area, θ_2

accounts for the logged population of the study area, θ_3 is the unemployment rate in the study area and θ_4 is the job growth percentage of the study area. U_{0j} is the PUMA level error term.

HLM allows users to select whether variables are allowed to vary across the second level unit of analysis. While it is ideal to allow all variables to vary, additional complexity in the model may cause problems in fitting the model. Furthermore, some variables do not have significant variance within second level units. In those cases the slopes and coefficients would not vary across PUMAs. All variables in my analysis, with the exception of separated/divorced and farming occupation categories, were allowed to vary across the second level. These categories were treated as constants because their reliability scores were low enough to imply the amount of variance across the PUMAs was not great enough to have a strong effect.

Chapter 4: Results

Table 2 lists the summary results of the series of regression models fitted to test for possible effects religion on sex discrimination through women's wages. Model 1 was fit using only the dependent variable and an overall constant assigned to it. This test checks for the amount of variation in the within unit outcomes in the dependent variable. The reliability score for the first model was 0.986, which indicates there is enough variance in the dependent variable for further modeling. The intercept in this model was 18.893, which is the mean wage score when there are no other controls. The estimate of unexplained first level variance for this model was 699.395.

Model 2 fits the constant plus the individual-level predictor variables, estimating the individual's contribution to their hourly wages. Within this model all variables are significant at the .001 level. The female effect has a negative relationship with wages, decreasing them by approximately 6.11 dollars relative to males. Measures for educational attainment had a positive effect on wages when compared to only a high school diploma or lower. The work experience measure increased wages it by around 20 cents for each year of work experience. The occupation controls had positive effect on wages, with the exception of farming, all other categories increased overall wages when compared to service employment. The level 1 variance reported for this model was 653.79, which is a 6.5 percent decrease in the individual level variance.

Table 2: Regression Coefficients

| Variable | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|------------------|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|
| | Coeff | SE | P | Coeff | SE | P | Coeff | SE | P | Coeff | SE | P |
| Intercept | 18.89 | 0.10 | *** | 12.06 | 0.07 | *** | 9.13 | 0.53 | *** | 12.85 | 0.60 | *** |
| Second Level | | | | | | | | | | | | |
| C. Protestant | | | | | | | -0.02 | 0.00 | *** | -0.02 | 0.00 | ** |
| M. Protestant | | | | | | | -0.05 | 0.01 | *** | -0.06 | 0.01 | *** |
| Catholic | | | | | | | 0.01 | 0.00 | | 0.01 | 0.00 | ** |
| Other Religion | | | | | | | 0.01 | 0.01 | | 0.00 | 0.01 | |
| Total Population | | | | | | | 0.32 | 0.03 | | 0.08 | 0.04 | * |
| Unemployment | | | | | | | -0.05 | 0.02 | ** | -0.16 | 0.02 | *** |
| Job Growth | | | | | | | -0.01 | 0.00 | ** | 0.00 | 0.00 | |
| South | | | | | | | -0.62 | 0.08 | | -0.90 | 0.10 | *** |
| Female | | | | -6.11 | 0.07 | *** | -6.10 | 0.07 | *** | -12.77 | 0.65 | *** |
| C. Protestant | | | | | | | | | | -0.01 | 0.01 | * |
| M. Protestant | | | | | | | | | | 0.02 | 0.01 | * |
| Catholic | | | | | | | | | | -0.01 | 0.00 | ** |
| Other Religion | | | | | | | | | | 0.02 | 0.01 | * |
| Total Population | | | | | | | | | | 0.20 | 0.02 | *** |
| Unemployment | | | | | | | | | | 0.42 | 0.04 | *** |
| Job Growth | | | | | | | | | | -0.01 | 0.00 | ** |
| South | | | | | | | | | | 0.48 | 0.10 | *** |
| Separated | | | | -1.07 | 0.04 | *** | -1.07 | 0.04 | *** | -1.07 | 0.04 | *** |
| Never Married | | | | -1.98 | 0.05 | *** | -2.01 | 0.05 | *** | -2.00 | 0.05 | *** |
| Black | | | | -0.44 | 0.07 | *** | -0.36 | 0.06 | *** | -0.36 | 0.06 | *** |
| Other | | | | -0.63 | 0.08 | *** | -0.69 | 0.08 | *** | -0.71 | 0.08 | *** |
| Hispanic | | | | -2.00 | 0.07 | *** | -2.13 | 0.07 | *** | -2.16 | 0.07 | *** |
| Some College | | | | 1.21 | 0.03 | *** | 1.20 | 0.03 | *** | 1.20 | 0.03 | *** |
| College Graduate | | | | 4.22 | 0.05 | *** | 4.20 | 0.05 | *** | 4.20 | 0.05 | *** |
| Advanced Degree | | | | 9.60 | 0.09 | *** | 9.59 | 0.08 | *** | 9.60 | 0.08 | *** |
| Work Experience | | | | 0.21 | 0.00 | *** | 0.21 | 0.00 | *** | 0.21 | 0.00 | *** |
| Management | | | | 6.97 | 0.07 | *** | 6.94 | 0.07 | *** | 6.95 | 0.07 | *** |
| Retail | | | | 2.80 | 0.06 | *** | 2.77 | 0.06 | *** | 2.77 | 0.06 | *** |
| Farming | | | | -2.36 | 0.12 | *** | -2.02 | 0.12 | *** | -2.03 | 0.12 | *** |
| Construction | | | | 1.68 | 0.06 | *** | 1.59 | 0.06 | *** | 1.57 | 0.06 | *** |
| Production | | | | 1.03 | 0.05 | *** | 1.03 | 0.05 | *** | 1.03 | 0.05 | *** |
| Family Status | | | | 1.03 | 0.04 | *** | 1.02 | 0.04 | *** | 1.02 | 0.04 | *** |

Table 2: Regression Coefficients, continued

| Variance Estimates | | | | |
|----------------------------|-------|-------|-------|-------|
| First Level Variance | 699.4 | 653.8 | 653.7 | 653.7 |
| Intercept | 20.32 | 3.47 | 2.43 | 2.28 |
| Female | | 9.17 | 9.17 | 8.67 |
| Second Level N = 2057 | | | | |
| First Level N = 5,401,470 | | | | |
| ***P<.001, **P<.01, *P<.05 | | | | |

Model 3 adds PUMA level controls for the institutional environment, including all religious controls. These variables detail the effect of the ecological variables on overall wages. Of the religious variables only the populations of mainline and conservative Protestants have significant effects. The number of Catholics and other religious adherents within the population increase the overall wage. Both the levels of conservative and mainline Protestants in a PUMA have negative relationships with wages, though the effect of conservative Protestants is smaller than the effect of mainline Protestants. The variance left unexplained in the intercept has decreased from 3.47 to 2.43, a decrease of 30 percent. The amount of variance in the female variable did not decrease any significant amount.

Model 3 tests the effect of the ecological variables on female wages. In this model the effects of the ecological variables on overall wages are nearly the same, with both conservative and mainline Protestant populations having a negative effect. In terms of the female variable, when the ecological controls are taken into account, women earn 12.62 fewer dollars. In the final model mainline Protestant congregations have a highly significant positive relationship with wages. As such, increases in mainline Protestant population will increase women's wages relative to men. Conservative Protestant and Catholic populations however both negatively influence women's wages. Increases in either denomination will decrease women's wages in relation to men. Both Catholic and conservative Protestant variables were significant. The control for other religions had a positive relationship with female wages and was also significant. The variance in the intercept decreased from 2.43 to 2.28, a decrease of 6.17 percent, while the variance in the female variable decreased from 9.17 to 8.67, a decrease of 5.4 percent.

The population of conservative Protestants had a negative and significant relationship with both overall and female wages. While the decrease in variance was not large, and the effect of their presence is not strong, the results do support my hypothesis. An increase in the size of the conservative Protestant population does increase the sex-wage gap.

Chapter 5: Discussion and Conclusion

5.1 Discussion

My analysis used hierarchical linear modeling techniques to fit a series of regression models testing the effect of the number of conservative Protestant adherents in an area on both general and female specific wages. The results show that the number of conservative Protestant adherents in the general population decreases wages overall and also decreases female wages relative to men's wages; increasing the sex-wage gap.

The PUMA-level measures applied to overall wages produced some effects that were in line with previous research. Only the job growth and other religion variables were not significant at any level. The unemployment variable had a negative relationship with overall wages, which was expected as was the negative relationship between the south variable and overall wages. The effect of conservative Protestant adherents in the general population was significant and in the direction expected, as increases in the number of conservative Protestants in the population seems to decrease overall wages. However, increases in the population of mainline Protestants also decrease wages overall, with a stronger effect than conservative Protestants.

This could be caused by overlapping congregations. While the Association of Religious Data Archives do employ methods to ensure the most reliable data, sometimes congregations may report inaccurate numbers when estimating their adherents (Finke and Sheitle 2005). Furthermore, because conservative Protestants are theologically closer to mainline Protestants than they are to Catholics or other denominations, these two religious groups would be more likely to have overlapping congregations. So members of mainline Baptist churches may also

attend services at conservative Protestant churches and vice-versa. Further studies should explore this possible interaction.

In the case of female-specific wages, most of the variables had the effects that I expected. All of the non-religious ecological variables were significant. Increases in the total population increased female wages relative to male wages. Other and mainline Protestant religions also increased female wages relative to male wages. Catholics in the population increased the sex-wage gap. This finding is surprising because theologically Catholics are not as close to conservative Protestants as mainline Protestants, therefore an adherent splitting their time between congregations is unlikely. Regionally, Catholics are not evenly spread across the PUMA, and are often located in large clusters thus regional effects could be the reason for the negative relationship with female wages (Pew National Trusts 2007)(Trusts 2007).

Another unexpected finding was that women located in the South experienced a decreased sex-wage gap. This effect could be an issue of geography as my analysis uses the U.S. Census definitions for South, which includes Maryland, Florida, Delaware, Washington DC, none of which display the same characteristics as the more traditional Deep South states. Future analysis will most likely include a south control that is composed of the Confederate South states as opposed to the Census South.

The unemployment variable increased female wages; however this may be an effect of the job market itself. When companies begin cutting back their work force, they are more likely to cut high-cost employees before they cut lower cost employees. Thus, because the works in these high skilled jobs are more likely to be male, the sex-wage gap in that area would decrease. Job growth had the opposite effect, and increases in the job growth percentage

decreased female wages relative to male wages. This result may be an issue of the types of jobs that are being created, as the data to compute the variable are taken from between 1989 and 1999. During the 90's there was a large growth in technical jobs to support the burgeoning internet boom. Many of the jobs created were high skilled jobs that women, through allocative discrimination, may have had limited access too. Both of these results may be corrected with more sophisticated measures of the local job market than those used in my analysis.

It is also important to acknowledge the limitations of my study. The biggest limitation is the religious adherence data used in my regression model. The data provided by THEARDA does provide a solid estimate of congregational adherence, but because it does not contain data on irregular attendees, it only measures the most faithful of adherents. A large portion of the church-going population, including many primarily black churches, is not accounted for by their numbers. While THEARDA does provide an adjusted adherence rate, I was unable to use it because my analysis was concerned with religious penetration in the total population, thus I needed raw data to compute my own rates. In my future research I intend to find better measures of religious adherence, or better account for the missing data.

5.2 Conclusion

Researchers have shown that sex discrimination is still a major problem. Women are rarely paid less when they are doing the same jobs as men, but they are still circumvented into jobs that require less skill and are considered women's work. In now relatively rare cases women are paid less for jobs that require the same level of skill that many male jobs do. The days of open discrimination are most likely gone, but the shadow of sex discrimination hangs

over us all. Researchers have had difficulty capturing and solving this hidden discrimination; we know it exists, but its true causes and influences are difficult to measure.

While research has shown religion to have strong effects on society, it too is a complex social structure that can be difficult to measure. Religious beliefs are often the foundation of many people's worldview and as such affect many people's lives daily. Furthermore, some people may not attend services at one congregation exclusively and may drift from denomination to denomination in the hopes of finding a place that meets their spiritual needs. In some cases people may even be members of different churches concurrently. Those are merely a few of the factors that make religion elusive. However it cannot be underestimated as a cultural influence.

In my paper I have attempted to shed light on one cultural influence of sex discrimination. I was successful in testing my hypothesis that increases in conservative Protestant adherents would affect the sex-wage gap. While the results of my analysis are not as clear-cut as I had originally hoped, they do show potential. We know what sex discrimination is, where it is prevalent, and how it can affect women; however we do not know the full mechanism behind sex discrimination. As local culture may influence the institutional environment, so might the local culture itself be influenced. In this circumstance, religion may influence the local culture; however my analysis only covers a small amount of the variance present and further analysis is necessary.

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Vita

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