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THE GENDER/RACE WAGE GAP: A STATISTICAL ANALYSIS

by

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Thesis Abstract—Idaho State University (2014)

Inequality between men and women and blacks and whites has been well documented over the last 30 years. However, theoretical developments suggest men and women and blacks and whites cannot be examined as homogenous groups but must be examined through a combination of minority status, gender, and class. Recent research suggests factors that inhibit equality for white women do not affect black women in the same ways. To explore this issue, this thesis uses ordinary least squares regression to examine the pay gap between blue-collar/trades black men and women, and white men and women. This thesis explores the impact of two structural factors, family structure and geographic location, on the wages of each group. Results demonstrate family structure and geographic location significantly predict wages for white men. These results suggest class, specifically blue-collar/trade occupational status, affects the inequality experiences of black and white men and women.

CHAPTER I
Introduction

Economic inequality between men and women and African Americans and whites is a well-documented phenomenon in the United States (BLS 2013). One indicator of this inequality is the persistent wage gap. According to the most recent Current Population Survey (CPS) (released in 2013), the wage gap between men and women employed full time is 18 percent. Thus, women earn 82 percent that of men (BLS 2013). Considering race, African American full time workers earn 21 percent less than white full time workers (BLS 2013). Taking race and gender together, white men earn 19 percent more than white women, while African American men earn eight percent more than African American women (BLS 2013). Additionally important is the gap between African American and white women and African American and white men. African American women earn 15 percent less than white women and African American men earn 25 percent less than white men (BLS 2013). The persistence of inequality over many decades is apparent from data collected over many years by The Bureau of Labor Statistics. Upon review of this data, it is very apparent the wage gap between men and women and African Americans and whites has persisted for generations but is shrinking (BLS 2013).

Much research examines either the gender wage gap or the racial wage gap. However, equally substantial research examines both the gender/race wage gap. When examining wage inequality, a structural phenomenon, it is necessary to examine other structural phenomenon (Chafetz 1984). Thus, individual explanations for wage inequality are not sufficient, such as level of education and job tenure, in explaining differences in

wages (Roscigno, Garcia, and Bobbitt-Zeher 2007). To explain the wage gap, it is necessary to identify structural phenomena (or phenomena relating to larger social institutions).

One important structural phenomenon is family structure. Waldfogel (1997, 1998) notes the impact of children on women's wages. Women with children, explains Waldfogel, earn less than their childless counter parts. Scholars also note families headed by single mothers are increasing and these families earn less than other families (Martin 2006, McLanahan and Percheski 2008). Martin (2006) goes on to explore other types of families such as cohabitating families. Martin's (2006), Waldfogel (1997 and 1998), and others demonstrate the importance of family structure on women's earnings.

Another important factor to consider when examining the wage gap is geographic location and commute time. Lafferty and Preston (1991) examine commuting time, race, and gender. They explain, "women work substantially closer to home and have shorter commuting times than men" (Lafferty and Preston 1991:1). However, this does not hold true for all racial groups. Typically, this applies only to white women, while African American women may commute as far as men (Lafferty and Preston 1991). Given the differences in commute times for men and women and African American women and white women, it is necessary to understand the impact of commuting on wage differences. It is also important to note, much research on commuting is specific to a city. This research, on the other hand, will attempt to use national commute time data.

The purpose of this research is to better understand the wage gap between African American women and white women and African American men and white men by identifying factors that negatively affect wage. This research is necessary to better

understand the wage gap, understand its existence, and to assist in eliminating it. By identifying factors which negatively impact wages, or increase the wage gap, steps can be taken to address the problem, and thus eliminate wage differences.

RESEARCH QUESTION

What impact do family structure and geographic location have on wage inequality between African American women and white women, and African American men and white men between the ages of 30-65 in blue-collar/trade occupations?

THEORY

In her book *Sex and Advantage*, Janet Saltzman Chafetz (1984) creates a new sex stratification theory. Sex stratification theory examines and attempts to explain stratification (or inequality) between men and women. Chafetz's theory utilizes a macro-approach and structural concepts to explain stratification between men and women. Thus, she is not concerned with individual traits or phenomenon, instead she is concerned with social structures (such as geographic location, sex ratio, and household division of labor to name a few). In her book, Chafetz argues that sex stratification is a structural phenomenon which can only be understood by examining other structural phenomena. Chafetz suggests several factors are essential to explaining sex stratification: family structure, geographic location or distance from work, and paid work structure, to name a few. For Chafetz, these structural factors are key to understanding sex stratification (Chafetz 1984).

This research will rely on the theory developed by Janet Chafetz (1980) in *Sex and Advantage*. This research will use two of the previously mentioned structural factors (family structure and distance from work) to analyze the effect these have on inequality

(or wage differences). Because Chafetz's factors are structural, they will also be useful in understanding racial and gender inequality.

While Chafetz's theory does a superior job of explaining gender inequality, it is still limited. Her work theorizes about discrimination and inequality but it does not highlight racial differences between women. However, the inclusion of intersectionality theory, developed by Kimberle Crenshaw (1989), easily overcomes this limitation. With this theory, Crenshaw (1989:139) demonstrates that race and gender are not mutually exclusive categories, but must be considered together. Crenshaw (1989:140) asserts, when only privileged groups are considered in discrimination, the remaining group members are further marginalized. For example, when examining gender inequality, typically the stories of white, middle class women are told. In telling the story of only white, middle class women, the experiences of black women are ignored, thus further marginalizing this group. Thus, to fully understand the impact of the wage gap it is necessary to not only examine a single identity, gender, but to include other identities, such as race (Crenshaw 1993). In doing this, research is able to more clearly identify and understand mechanisms of discrimination and the situation of black women as compared to women who are white.

METHODOLOGY

This research is concerned with the wage gap between men and women. A quantitative analysis is conducted because the research is concerned with numerical data and understanding the pay gap. Likewise, quantitative analysis demonstrates which independent variables are correlated with the dependent variable (income). This analysis shows not only the relationship, but also the impact of each independent variable on the

dependent variable. A quantitative analysis is one way to determine both impact and correlation between the independent variables and the dependent variable.

Additionally, this research uses the Statistical Package for the Social Sciences (SPSS) to conduct a secondary data analysis. The use of secondary data allows for quick and meaningful analysis. Additionally, the research will utilize data from the Panel Study of Income Dynamics (PSID) (explained below).

The 2011 PSID is a national survey conducted every two years by the Institute for Social Research at the University of Michigan. It is widely used by social science professionals. The PSID contains a plethora of variables, which makes it possible for social scientists to operationalize abstract constructs. The wealth of variables allows the researcher to examine important social structures and their impact on inequality (PSID 2014).

The dependent variables, African American women's wages, white women's wages, African American men's wages, white men's wages, the exact wage of the "head of the household." This variable measures the respondent's income earned from his/her occupation. It does not include other forms of income. Additionally, a "select if" method will be used to limit the analysis to blue-collar/trade workers and to examine each racial/gender category separately.

Several indicators operationalize the first construct "family structure": *number of family generations in household; number of young children;* and *head's level of household work.* The second construct, "geographic location" is operationalized by examining: *commute* (a variable that examines how many minutes it takes the head to arrive at work); and *region at the time of interview* (this variable will be recoded into a

dummy variable). Based on initial research it appears the largest wage gap between these groups exists in the South, thus, the South is the reference variable. These independent variables measure the construct geographic location.

This research will utilize ordinary least squares (OLS) regression. OLS regression is a predictive model, which is seen in the following equation:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_k X_k + e_i$$

With this model, a coefficient is calculated for each independent variable. The research model is used to predict the amount of change observed in the dependent variable by each independent variable while holding the effect of the others constant.

For this project, this model will be used:

$$y = \beta_0 + \beta_{\textit{number of family generations in household}} X_{\textit{number of family generations in household}} + \beta_{\textit{number of young children}} X_{\textit{number of young children}} + \beta_{\textit{head's level of household work}} X_{\textit{head's level of household work}} + \beta_{\textit{time travel to work}} X_{\textit{time travel to work}} + \beta_{\textit{region at the time of interview}} X_{\textit{region at the time of interview}} + e_i$$

OLS regression is a statistical technique which shows the effect of the independent variables on the dependent variable while holding the effect of the other independent variables constant. This technique attempts to account for variation in the dependent variable. Conducting an OLS regression will create a model that attempts to account for differences in wages between black and white women and black and white men. This model will show the effect of each independent variable (family structure and geographic location) on the wages of black and white women and black and white men.

OLS regression is also useful in that it allows the independent variables to be compared. That is, OLS regression allows the researcher to compare the effect of one independent variable with the effect of another through the use of standardized

coefficients. This comparison allows the researcher to discover the independent variable with the greatest impact on the dependent variable. Thus, the research will identify which social structure has the greatest impact on wages.

Results show this model only significantly predicts the wages of white men. For this group, only two variables, commute time and living in the South, significantly affect white men's wages. The lack of significance in other models may be due to blue-collar trade occupational status, suggesting class plays an important role in understanding gender inequality.

Conducting this research assists in understanding the wage gap not only between men and women but also between African Americans and whites. This adds to the vast body of stratification research. While this field is vast, this research helps to not only identify the gap, but factors that contribute to it. This information could assist in addressing, understanding, or even eliminating the wage gap, and perhaps inequality.

CHAPTER II
Theory

The following provides a discussion of the theoretical perspectives utilized in this research. This research uses two theoretical perspectives: sex stratification theory and intersectionality theory. Each theoretical perspective adds to the understanding of the race/gender wage gap. Sex stratification theory assists in understanding important structural phenomenon which contribute to the wage gap, while intersectionality highlights the importance of multiple identities in understanding inequality.

SEX STRATIFICATION

Sex stratification theory was widely used by social scientists in the 1970s and 1980s (Chafetz 1984:3, Blumberg 1978, Neilson 1978, Acker 1980). In her book, *Sex and Advantage: A Comparative, Macro-Structural theory of Sex Stratification*, Janet Chafetz (1984) creates a new sex stratification theory to provide a "general theoretical understanding of why societies differ in the degree of inequality between the sexes." Chafetz created a theory which used "general or universal variables…to develop a general theory of sex stratification" (Chafetz 1984:4). That is, Chafetz (1984) was not concerned with identifying variables which explain sex inequality within specific social groups, she was concerned with identifying variables which explain sex inequality across all social groups and all social settings. Put simply, Chafetz (1984) was primarily concerned with identifying general factors which explain the inequality between men and women regardless of race.

In constructing this theory, Chafetz notes the popularity of sex stratification theories (Chafetz 1984:3, Blumberg 1978, Neilson 1978, Acker 1980). However,

according to Chafetz (1984:2) many scholars utilizing this theory do not ask the right questions. Chafetz (1984:2) explains, rather than "[ask] what variables account for variation in *degree* of sex inequality, they address the issues of 'How did the subordination of women to men come about?' or 'What accounts for female subordination to males?' (emphasis original). These questions, according to Chafetz (1984:3), "utilize a simple dichotomy – subordination vs. non-subordination" rather than attempting to identify factors which influence the degree of sex inequality in a given society.

Chafetz (1984:3) further criticizes the theories generated by these types of questions. Some of these theories treat female subordination as a constant, rather than a variable itself; some emphasize only one cause of inequality; while others are based on "assumptions, speculations or, at the very least unverifiable assertions concerning either the basic nature of one or both sexes of the nature of human societies" (Chafetz 1984:3). With these criticisms at the forefront, Chafetz (1984:4) sets out to create a new "multivariate and systematic…structuralism approach" to sex stratification theory.

For Chafetz, there is no question whether sex inequality exists, instead, she is concerned with the "degree of stratification" (Chafetz 1984:4). That is, she is concerned with "the extent to which societal members are unequal in their access to the scarce values of their society" (Chafetz 1984:4). Sex stratification, according to Chafetz (1984:5) "refers to a comparison of access levels by the two sexes within a given society at a given time." Chafetz, then, is concerned with comparing men's and women's access to scarce resources in a specific society at a specific time (Chafetz 1984). In her theory, this concept (degree of sex stratification) is the dependent variable. That is, Chafetz is

concerned with identifying factors which either positively or negatively affect the degree of sex stratification (Chafetz 1984).

Chafetz identifies 13 concepts, each of which, according to Chafetz, predicts the degree of sex inequality within a society at a specific time (Chafetz 1984). This work, however, is concerned with only two of these concepts: "*type of family structure* and *degree of separation of work- and homesites"* (Chafetz 1984:15-17). While this research examines only these two variables, the other variables are equally important. For pragmatic purposes, however, these will be the only concepts discussed.

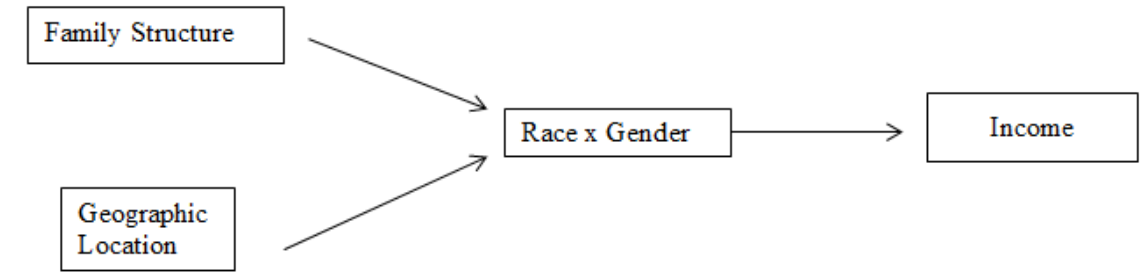
Type of Family Structure

This concept, according to Chafetz, is one of the most important intervening concepts in her theory. Chafetz (1984:79) notes the relationship between degree of sex stratification and family structure is both direct and indirect. This means family structure has a relationship with other factors in this theory, but also directly influences the dependent variable, degree of sex stratification (Chafetz 1984:79).

This variable, however, is not measured by one single construct. Instead, Chafetz created a composite variable which is comprised of three individual variables: lineality, locality, and the division of household labor (Chafetz 1984:15-16, 79). For pragmatic purposes, this research examines the last dimension only: division of household labor. This variable, according to Chafetz (1984:79) is "seen to be a function of the extent to which females are involved in productive labor, and vice versa." Stated differently, the more involved females are in household labor, the less involved in productive labor, and vice versa (Chafetz 1984:79).

In explaining this variable, Chafetz (1984:16) notes there are two distinctions

Figure 2.1 Interpretation of Chafetz's Theory as Used in This Research[1]



made in relevant literature. First, she notes "productive activity is separated conceptually from reproductive activity" (Chafetz 1984:16). She goes on to explain that "reproductive activity" refers not only actual reproduction of the species, but also to raising children. That is, "to the nurturing and socialization of children and to the related duties" (Chafetz 1984:16). For Chafetz, the number of children in a household is directly related to a woman's ability to engage in productive work. She notes "fewer children make it more possible for women to engage in productive work, which in turn influences the division of domestic labor, and vice versa (Chafetz 1984:80). This suggests the presence of children, particularly young children who require more care and attention, in a household is an important factor in examining sex inequality.

The second distinction according to Chafetz (1984:16) "concerns 'public sphere vs. private sphere' ('domestic') activities." Chafetz (1984:16) states "'[public] sphere' refers to production for exchange purposes and societal decision-making and ritual activities; 'private sphere' to the reproductive, consumptive, and related domestic or maintenance activities." That is, the public sphere refers to work outside of the home,

[1] While Chafetz theory uses degree of separation of work- and homesites, this research uses a broader construct, "geographic location." However, geographic location encompasses Chaftez's construct degree of separation of work- and homesites.

while private sphere refers to work within the home. Chafetz (1984:13) also explains that productive/public work is the most valued work in a society. The more an individual participates in the productive/public sphere, the more valued the individual (Chafetz 1984:13). When examining sex inequality, these distinctions become very important, because, according to Chafetz (1984:16), "the more the sexes specialize in one or the other of these activity clusters…the greater the sex inequality."

Chafetz (1984:58) asserts "that females are nowhere superior to males in overall status because they are never able to specialize totally in the productive/public sphere of life." Because biologically only women are able to perform some reproductive tasks, women are not able to specialize solely in the public sphere, leading to sex inequality (Chafetz 1984 13, 58). That is, men are able to solely specialize in the public sphere, while women are limited in their public sphere specialization (or are not able to specialize in the public sphere because time is split between private and public spheres), thus creating a high degree of sex stratification (Chafetz 1984: 16, 58).

Therefore, when examining this variable, it is imperative to examine qualities such as number of children and division of household work and chores.

Degree of Separation of Work- and Homesites

In explaining this factor, Chafetz (1984:17) states, "[societies]…differ on the extent to which worksites are separated physically from homesites." Thus, in some societies, there is no separation between work and home, while in others the distance between the two sites is expansive (Chafetz 1984:17). For Chafetz (1984:17) this is important for women who are pregnant and/or nursing because "it is difficult for them to work efficiently long distances from their domicile, and women as a category will be curtailed in their

productive efforts by their maternal responsibilities." Chafetz (1984:17-18) asserts, "the greater the distance between worksite and home *and* the greater the average number of pregnancies and/or breastfeeding children, the less involved women as a group will tend to be in productive activities" (emphasis original). If women are less involved in productive/public work they will be less valued, thus leading to a higher degree of sex stratification (Chafetz 1984:18).

According to her theory, the factor, degree of separation of work and homesites, does not have a direct effect on the dependent variable, degree of sex stratification. Instead, average fertility rate mediates this variable. In most societies, it is the responsibility of women to care for children. To make childcare easier, women often select worksites near home to ease childcare duties. That is, worksites of women with children are typically closer to homesites because of domestic, childrearing duties (Chafetz 1984:68-69). However, according to Chafetz (1984:68), "[the] higher the fertility rate in a society and the greater the distance between worksite and homesite, the less involved women will tend to be in productive activities." When women are interrupted during productive work to care for children, and the distance to return to a homesite is great, productivity decreases (Chafetz 1984:68).

INTERSECTIONALITY

Kimberlé Crenshaw (1989) first conceived intersectionality in a paper titled "Demarginalizing the Intersection of Race and Sex: A black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." While this theory did not attract immediate attention, its growing popularity is apparent "in disciplines such as history, sociology, literature, philosophy, and anthropology as well as in feminist

studies, ethnic studies, queer studies, and legal studies" (Cho et al. 2013: 787). In her essay, Crenshaw lays the ground work for a new theoretical approach which emphasizes the importance of not only gender or race, but gender *and* race (or any intersecting minority identities). For Crenshaw, theory must not utilize a "single-axis framework," but instead, theory must consider multiple, intersecting identities which marginalize individuals (Crenshaw 1989). Put more simply, intersectionality, according to McCall (2005:1771), is "the relationships among multiple dimensions and modalities of social relations and subject formations."

Cho, et al. (2013), Phoenix (2006), Shields (2008), and others describe intersectionality similarly: as a theory that examines multiple, coexisting social positions to investigate discrimination. McCall (2005:1780) further explains "intersectionality arose out of a critique of gender-based and race-based research for failing to account for lived experience at neglected points of intersection–ones that tend to reflect multiple subordinate locations as opposed to dominant or mixed locations." Crenshaw's (1989, 1991) goal, in creating intersectionality, was to demonstrate the inability of single-axis frameworks, such as feminist theory and antiracist theories (theories which consider only one identity, either race *or* gender), to critically analyze "dominant ways of thinking about discrimination" (Crenshaw 1989:150). Rather than view minority groups as homogenous, Crenshaw (1989, 1991) argues that intragroup differences must be acknowledged and emphasized. According to Crenshaw (1989:140), when intragroup differences are ignored "a distorted analysis of racism and sexism" emerges "because the operative conceptions of race and sex become grounded in experiences that actually represent only a subset of a much more complex phenomenon." Crenshaw (1991:1242)

further criticizes this approach stating it "[relegates] the identity of women of color to a location that resists telling."

Intersectionality, therefore, insists on a reexamination of this single-axis framework for understanding discrimination. This single-axis framework only highlights the experiences of the dominant groups (white women or black men), and thus ignores experiences of those with multiple minority identities (Crenshaw 1989, 1991; McCall 2005). Thus, for women positioned at the intersections of multiple minority identities, their experiences are excluded from dominant stories of discrimination. For example, for white women, the family is often considered a source of inequality and oppression. This understanding of the family is often referenced in feminist literature. However, for black women, the family often has the opposite effect. However, because the inequality experiences of black women are often not told, the family is understood as a source of oppression for all women.

Crenshaw (1991:1242), does not deny the importance of identity politics[2], noting "identity-based politics has been a source of strength, community, and intellectual development," however a harmful downside also exists. Crenshaw (1989:140) elaborates, "dominant conceptions of discrimination condition us to think about subordination as disadvantage occurring along a single categorical axis." According to Crenshaw (1989:140) identity politics or single-axis frameworks "focus on the most privileged group members" and "[marginalize] those who are multiply-burdened and [obscure] claims that cannot be understood as resulting from discrete sources of discrimination."

[2] By "identity politics," Crenshaw is referring to a framework in which minority individuals collectively fight for power, rather than a few, single individuals attempting to change power dynamics. However, this collective is often united based on a single identity, such as being black or being a woman, rather than being black *and* a woman (Crenshaw 1991:1241-42).

Thus, theoretical perspectives which focus on one identity (either race *or* gender) tell the story of the marginalized group from the dominant identity. That is, issues of racism are told from the perspective of black men and issues of sexism are told from the perspective of white women (Crenshaw 1989, 1991). In providing only privileged perspectives of discrimination and marginalization, people who embody multiple minority identities are often ignored, or as Crenshaw (1989:140) claims, "[erased]…in the conceptualization, identification and remediation of race and sex discrimination."

For Crenshaw (1989, 1991) it is essential to examine not just one identity, but multiple, intersecting identities. Black women are not only black, nor only women, and thus cannot be understood as only black *or* women. According to Crenshaw (1989:149), "black women can experience discrimination in ways that are both similar to and different from those experienced by white women and black men." Thus, it is necessary to understand the experience of black women as not just black and not just women, but as black *women*.

Crenshaw's work set the stage for a new and important theory. Since Crenshaw's initial work in the late 1980s and early 1990s, intersectionality has proved extremely fruitful in, according to Cho et al. (2013:787), "facilitating consideration of gender, race, and other axes of power in a wide range of political discussions and academic disciplines." Intersectionality is vital to understanding how domination affects an individual not based on one minority status, but instead on multiple, coexisting minority statuses.

SYNTHESIS

While sex stratification theory and intersectionality may at first glance appear to be at odds, they can be reconciled. Chafetz (1984:8) admits "that in any given society males and females alike may be sharply differentiated by class, ethnicity, race, and other social stratification variables." Her hope in creating this sex stratification theory was to understand sex inequality generally. Likewise, Crenshaw (1991:1242) admits the importance of identity politics. Her hope in creating intersectionality was to understand the unique experiences within each gender category. It is likely that the factors of sex stratification theories do impact women generally, however, because studies which examine women as one social category typically only capture the experience of white middle class women (Acker 2000:193), it is important to discover how these variables affect minority women also. Because of cultural and social differences between African American and white women, it is now important to understand how Chafetz's factors affect women at the intersection of multiple minority identities. Rather than understanding how these variables affect all women (which typically represents only majority women), it is important to understand the impact of these variables on minority identities. Therefore, this research will attempt to understand not only the impact of these variables on women, but the impact of these variables on African American women and how they may (or may not) differ from white women.

CHAPTER III
Literature Review

GENDER/RACE WAGE GAP

When analyzing inequality, particularly income inequality, a single dimensional approach is insufficient. A one-dimension approach fails to acknowledge the complexity of social life and the unique experiences of women of color (Browne and Misra 2003, Woodhams et al. 2013, Acker 2006:442, 2000:193). "Most sociologists," according to Browne and Misra (2003:487), "readily acknowledge that any analysis of women that ignores race will be incomplete and may very well simply describe patterns for White women." Browne and Misra (2003:506) further note, "we cannot claim that men earn more than women when White women outearn Black men" (*sic).* Thus, to fully understand income inequality it is necessary to consider both race and gender.

However, scholars do not agree on the existence of intersectionality in labor markets. Some scholars posit that intersectionality is always present. Browne and Misra (2003:492) explain the "ubiquitous nature of race, gender, and class intersections…is assumed by many scholars who see these categories as mutually constituted at the level of representation and social interaction." However, other scholars do not agree, but instead see intersectionality as "hypotheses to be tested" (Browne and Misra 2003:492). More research is needed to test the presence of intersectionality in the labor markets (Browne and Misra 2003:496). While debate about the presence of intersectionality in labor markets persists, Browne and Misra (2003:495) still find that it is "a powerful tool with which to understand the position of women of color in the labor market."

Given the importance of intersectionality, Browne and Misra (2003) examine existing literature to better understand intersectionality and its impact on the labor market. They note that "if race and gender are constructed together to influence labor market outcomes for all individuals" it is not enough to examine women of color only and their position in the labor market (Browne and Misra 2003:495). Instead, they insist on comparative studies, which examine intersections of power which affect all members of the labor market (Browne and Misra 2003:495). These studies however are sparse (Browne and Misra 2003:495). While few such comparative studies exist, Browne and Misra (2003:497) note "[overall] studies of wage determination at the individual level [show] that there are some distinct patterns for women of color, but also similarities to coethnic men…and to White women." These findings suggest, on one hand, race and gender intersect to create a unique experience for women of color. On the other hand, these findings also suggest that gender and race do not intersect to create a unique experience, but instead exist as separate minority identities which are similar to the dominant group (Browne and Mirsa 2003).

Contradictory empirical findings led Woodhams et al. (2013) to test intersectionality. Woodhams et al. (2013:1-3) explain, the definition and meaning of this theory is highly contested by theorists. In order to further the understanding of intersectionality, Woodhams et al. (2013) conduct a large scale, longitudinal study of discrimination in a United Kingdom company. Utilizing a multidimensional framework, Woodhams et al. (2013) examine the impact of gender, race, age, and disability status on wage. After conducting an ordinary least squares regression, the authors discover there is a wage difference between those with, and those without disadvantage. Using men, white,

non-disabled, between 31-45 years of age as the control group (or the group with no disadvantage) all other groups (from one disadvantage to four disadvantages) demonstrated a difference. The authors also discovered a statistically significant difference between nearly all groups. That is, the difference between no disadvantage and one, two, three, or four disadvantages; and one disadvantage, and two, three, and four disadvantages (and so on) was statistically significant. The only gaps not significant are the gaps between two disadvantages and four disadvantages and three and four disadvantages. However, the difference between these groups is still quite large (Woodhams et al. 2013:7-9). The authors ultimately conclude there is an exponential relationship between multiple disadvantage and pay inequality. The authors conclude pay inequality is not additive, but is instead intersectional (Woodhams et al. 2013:11-12).

McCall (2001) examined race, ethnic, and gender differences in labor markets. She explains typically research focuses on one subgroup (white men or black men) rather than comparing the groups and looking at the intersections of these groups. Thus, it is necessary to understand "whether certain explanations matter more for some groups than for others" (McCall 2001:535). McCall (2001) utilizes structural variables such as unionization, manufacturing growth, and immigration to discover their impact on different racial, ethnic, and gender groups.

McCall (2001:535) found that "sources of wage inequality vary across racial, ethnic, and gender groups." Thus, one explanation of inequality may explain the wage gap for one group but not another. She also notes "the sources of racial wage inequality were more similar for men and women of the same race-ethnicity than they were for women [and men] of different races or ethnicities" (McCall 2001:535). This finding

suggests intersectionality is present in this study. It suggests men and women should not be combined into general categories, but instead racial and ethnic differences must be acknowledged and studied, and when examining income inequality, it is necessary to identify and understand the ways in which race and ethnicity impact sources of inequality.

Later, McCall (2005) conducted another study examining intersectionality and inequality. In her study she discovered "different contexts reveal different configurations of inequality in this particular social formation" (McCall 2005:1791). That is, for this study, as different identities are considered and as these identities intersect inequality will present itself differently. McCall (2005) is cautious to generalize these results and claim that intersectionality is *always* present. But she does acknowledge that in this study inequality differs among racial and ethnic groups (McCall 2005:1790-91). McCall (2005:1791) goes on to note "[the] point is not to assume this outcome a priori but to explore the nature and extent of such differences and inequalities." Thus, for McCall, it is necessary to conduct studies which attempt to better understand the impact of intersectionality.

With multiple studies confirming the presence of intersectionality in wage inequality and other presenting questions to test the presences it is necessary to better understand intersectionality. Without question it is necessary to acknowledge and understand racial and ethnic differences when examining the wage gap between men and women.

FAMILY STRUCTURE AND WAGE INEQUALITY[3]

Families in the United States have changed over time (Vespa et al. 2013:1). In the 1950s families thrived, and the image of an ideal American family was born. The ideal family included one father-breadwinner, one mother-homemaker, and children. This family was middle class, heterosexual, and white. Other images of the family, including minority families, were not the ideal family, but instead were labeled deviant and dysfunctional (Baca Zinn and Etizen 2002:6-13, 157). While this image still persists today, it is not the reality for most families (Baca Zinn and Etizen 2002:6, Vespa et al. 2013:1).

Vespa et al. (2013:1) explain families "have developed distinct regional trends because of factors such as local labor markets and migration patterns." They go on to explain "it is difficult to talk about a single kind of family or one predominant living arrangement in the United States" (Vespa et al. 2013:1). According to Cherlin (2010:146-47), for all ethnic groups there has been an increase in the number of children born out of wedlock and single parent families. McLanahan and Percheski (2008:258) explain "[by] 2000, almost 50% of all nonmarital births were to a cohabitating mother, and between one-quarter and two-fifths of children were expected to experience parental cohabitation during childhood." Given the diversity in family structure, it is necessary to understand how family structure differs by race.

While more unmarried couples are having children, the most common household type is still the married, two parent household. According to a Census report by Vespa et al. (2013:12-13) 76 percent of white households were married couples, while for blacks

[3] The research explored in this section use data from many different data sources. Many of the following studies use research from the Bureau of Labor Statistics, specifically the National Longitudinal Survey of Young Women. Others use data from the Census or Current Population Survey. While data sources vary among the following research, none uses data from the Panel Study of Income Dynamics.

43.2 percent of households were married couples. However, according to Vespa et al. (2013:12-13) "Blacks had the highest percentage of mother-only family groups and householders living with other relatives (29 percent and 22 percent, respectively)." Mother-only family groups for whites was 9.6 percent, while householders living with other relatives was 10.4 percent in 2012 (Vespa et al. 2013:12).

When considering householders living with other relatives it is necessary to examine multigenerational households. Again, multigenerational households are more common among African American families (8.3 percent) than white families (3.9 percent) (Vespa et al. 2013:8). According to Vespa et al (2013:7) "[the] most common type of multigenerational household was one in which a householder lives with a child and a grandchild (64 percent)." According to Cherlin (2010:151-52) grandparents often play a very significant role in the lives of grandchildren. In these households the presence of children is near parity for black and white families (Vespa et al 2013:8).

Near parity exists between black and white "unmarried parent couple" households (Vespa et al. 2013:12-13). When considering this number, caution must be exercised. Census and other quantitative data often do not capture the complex nature of families for African Americans and whites alike. Cooley (2001:743) explains, "misperceptions abound concerning the prevalence and meaning of…demographic patterns." Thus, statistical information about families often does not capture the reality of family life for many African Americans. Qualitative studies (Cooley 2001, Harry et al. 2005, Mosley-Howard and Evans 2000) reveal family life is much more complex. Often, fathers are present but not living with the mother and children. Qualitative studies further reveal a large number of single parent African American women do in fact receive financial

support from fathers. Cooley (2001:745) explains, “46% of the mothers who did not reside with their children's father reported receiving financial support.” This suggests family life is even more complex than Vespa et al. (2013) report.

Considering the differences between African American and white households, it is likely that family structure will affect wage inequality differently depending on race. Existing research often only captures the experience of white, middle class women. However, the presence of multigenerational households and “hidden” fathers in African American families may cause family structure to have a different effect for African American women.

According to McLanahan and Percheski (2008), the family plays a substantial role in creating and maintaining poverty, and economic and racial inequality (McLanahan and Percheski 2008:258, 269). Given the important effect of the family on racial and economic inequality it is necessary to explore the impact of family structure on wage inequality.

Scholars agree changing family structure is an important factor when examining inequality and poverty (Martin 2006). However, existing research on family structure often focuses on marital status and typically examines female headed households, single mother households, and cohabitating couples. Scholars agree, the number of single mothers has increased and continues to increase today. Single mothers are almost always worse off than cohabitating couples or married couples. Many scholars point to the increase in single motherhood as an important factor in rising income inequality (Martin 2006, McLanahan and Percheski 2008, Vespa et al. 2013, Iceland 2003). With much data examining single motherhood, it is necessary to examine other family structure factors

such as the effect of young children, multigenerational households, number of earners, and division of household labor.

Children and Wage Inequality

Western and Bloome (2008:903) note "[from] 1975 to 2005, income inequality among American families with children increased by two-thirds, a larger rise in inequality than for men's hourly wages or for the incomes of all households." One of the most impoverished groups is single mothers, it is no surprise that, according to McLanahan and Percheski (2008:270), having children exacerbates the pay gap between women more than men. McLanahan and Percheski (2008:270) note women experience the "*motherhood penalty*" because, after having children, they are expected to miss work to care for children. However, for fathers, the converse exists: a *fatherhood premium* or an increase in wages after the birth of a child (Glauber 2008). Glauber (2008:9) explains the penalty and premium "reflect institutionalized gender inequalities and essentialist cultural conceptions of motherhood and fatherhood."

As stated earlier, the wage gap has been shrinking. Surprisingly, though, the gap between women without and women with children has been growing (Waldfogel 1997, 1998). Women with children typically experience a "penalty of 10-15 percent" when compared to women without children (Waldfogel 1998:143). Waldfogel (1997, 1998) explains there are several common hypotheses to explain the gap between women with and without children: human capital theory, unobserved heterogeneity, and part-time employment. Citing Becker (1985), Waldfogel (1997:209-210) explains human capital theory hypothesizes women will spend more time out of the paid workforce caring for children, thus decreasing their work experience and leading to a pay gap between men

and women. She goes on to explain that this explanation has been "confirmed by several studies, which established that when employment experience is taken into account the unexplained difference in wages between mothers and other women narrows substantially" (Waldfogel 1997:210). However, other research demonstrates that a large wage gap exists even when controlling for employment experience. (Interestingly, Waldfogel (1997:215) discovers that in terms of wages, "mothers are not systematically different from non-mothers in their unobservable characteristics.") Unobserved heterogeneity, according to Waldfogel (1997:210) is "differences in characteristics that are not observed in the data, such as motivation or commitment to paid work." Other scholars utilize a similar definition (Budig and England 2001:204, Avellar and Smock 2003).

Waldfogel (1997) was one of the first researchers to examine the effect of the *motherhood penalty*. She discovers, "even after controlling for actual employment experience, having children…matters" (Waldfogel 1997:211). Waldfogel (1997:212) controls not only for experience but other factors such as education and continues to find "a direct effect of children on wages." Waldfogel (1997:212-13) also addresses the issue of unobserved heterogeneity, discovering "children have negative effects on women's wages, even after controlling for unexplained heterogeneity." Waldfogel (1997:213) also discovers that having children may be important in reducing wages overtime. That is, the wage gap between women with and without children becomes greater as more time lapses. Lastly, Waldfogel (1997:215) addresses the issue of part-time employment. Her results confirm that part-time employment does have a substantial effect on the wage gap,

and greatly reduce the "negative effects of children" on women's wages (Waldfogel 1997:215).

However, Waldfogel (1997:215) notes "there is still a 4 percent penalty for having one child and nearly 12 percent penalty for having two or more children" even after controlling for other factors. Thus, while controlling for part-time employment does greatly reduce the effect of children on women's wages, a gap still remains. Waldfogel's 1998 study found similar results, but added data on two children. She discovered that two children often slightly increase the motherhood wage penalty (Waldfogel 1998).

Building on Waldfogel's 1997 study, Budig and England (2001) examine not only the variables used by Waldfogel (1997) but also include employer discrimination against mothers and placement of mothers in "mother friendly" jobs (Budig and England 2001:204-11). Their results mirror those of Waldfogel (1997, 1998). The authors find, after controlling for human capital variables, a child penalty still exists. They explain, controlling for human capital variables "reduces the child penalty by 36 percent, from about 7 to 5 percent" (Budig and England 2001:214). This suggests human capital theory does explain some of the wage gap between mothers and non-mothers, but still leaves an unexplained gap. Like Waldfogel (1997), Budig and England also discover that the only other important factor in reducing the child wage gap is part-time employment. Research by Correll et al. (2007) found similar results that a motherhood wage gap exists. Specifically, they discovered that employers judge mothers "as significantly less competent and committed than women without children" (Correll et al. 2007:1316). Ultimately these authors conclude, discrimination contributes to the motherhood wage gap (Correll et al. 2007). Likewise, a study conducted by Avellar and Smock (2003:603)

demonstrate that the *motherhood penalty* "has not declined significantly over time" and that "each child depressed the wages of women." Thus, women with more than one child experience an even larger *motherhood penalty*.

It is important to note, these results apply only to women. For men, being a father creates a wage premium (Lundberg and Rose 2002, 2000, Glauber 2008, Correll et al. 2007). In their study on the *motherhood penalty,* Correll et al. (2007:1317) discover "fathers were rated significantly more committed to their job than nonfathers (*sic*)." Glauber (2008) also reports an increase in annual earnings and weekly wages for men with one or two children.

However, it is also important to note that these findings vary by race. Glauber (2008) explains the intersections of race and gender create different work experiences for African American women. Citing Kennelly (1999), Glauber (2008:12) summarizes "not only do employers perceive all working women as mothers and less capable in their jobs, but they also perceive all Black women as single mothers." Knowing that women experience employment in different ways based on race, it is not surprising that children have different effects on women's wages based on race. Waldfogel (1997:216) discovered that the effect of children was smaller for black women than for white women. Budig and England (2001:219) found a difference in earnings for black and white mothers with three or more children (the wage penalty for one or two children did not vary by race). Glauber's (2007:954) results matched those of Budig and England (2001) and Waldfogel (1997). She discovered "[there] are racial differences among mothers and…these differences persist even after controlling for racial differences in marriage rates." Glauber (2007:955) concludes that "African American mothers pay

much smaller wage penalties." Correll et al. (2007:1324), on the other hand, found in their experiment that "African-American women and white women both experience a *motherhood penalty*, and the magnitude of that penalty is largely the same for both groups." Correll et al.'s (2007) differences may be due to research design issues. They conducted an experiment with undergraduates while the other studies typically use the National Longitudinal Survey of Youth.

While research on the *motherhood penalty* and race is plentiful, there is a dearth of research on the *fatherhood premium* and race (Glauber 2008). In her study, Glauber (2008) addresses the lack of information about the *fatherhood premium* and race. She discovers that both black and white fathers experience an increase in pay but the *fatherhood premium* is greater for whites than for blacks (Glauber 2008:17). Glauber (2008:18) further explains black men only experience a *fatherhood premium* with one or two children, while whites experience a premium with any number of children (one, two, or three or more). Glauber (2008:13) attributes this to two factors, first, "employers discriminate against Black men and tend to perceive them as less skilled and committed than white men," typically fathers are preferred for employment, but because of workplace discrimination, black fathers may not be preferred over black childless men (Glauber 2008:13). Second, Glauber (2008:13) states "institutionalized racial inequality" has caused job instability and lower earnings for black men when compared to white men and a smaller wage gap between black men and women along with "more equal gender division of paid and unpaid labor for Black men as compared to White men."

With differences by race in *the motherhood penalty* and the *fatherhood premium* this is an important factor to examine to better understand the gender/race wage gap.

Further analysis will assist in better understanding the gap between black and white women with and without children. Additionally, a better understanding of the *fatherhood premium* by race will assist in building knowledge of this phenomenon.

Multigenerational Families and Wage Inequality

Vespa et al. (2013:7) define multigenerational families as "family households consisting of three or more generations." Other scholars use similar definitions (Bengston 2001:2, Deleire and Kalil 2002:393, Pittman and Boswell 2008). According to Pittman and Boswell (2008:852) grandparent-headed households are on the rise, and most grandparent-headed households are multigenerational. While the number of multigenerational households is increasing and many scholars acknowledge the importance of this diverse family type, research in this area is still limited (Pittman and Boswell 2008:852). Current research on multigenerational or extended families often focuses on parenting, parental stress and wellbeing, and child wellbeing of African American families (Chase-Lansdale et al. 1994, Goodman and Silverstein 2002, Simons et al. 2006, Barbarin and Soler 1993). When research does examine income, it typically looks at family income, inequality, and poverty along with previously mentioned factors (Cohen and Casper 2002, Pittman and Boswell 2008, Vespa et al 2013). Additional scholarship on the importance of multigenerational families is necessary to understand the impact of this family type on the gender/race wage gap.

In their review of existing research, Pittman and Boswell (2002:853) discover children in multigenerational households are more likely to live below poverty, adult children living with parents are more likely to be younger and economically dependent on parents, and "young mothers who choose to live with their mothers rather than by

themselves" are worse off (Pittman and Boswell 2002:853). Vespa et al. (2013:9) also report "multigenerational families [are] more likely to be in poverty." Angel and Tienda (1982:1365) also discover that "extended family structure is more prevalent among households headed by single women than among units where both spouses are present." Additionally, as noted, African American households are more likely to include extended family members than white households (Vespa et al 2013:7, Pittman and Boswell 2008:852, Cohen and Casper 2002:3). Vespa et al (2013:9) further, report that the situation of multigenerational families with a black reference person is worse than any other racial or ethnic group (Vespa et al 2013:9). Considering the wage gap between women and men and African Americans and whites, it is not surprising that the situation for multigenerational households is bleak.

Reasons for forming extended households are complex. Angel and Tienda (1982:1379) report findings which "lend some support to the claim that extension is related to the desire to alleviate temporarily or chronically low earnings of the primary earning." Cohen and Casper (2002:3) synthesize current research with similar results, noting household independence is preferred over extended living arrangements. They go on to explain "studies have consistently found that income is one of the most important determining factors of independent living" (Cohen and Casper 2002:3). That is, individuals with higher incomes are less likely to live in multigenerational households, while low income individuals are more likely to live in these households. This connection to income, according to Cohen and Casper (2002:3) "is also consistent with research showing higher rates of complex or multigenerational households among economically disadvantaged groups such as blacks." While a need to alleviate poverty may be a driving

force behind the creation of multigenerational households, it often does not alleviate the problem. Individuals may also form multigenerational households for other reasons such as cultural influences (Cohen and Casper 2002:3).

Angel and Tienda (1982:1381) argue "that the incorporation of nonnuclear members into the nuclear family can foster a reallocation of work responsibilities within the household. By releasing certain nuclear members from domestic duties, this permits an increase in the total amount of labor supplied to the market." That is, grandparents may perform domestic duties such as childcare and cleaning, allowing women (and men) to spend less time performing domestic duties and more time in the paid workforce. In a review of research on multigenerational families, Bengtson (2001:7) supports Angel and Tienda's (1982) findings and also notes "[intergenerational] patterns of help and assistance flow mostly from the older generations to the younger generations in the family" (as opposed to younger generations assisting older). Additional research suggests African American grandmothers play a central role in raising grandchildren (Dilworth-Anderson 2001, Pearson et al. 1990). Uttal (1999:846) supports the finding that African American relatives care for children, noting that "the rate of relative care is higher for Blacks…families than for White families." It is interesting to note, however, that Uttal (1999) also found that regardless of race, women prefer using professional childcare over relative care. With more individuals helping with domestic duties, wage earners should be able to dedicate more time to paid work leading to higher wages (and perhaps narrowing the gender/race wage gap).

It is important to note current research on multigenerational households looks at household income, rather than individual income. Current research relies on existing

trends in individual earnings, rather than examining the impact of multigenerational living on individual income and the gender/race wage gap. Thus, it is necessary to conduct further research on the impact of multigenerational households on individual income inequality (rather than household).

Division of Household Labor and Wage Inequality

With a substantial increase in women's labor force participation and greater participation in dual-earner and female breadwinner households, it seems likely that women's share of domestic duties would decrease while men's would increase. However, as Blau (1998) explains, "women have traditionally had the major responsibility for housework." Blau (1998:151) found that women are in fact dedicating more time to paid work and less time to unpaid housework. Surprisingly, all women (married, unmarried, employed and unemployed) are spending less time on domestic duties. In fact, Bianchi et al. (2000:212) note "the decline in housework hours after 1965 was actually more steep for nonemployed women than among women engaged in market work" (*sic*). Blau also found that men's work at a paid job site has remained unchanged, but their time spent on housework has increased. The increase in housework, however, only applies to married men. While both men and women experienced change, the changes were more pronounced for women (Blau 1998:151). Blau (1998:152-54) concludes "[the] increase in married men's housework in part represented a shift of their wives to the employed category." While a shift is occurring, according to Blau (1998:152), Mannino and Deutsch (2007:309-10) Artis and Pavalko (2003:746) and countless others, women continue to engage in more domestic duties than do men.

Blau's (1998) findings do not stand alone. Prior to Blau's (1999) research, Hochschild (2012) researched the gendered division of household labor, coining the term *second shift*. This referred to the two shifts of work a woman completed: one at a paid job site, the other at home. More recently Mannino and Deutsch (2007:315) also "found a gendered division of labor." They further discovered "the more income a woman contributed to the family, the smaller her share of housework" (Mannino and Deutsch 2007:316). However, they note of the women studied most "were not satisfied with their current division of labor," (Mannino and Deutsch 2007:316) suggesting there is still an unequal distribution of household labor. Unlike Mannino and Deutsch (2007), Artis and Pavalko (2003:755) do not find a correlation between family income or wife's income and housework. Although both Mannino and Deutsch (2007:316) and Artis and Pavalko (2003:755) agree women with more liberal gender ideologies do less housework, while their husbands do more. With regard to children, Artis and Pavalko (2003:756) find "the number of children under 5 years of age and the number of children between 6 and 12 years of age significantly increase women's responsibility for household labor." As with breadwinner status, young children do have an impact. A 2000 study conducted by Bianchi et al. (2000) mirror the findings of those previously mentioned.

While all women, regardless of race, spend more time doing housework than men, some racial differences do exist (John and Shelton 1997:180, Sayer and Fine 2011). Early studies by John and Shelton (1997), Geist (2005), and Orbuch and Eyster (1997) find substantial, and often significant, by race and gender. Specifically, John and Shelton (1997:180,187) find that black and white women spend about the same amount of time on household labor, but black men spend more time than white men on housework even

after controlling for demographic characteristics such as age, education, and number of children. Orbuch and Eyster (1997:312) confirm this finding stating "black wives report greater participation from their husbands in female-typed tasks than do white wives" but they "found no significant differences between black wives and white wives on responsibility for housework and childcare" (*sic*). John and Shelton (1997:181) find several reasons for this difference. First, white women work less than and earn less than white men, on the other hand, black women work more than white women but less than black men. Earnings and paid work time between black women and men is smaller than white women and men (John and Shelton 1997:181). The authors explain that "[men's] higher earnings may partially account for their lower housework time in that they may 'buy' or negotiate their way out of housework" (John and Shelton 1997:181). John and Shelton (1997:181) explain "[the] smaller gap between Black women's and men's earnings may contribute to Black men's greater housework time" (because black men's earnings are not high enough to "'buy' their way out of housework"). However, Orbuch and Eyster (1997:312) find that wives' income only affects husbands' housework "when wives' income is greater than those of their husbands and when couples support egalitarian norms regarding gendered roles." This is true for both black and white men.

John and Shelton (1997:181, 184) also note the number of people in a household alters who is doing household labor, and, according to the authors, black households are more likely to have more children and more adults in the household than white households. Thus, regardless of age, as the number of people in the home increases (or decreases) housework patterns also change. Considering this information and race, the authors explain "[the] greater number of children in Black households may be associated

with a greater demand for women's household labor and, possibly, for men's" (John and Shelton 1997:181,184). They further explain additional female adults may lead to less housework for wives and husbands while additional male adults may lead to more housework for both wives and husbands (John and Shelton 1997:184).

John and Shelton (1997:185, 188) also find a negative correlation between wage and time spent in a paid job and housework for both black and white women, that is, as wage increases or as the time spent in a paid job increases, the number of hours spent on housework decreases for both black and white women. John and Shelton (1997:187) also find men's "paid work is negatively associated with white men's housework time, but there is no significant association between paid work time and housework for Black men." Additionally, the authors found "[for] both Black and White men, the more time their wives/partners spend on paid work, the more time they spend on housework" (John and Shelton 1997:188). But for women "men's paid work time is [positively] associated only with Black women's housework time" (John and Shelton 1997:188).

While John and Shelton (1997) found little difference between black and white women's housework time, a more recent study by Artis and Pavalko (2003:758) discovered that "non-White women report more than 4% lower responsibility for household tasks compared with White women." Sayer and Fine (2011:261) confirm these findings, "Black married women are less likely to engage in core housework." Unlike John and Shelton (1997) who reported differences in men's housework time by race, Sayer and Fine (2011:261) report "all men do between 35 and 40 min of core housework a day" (*sic*). They further note there is no significant difference between by race in men's daily housework (Sayer and Fine 2011:261). However, Sayer and Fine (2011:261) note

"[differences] by race-ethnicity in occasional housework are more substantial: just over 1 h per day among White men compared with about…35 min for Black" (*sic*). Thus, it does appear some difference exists between black and white men's housework. Sayer and Fine (2011:261) explain "earlier research that reported Black married men did more housework than White married men looked only at aggregate housework and thus missed key racial-ethnic variations in core and occasional household chores." It is important to note Sayer and Fine (2011:261) explain "the gender gap in core housework is…lowest for Black married couples." Thus, the housework gap and pay gap between black men and women is smaller than the gap between white men and women. Regarding income, Sayer and Fine's (2011:263) results parallel John and Shelton's (1997).

As women's housework hours decrease, they ideally will be able to dedicate more time to the paid workforce, thus increasing their wages and closing the wage gap. Moreover, it is likely that women living in multigenerational housing situations with fewer children will have less housework than other women (thus increasing their wage and narrowing the wage gap). Also, multigenerational households may provide more earners in the household again increasing women's wages and narrowing the wage gap. These factors all play important roles in women's and men's wages. Taken together, these factors should predict black and white women's and men's wages.

GEOGRAPHIC LOCATION AND WAGE INEQUALITY

The research on geographic location and the race/gender pay gap is sparse. Some research examines racial economic inequality in the South, but little examines the gender pay gap in the South, and none examines the race/gender pay gap in the South. There is slightly more research on urban/rural wage gaps and gender and race, but this area is still

lacking. While these areas lack information, they are still important constructs which should be examined more closely.

When examining wage inequality and geographic location it is important to examine industry by region. The Geographic Profile of Employment and Unemployment (2012), conducted annually by the Bureau of Labor Statistics, shows for each geographic region (Northeast, Midwest, South, and West) the largest industry is education and health services. For Southern states, wholesale and retail trades, and professional and business services follow education and health services. Together, these three industries make up about 48 percent of jobs in the South. Blue-collar/trade occupations, on the other hand, make up only about 28 percent of jobs in the South (Geographic Profile 2012:35-36). Additionally, it is important to note income by region. DeNavas-Walt et al. (2013:6) report that Southern households have the lowest median income, at $48,033 in 2012. While the industry in the South mirrors that of other states, median household income is substantially lower.

Another important factor to consider when examining geographic location is commute time. A substantial amount of information exists on commute time and reasons for differences in commute times. However, less information investigates the impact of commuting on wages. As with region and urban/rural wages it is important to further analyze this variable.

Region and Wage Inequality

According to Rankin and Falk (1991:225) "*Place matters.*" Geographic area is an important factor when examining racial economic inequality. The gender/race wage gap is well documented. However, the wage gap is not uniform for all regions or cities and

towns (Tomaskovic-Devey and Roscigno 1996:565). With this in mind, it is important to discover the impact of region (particularly the South) in pay inequality.

Noss (2012:3) reports the Gini Index[4] of Southern states is remarkably higher than most other states. She further reports, of the five states with a Gini Index higher than the U.S. national average, two are Southern states (Noss 2012:3). Additionally, research on income inequality conducted by the Pew Research Center shows substantial regional differences. Pew Researchers created the "Residential Income Segregation Index," which examines where people live by income. They explain "[the] maximum possible RISI score is 200. In such a metropolitan area, 100% of lower-income and 100% of upper-income households would be situated in a census tract where a majority of households were in their same income bracket" (Taylor and Fry 2012:3). Thus, an area with an RISI score of 200 has perfect residential inequality and an area with an RISI score of zero has perfect residential equality. The higher the RISI score, the greater the income inequality. Based on RISI scores, Taylor and Fry (2012:4) discover of the "30 largest metro areas…metro areas in the Southwest have the highest average RISI score (57), followed by those in the Northeast (48), Midwest (44), West (38) and Southeast (35)."

However, this data examines the pay gap in general, it does not examine the racial, gender, or race/gender wage gap. To better understand the regional wage gap it is necessary to examine the role of race. When considering the racial wage gap it is important to look to the region in which the largest proportion of African Americans live, the South (Bee 2012, Rankin and Falk 1991). Rankin and Falk (1991:226) explain "[given] the historical pattern of racial differences in the South, it is safe to assume that

[4] The Gini Index is a measure of inequality within a society. Scores range from 0 to 1, where a 0 indicates perfect equality or equal distribution of income, while a 1 indicates prefect inequality or unequal distribution of income (Noss 2012:1).

rural blacks are even more disadvantaged in both human capital and earnings." Lichter (1989:436) also notes "postbellum southern rural blacks have long represented on of the most economically disadvantaged segments in American society." Given the large proportion of African Americans in the South and historical economic inequality, it is important to examine this group separately.

Rankin and Falk (1991:229) found "that non-Black Belt blacks earn 63 percent of white earnings and Black Belt blacks earn only 57 percent of white earnings." They further discover, after controlling for other factors, "the effect of Black Belt residence is to reduce the earnings of southern householders as a whole [black and white householders] by nearly 6 percent" (Rankin and Falk 1991:231). They conclude "measures of employment hardship and economic structure, takes on a regional character – one that is closely tied to racial composition" (Ranking and Falk 1991:231). Thus, for African Americans in the Black Belt economic inequality is greater than other regions in the South. A later study by Falk and Rankin (1992:304) found "average annual earnings…are lower for blacks living in the South compared to non-South blacks, and for blacks in the Black Belt compared to non-Black Belt blacks." Specifically the authors found "Southern blacks earn 81 percent of what non-southern blacks earn" (Falk and Rankin 1992:304). Falk and Ranking (1992) and Rankin and Falk (1991) conclude the differences in income are due in large part to region, rather than human capital factors and age. Lichter (1989) also found substantial differences in employment discrimination between African Americans and whites in the South even after controlling for human capital variables and gender. These results suggest that African Americans in Southern states may face more inequality than other regions of the United States.

However, Slack and Jensen (2002:223) examined unemployment and race but found a very weak association with region. In fact, the authors found living in the South was not correlated with unemployment and people living in the West or Midwest were actually worse off. This is perplexing considering the data set used by Slack and Jensen (2002) is the same as that used by Lichter (1989). The difference may be due to dependent variables; Slack and Jensen (2002) measured unemployment while Falk and Rankin (1992) and Rankin and Falk (1991) measure annual earnings. Again, however, this does not explain Slack and Jensen's (2002) and Lichter's (1989) conflicting findings (they both examine employment). Perhaps time has changed the importance of region. Considering these results it is necessary to further explore the importance of region and race on income.

Additionally, in a Census report published by Semega (2009:2), a graphic shows the wage gap between men and women in Southern states is 77.9 percent (the national average) or lower. In at least four Southern states (Arkansas, Louisiana, Mississippi, and Alabama) women's earnings were less than 75.4 percent of men's (well below the national average) (Semega 2009:2).

Finally, Tomaskovic-Devey and Roscigno (1996:578) found as the proportion of blacks increases, the percent of blacks in poverty also increases but the percent of whites in poverty decreases. Thus, with larger proportions of African Americans come higher rates of racial discrimination (Tomaskovic-Devey and Roscigno 1996, Cohen 2001). Rastogi et al. (2011:7) note "[the] South was the region where the Black alone-or-in-combination population comprised the greatest proportion of the total population." With the South having the greatest over all household income inequality, the highest

proportion of African Americans, and African Americans and women earning less than whites and men it is likely African American women face greater income inequality in the South.

Commute and Wage Inequality

When examining geographic location it is also important to consider commute times. There is a wealth of research documenting differences in commute times and distances between men and women and African Americans and whites and exploring reasons for these differences (McLafferty and Preston 1991, Myers and Saunders 1996, Singell and Lillydahl 1986, Elliot and Joyce 2004, Ruppert et al. 2009, Law 1999, Turner and Niemeier 1997). Research on the commute gap shows rather consistently that men spend more time commuting than women, women work closer to home than men, and African Americans spend more time commuting than whites (McLafferty and Preston 1991, Johnston-Anumonwo 1997, Myers and Saunders 1996, Elliott and Joyce 2004).

Elliot and Joyce (2004:419) studied several large cities and found "marriage, but not children…significantly correlates with shorter commute times." Crane (2007) found similar results in his national study. Perhaps most importantly, when research controls for mode of transportation, marriage and race no longer have significant effects on commute time (Elliot and Joyce 2004:424). Johnston-Anumonwo (1997) also found African Americans and women rely on public transportation more than whites and men in Buffalo, New York. Myers and Saunders' (1996) research on Houston commute times also shows African Americans are more likely to use public transpiration than whites. Crane's (2007) national study also found similar results. These authors show public transportation is typically slower than private transportation, thus increasing commute

times for individuals who rely on public transport. Where African American women (and women in general) are more likely to use public transportation, their commute times will typically be longer than other groups (Elliot and Joyce 2004, Johnston-Anumonwo 1997, Myers and Saunders 1996, Crane 2007).

Importantly, Crane (2007:304-306) found from 1985 to 2005 there has been a substantial increase in the number of all women using private transportation, which has led to an increase in the gender commute gap. That is, as women use a faster method of transport their commute times decrease (while men's commute times remain about the same because their mode of transport has not dramatically changed) thus increasing the commute gap (Crane 2007:304-306).

While many studies examine the commute gap, fewer examine the impact of commute on the gender/race wage gap. One early study by Madden and Chen Chiu (1990) shows in Philadelphia, there is no difference between job and residence location decisions and the actual pay gap for white men and women and for African Americans, the actual gap is less than the predicted gap. For Detroit, the actual pay gap was slightly higher for black and white men and women than predicted. However, differences were not statistically significant (Madden and Chen Chiu 1990:363-366). The authors conclude in Detroit "location constraints imposed by marriage slightly decrease the earnings of…married women relative to their husbands" (Madden and Chen Chiu 1990:366). However, because these are slight differences, the authors ultimately conclude "[restrictions] on commuting distances or on intrametropolitan residential location do not lower the earnings of employed married women relative to men" (Madden and Chen Chiu 1990:367).

A more current study by Elliot and Joyce (2004) finds that women who commute longer by private transport typically work in higher paying jobs. However, this only applies to women utilizing private transport, the authors note "[among] women who use public transit, longer commute times offer no net benefit" (Elliot and Joyce 2004:431). They further explain "the negative effects of being black…are statistically significant only among women who use private transit to get to work" (Elliot and Joyce 2004:431). Thus, the penalty for utilizing public transportation is greater than the race penalty.

Additional research is necessary to better understand the effect of commuting on the gender/race pay gap. However, taking commute times and region together will allow for a better understanding of the gender/race pay gap.

CHAPTER IV
Methodology

This master's thesis explores inequality between African American and white men and women. This research attempts to discover how two structural factors, family structure and geographic location, affect African American men and women and white men and women blue-collar/trade workers differently. This research utilizes a sex stratification and intersectional lens to show women and men are not homogenous groups, experiencing inequality in the same way. Rather, these groups are affected by race, which creates different inequality experiences for African American men and women and white men and women.

This research utilizes data from the 2011 Panel Study of Income Dynamics (PSID) to conduct an ordinary least squares (OLS) regression to determine how structural variables affect black and white men and women blue-collar/trade workers differently. To conduct OLS the Statistical Package for the Social Sciences (SPSS) was used.

DATA

Initially, data from the 2012 General Social Survey (GSS) was used for this research. However, this data yielded extremely small sample sizes (black women N = 17, black men N = 16, white women N = 27) due to missing data within the dependent variable, income. To remedy this problem a new data set was selected, The Panel Study of Income Dynamics (PSID). As is seen in Chapter V, small sample sizes are no longer a concern with PSID data.

The Panel Study of Income Dynamics, a longitudinal study which began in 1968, "is directed by faculty at the University of Michigan" (PSID 2014) "with data collection

carried out by the Institute for Social Research" (PSID Overview Brochure). PSID data were collected annually from 1968 to 1997, and from 1999 forward data were collected, by interview, every other year (PSID FAQ 2014). PSID began with a nationally representative sample "of about 18,000 individuals living in 5,000 families in the United States" (PSID Overview Brochure). The 2011 wave alone has a sample size of 8,907 participants.

With such a large sample size, it is important to discuss sampling techniques. PSID researchers explain, "[all] 1968 sample members have the PSID 'gene,' and they are followed in all subsequent waves across their entire lives, regardless of where they live." In addition to following original PSID participants, the "PSID gene" is passed along from parent to child. Thus, children (and children of children and so on) of original PSID participants are followed throughout their entire lives (PSID Overview Brochure). Also, according to the PSID Overview Brochure, "[in] 1997/1999, a sample of 511 immigrant families was added to enhance representativeness." After this addition, PSID reports the sample continues to "closely resemble the national population even after more than 40 years of interviewing" (PSID Overview Brochure).

Since 1968, the survey has collected data on "employment, income, wealth, expenditures, health, marriage, childbearing, child development, philanthropy, education, and numerous other topics" (PSID 2014). Additionally, the PSID conducts supplemental interviews on child development; health and aging; disability and use of time; and food and nutrition. With the expansive variable list, PSID data allowed this research to examine nearly all of the same variables found in the 2012 GSS (with few exceptions, see below).

PSID collects both household and individual data, but this research uses only individual level data. The survey asks respondents to identify as either the head of the household or the wife of the head of the household. For purposes of this research, questions asking only about the head of the household were used. That is, all individual level data used in this research are data gathered about the head of the household (for example, the head's income, head's occupation, and so on).

This mode of collection may prove problematic for many reasons. First, if a woman identifies as both head and wife it is unclear to which question she would respond. Second, this does not capture any information about male non-heads which does not allow for a comprehensive analysis of gender inequality in the home.

POPULATION

Blue-Collar Trade Occupations

Historically, the term "blue-collar" described the color of a worker's shirt. Machine workers, factory workers, and other manual laborers commonly wore blue or other dark shirts to hide dirt stains, while professionals often wore laundered white shirts (Wickman 2012). An Iowa newspaper from 1924 explained "'[if] we may call professions and office positions white collar jobs, we may call the trades blue collar jobs'" (quoted in Wickman 2012). Wickman (2012) also notes in the 1870s "Levi Strauss began to make denim…and the fabric quickly became popular with coal miners and other rugged Westerners." Additionally, other clothes traditionally worn by manual laborers were manufactured in dark colors (Wickman 2012). Thus, the term blue-collar historically refers to workers in trade and manual labor occupations. While workers in these occupations may not wear blue today, the term is still used today to refer to these workers.

While Wickman (2012) explores the historical use of the term blue-collar, other scholars utilize current Census occupational codes to define blue-collar. For example, according to Fronczek and Johnson (2003:9) "traditional 'blue collar' occupational groups [are]: construction, extraction, and maintenance occupations." The authors further note blue collar workers were the group with the smallest pay gap between male and female workers (Fronczek and Johnson 2003:4). Additionally, in Bibb and Form's (1977:979) study of blue-collar workers, "respondents reported employment in eight major Census industry groups: mining and construction, manufacturing, transportation-communications-utilities, wholesale and retail trade, finance-insurance-real estate, services…and public administration." They further explain "[occupational] categories included skilled workers and foremen, operatives, transportation operatives, laborers, service workers, and private household workers" (Bibb and Form 1977:979).

With these definitions in mind, it was necessary to craft a definition of blue-collar trade occupations for this research. Blue-collar/trade workers, as used in this thesis, includes workers in building and grounds cleaning and maintenance occupations; personal care and service occupations; construction trades; extraction workers; installation, maintenance, and repair workers; and production occupations. These occupational categories are in line with those used by Fronczek and Johnson (2003) and Bibb and Form (1977). Further, these categories are in line with the historical understanding of "blue-collar" occupations. These are manual and labor trades in which workers may wear darker shirts to hide stains. Additionally, with the inclusion of personal care and service occupations, more women were included in blue-collar trade occupations.

It must be noted, while the occupational categories used here to operationalize "blue-collar" are in line with previous literature, these categories are not intended to be exhaustive. Instead, these are arguably logical given the traditional meanings of the term "blue-collar." However, because these categories are not exhaustive, the term "blue-collar" is not used. Instead the term "blue-collar trade occupations" is used to indicate the use of manual labor occupations.

It is also important to note, when asking about occupations, PSID asks about multiple employers. That is, the PSID survey asks for information about the head's first, second, third, and fourth occupations. However, most head of households have only one job. When information about a second occupation was requested most (N = 4,844) said they did not have a second job. Because most individuals said they did not have a second job, and because this research is concerned with only primary occupations, only the PSID question about the head's first job was included in this research. For exact coding of occupations, see Table 4.1.

Age

To narrow the focus of this research, age was limited to individuals between 30 and 65. In limiting the age of respondents not only narrows the scope of the research, but also narrows the research to include only individuals who are likely in a permanent career. Often, younger individuals are in college or are still determining their desired career, making them more likely to change jobs. However, one hypothesis embedded in this research is older individuals have likely chosen their career and have likely remained in

Table 4.1. Operational Definitions[5]

Variable	Measurement
Income	Wages and salary of the head of the household, actual dollar amount, before taxes or other deductions, 2010
Blue-Collar Trade Occupations	2000 Census occupational codes 420-425 (Building and Grounds Cleaning and Maintenance Occupations); 430-465 (Personal Care and Service Occupations); 620-676 (Construction Trades); 680-694 (Extraction Workers); 700-762 (Installation, Maintenance, and Repair Work); 770-896 (Production Occupations)
Commute Time	Average time to and from work in minutes
Housework Hours	Time spent on housework (cooking, cleaning, doing other work around the house) in hours.
Number of Children	Number of persons in the family unit under 18 years of age
South	Geographical region of 2011 interview, 1 = South, 0 = Else

the same occupation for many years (perhaps even remaining at the same job). Thus, in limiting age, only individuals who have presumably chosen a blue-collar trade occupation as their career are included.

DEPENDENT VARIABLE

The dependent variable (Table 4.1) in this study is income of blue-collar/trade black men, black women, white men, and white women between the ages of 30 and 65. To examine each income group a "select if" method was used in SPSS to first select out the

[5] See Appendix B for exact wording of 2011 PSID survey questions and states included in "South" variable.

Table 4.1. Operational Definitions (Continued)

Variable	Measurement
More than 1 Generation	Combined: Relationship of the head/wife of first other family unit sharing the household to the head/wife of this family; Relationship of the head/wife of second other family unit sharing the household to the head/wife of this family; Relationship of the head/wife of third other family unit sharing the household to the head/wife of this family; Relationship of the head/wife of fourth other family unit sharing the household to the head/wife of this family. Then created a dummy variable: 1 = more than 1 generation in the household, 0 = only 1 generation in the household

proper occupational codes, then select the proper age range, sex, and gender. Below, the dependent variable is explained.

Income

Inequality is regularly studied by social scientists. However, inequality is an abstract concept with no concrete measure. Thus, selection of a concrete indicator is required to measure inequality. For this research, that indicator is wage. It is well documented a pay gap exists between men and women, blacks and whites, and black men, black women, white men, and white women. Additionally, substantial research has used income as a dependent variable to examine inequality between these groups (Waldfogel 1997, 1998; McLanahan and Percheski 2008; Lundberg and Rose 2002, 2000; Budig and England 2001).

In the 2011 PSID income is an interval/ratio variable. That is, it measures the exact amount of income received by the head of the household unlike some data which codes only income ranges. Thus, the variable did not require recoding. For further information about this variable see Table 4.1.

INDEPENDENT VARIABLES

This research focuses on two main structural phenomena and their impact on wage: family structure and geographic location. As with income, these are abstract variables. In operationalizing family structure, several variables are used: *number of children*, *number of generations in the household*, and *head's hours of housework completed*. For geographic location the variables *commute time* and *region* are used. Each phenomenon and the corresponding variables are explained below.

Family Structure[6]

This construct is measured using three variables: *number of children*, *number of generations in the household*, and *head's hours of housework*.

Number of children

Number of children is an interval/ratio variable ranging from zero to eleven (for white women). This variable measures the exact number of children, under the age of 18, living in the family unit. Family unit, as used by the PSID, means "a group of people living together as a family. They are almost always related by blood, marriage, or adoption. And

[6] Initially, using GSS data, this research examined the previously mentioned variables along with age of children, number of earners in the household, and respondent's spouse's level of housework. However, PSID data did not include these questions. PSID data does ask about the wife's level of housework, but does not similarly ask about the husband's level of housework. In order to avoid bias and an incomplete answer, this question was removed from the analysis. Additionally, PSID does not ask the age of all children, but instead only asks the age of the youngest child. While this question may have been useful, most respondents reported not having any children. This resulted in a substantial number of missing cases, which in turn led to the removal of this variable. Lastly, PSID does not gather data on the number of earners in the household, which, unfortunately, led to the removal of this variable.

they must all be living in the same [household unit]" (PSID FAQs 2014). Because this variable recorded the exact number of children in the household, it was not recoded.

Number of generations in the household

This variable was created by the research by combining several variables. PSID does not specifically ask how many generations are in the household, instead a series of questions ask what relationship the "first other family unit," "second other family unit," "third other family unit," and "fourth other family unit" has to "this family unit" (PSID Codebook 2011). The researcher first made these variables into dummy variables where one means the first, second, third, or fourth family shares some relationship to this family unit, and zero means there is no other family unit in the household. Next, these variables were added in SPSS, using the compute variable function. This created a variable ranging from zero to four, where zero mean there were no other family units in the household, and one through four meant there was one or more other family unit in the household. Lastly, this variable was recoded into a dummy variable, where one means there is one or more other family generation in the household, and zero means there are no other family generations in the household. This created a dichotomous variable to determine the impact of one or more generations in the household on income.

Head's housework hours

As with number of children, housework hours measures the exact number of hours the head completes in a week. Thus, this variable is interval/ratio and did not require recoding. Values for this variable range from zero, or no hours spent on housework, to 100 hours per week for (black men).

Geographic Location

As with family structure, initially, this variable included the previously stated variables and city size. GSS data included a variable asking respondents about the size of the city in which they reside, however, PSID does not gather this information. Instead, PSID asks for the "size of the largest city in the county of residence" (PSID Codebook 2011). While this question may have proved interesting, this data is unfortunately not released to the general public. To provide anonymity, PSID does not release this information unless special access is granted. Thus, this variable was removed from analysis.[7]

Commute

Like many other variables, this variable records an exact number, making this an interval/ratio variable. However, this variable included two answer choices ("it varies" and "travels from home to temporary lodging new worksite") which were recoded to be missing. These choices were not numerical values which resulted in abnormal beta values. In order to make this variable a true interval/ratio variable, these two answer choices were coded as missing. Additionally, the answer option "no commute" is coded as "997," again resulting in abnormal beta values. To eliminate this problem, "no commute" was recoded to "0," representing a zero minute commute.

Region

The last variable, region, was initially coded with several region categories. This variable, as it appears on original PSID data, is nominal. To make this variable interval/ratio, a dummy variable was created where one represents South and zero represents all other regions of the United States. In creating this dichotomous variable, the regression analysis determines the impact of living in the South on wages.

[7] See description of variable *region* below.

South was chosen as the reference variable because existing research indicates income inequality is greater between men and women and black and whites in the South. Thus, to understand the impact of living in the South, only Southerness is examined.

HYPOTHESES

For this analysis, four regression analyses were conducted, thus separate test hypotheses were created for each model. These hypotheses are based on the findings of previous literature (see Chapter III) (see also Chafetz 1984; McLanahan and Percheski 2008; Waldfogel 1997; Blau 1998; Sayer and Fine 2011; John and Shelton 1997; Tomaskovic-Devey and Roscigno 1996; Rankin and Falk 1991, 1992; McLafferty and Preston 1991).

For black men, the following hypotheses are used:

- As number of children increases, black men's wage will increase. However, the effect for black men will not be as great as for white men.
- Having more than one generation in the household will decrease black men's wages.
- As housework hours decrease, black men's wages will increase.
- As commute time increases, black men's wages will decrease.
- Living in the south will decrease black men's wages

For black women, the following hypotheses are used:

- As number of children increases, black women's wages will decrease. The decrease, however, will not be as pronounced as that experienced by white women.
- Having more than one generation in the household will decrease black women's wages.

- As housework hours decrease, black women's wages will increase.
- As commute time increases, black women's wages will decrease
- Living in the South will decrease black women's wages

For white men, the following hypotheses are used:

- As number of children increases, white men's wages will increase. This increase will be greater than that experienced by black men.
- Having more than one generation in the household will decrease white men's wages.
- As housework hours decrease, white men's wage will increase.
- As commute time increases, white men's wages will increase
- Living in the South will decrease white men's wages.

For white women, the following hypotheses are used:

- As number of children increases, white women's wages will decrease. This decrease will be greater than that experienced by black women.
- Having more than one generation in the household will decrease white women's wages.
- As housework hours decrease, white women's wages will increase.
- As commute time increases, white women's wages will decrease.
- Living in the South will decrease white women's wages.

ORDINARY LEAST SQUARES REGRESSION

Ordinary least squares (OLS) regression, or multiple regression, was conducted using SPSS to determine the impact of each of the previously mentioned variables on black and white men's and women's wages. OLS regression allows for a statistical analysis of one

dependent variable and multiple independent variables (Mertler and Vannantta 2010:159). In other words, it can be determined the impact of multiple independent variables simultaneously on the dependent variable. With OLS regression, each independent variable is tested on the dependent variable individually (resulting in a beta value), providing information about the relationship between a single independent variable and a single dependent variable. OLS regression also tests the combined effects of the independent variables on the dependent variable (resulting in a beta weight). By testing the combined effect, OLS regression shows the effect of each independent variable as they interact together on the dependent variable while controlling for all others. Thus, the independent variables can be compared by interpreting standardized coefficients to determine which has the greatest impact on the dependent variable.

OLS regression is a predictive model; that is, it predicts the impact of each independent variable on the dependent variable. In this research, OLS regression predicts the impact of family structure and geographic location on wage of each group. That is, it determines the strength of the relationship between each independent variable and the dependent variable and whether the relationship is positive or negative. The regression equation (Equation 4.1) shows the additive and predictive effect of OLS regression.

Equation 4.1

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_k X_k + e_i$$

Equation 4.2 shows the regression equation used for this thesis:

Equation 4.2

$$y = \beta_0 + \beta_{\textit{number of family generations in household}} X_{\textit{number of family generations in household}} + \beta_{\textit{number of young children}} X_{\textit{number of young children}} + \beta_{\textit{head's level of household work}} X_{\textit{head's level of household work}} + \beta_{\textit{time travel to work}} X_{\textit{time travel to work}} + \beta_{\textit{region at the time of interview}} X_{\textit{region at the time of interview}} + e_i$$

Where *y* is the dependent variable: black men, black women, white men, and white women's income.

For this analysis, four separate regression analyses were conducted, one for each racial/gender group. Screening for each group was conducted. Initial screening revealed substantial missing cases for each group. For black men, there were 71 missing cases (20.06 percent), for black women there were 25 missing cases (14.62 percent), for white men there were 105 missing cases (13.67 percent), and for white women there were six missing cases (7.23 percent). Due to substantial missing data, missing cases were deleted from the analysis.

For black men this resulted in removing missing cases from two variables: income and commute. After deleting missing cases, only two missing cases remained. This is well within the allowable limits for missing data. The deletion of these cases resulted in a sample size of 279 black men.

For black women missing cases were deleted only from the variable income. After deleting these cases for black women, seven missing cases remained, again, within the acceptable limits for missing cases. Black women were left with a sample of 145.

For white men and women, missing cases were deleted from the variable commute. After deleting these cases for white men 34 missing cases remained, while three missing cases remained for white women. This left a sample size of 658 white men and 76 white women.

Each racial/gender group also had one or more outliers. Malhalanobis distance was conducted to determine which variables were outliers (critical value 22.457). White men had the most outliers, while white women had the fewest. After conducting Malhalanobis distance, a *select if* method was used to select out cases with a Malhalanobis score greater than 22.457.

Each racial/gender group was also screened for normality and linearity, which resulted in several transformations. Upon examination of scatterplot diagrams, descriptive statistics, and scatter dot diagrams it was determined transformations (or statistical alterations to make the data more normal and linear) were necessary for income and commute for all groups. For all racial/gender groups income and commute were transformed to correct for a moderate skew (by taking the square root of each variable). For white men only, housework was also transformed to correct for a moderate skew. After conducting these transformations, normality and linearity were acceptable.

Once data screening was conducted, four regression analyses were conducted using SPSS. Regression results and descriptive statistics are presented in Chapter V.

CHAPTER V
Results

This research examines the effect of family structure variables (specifically number of children, number of generations in the household, and housework hours) and geographic location variables (specifically living in the South and commute time) on blue-collar/trade, black and white men's and women's income. Recognizing men and women and African Americans and whites are not homogenous groups, this research attempts to discover how each variable may impact each of these groups differently.

Using the Statistical Package for the Social Sciences (SPSS), ordinary least squares regression was conducted for four models: black men, black women, white men, and white women. Results reveal only one theoretical model, white men, significantly predict income. Additionally, only geographic location variables, commute length and South, were significant in the white male model.

DESCRIPTIVE STATISTICS

Table 5.1 displays descriptive statistics for the dependent and independent variables. The dependent variable, income, is separated by race and gender, resulting in four dependent variables: income of black men, black women, white men, and white women. It is noteworthy that the sample size of white men is substantially larger than the other groups. While black men (N = 279) and women (N = 145) each have large sample sizes, white women (N = 76) have a considerably small sample size.[8] Additionally, based on sample size, it appears blue-collar/trade workers are not only gender segregated, that is men are

[8] White women's small sample size is likely the result of many factors, one of which being the survey language. The Panel Study of Income Dynamics (PSID) does not ask the sex of the respondent, instead it asks for the sex of the head of the household. It is likely, based on gender norms, many women consider their husband the head of the household.

Table 5.1 Descriptive Statistics

	black Men		black Women	
	Mean	Standard Deviation	Mean	Standard Deviation
Income	$28,461.51	$23,755.70	$16,322.98	$16,203.16
Commute (in minutes)	42.53	32.67	34.17	30.70
Housework (in hours)	8.87	10.99	13.48	13.24
Number of Children	0.90	1.26	1.20	1.44
South	0.71	0.45	0.66	0.48
More than 1 generation	0.09	0.29	0.15	0.36
	N = 279		N = 145	

more likely to be blue-collar/trade workers than women, but also racially segregated, that is black women are more likely to be blue-collar/trade workers than white women. This suggest black women are more likely to enter blue-collar/trade professions than white women, perhaps suggesting stereotypes and stigmas around women in blue-collar trade occupations are different for black women than for white women.

Table 5.2 displays independent samples T-test, testing significance in earnings between black men, black women, white men, and white women. It is important to note, consistent with existing literature, white men earn more than the other groups ($41,386.12), and earn significantly more than black women ($p < 0.001$, $\bar{x}$ = $16,322.98), black men ($p = 0.001$, $\bar{x}$ = $28,461.51), and white women ($p < 0.01$, $\bar{x}$ = $19,840.01).

Table 5.1. Descriptive Statistics (Continued)

	white Men		white Women	
	Mean	Standard Deviation	Mean	Standard Deviation
Income	$41,386.12	$66,392.12	$19,840.01	$20,075.29
Commute (in minutes)	45.41	43.52	33.79	26.56
Housework (in hours)	7.54	7.13	14.42	10.79
Number of Children	0.95	1.17	0.96	1.55
South	0.30	0.46	0.36	0.48
More than 1 generation	0.07	0.26	0.11	0.31
	N = 658		N = 76	

Also consistent with existing literature, black men earn significantly more than black women ($p < 0.001$), and white women earn more (although not statistically significantly, $p = 0.149$) than black women. Surprisingly, black men earn significantly more than white women ($p < 0.01$), a result contrary to existing income data. It is also worth noting, each group has a very large standard deviation, suggesting great variation in income among blue-collar/trade workers.

Commute times for blue-collar/trade black and white men and women resemble those of other studies: men spend more time commuting than women, with white men spend the most time commuting (45.41 minutes), followed closely by black men (42.53 minutes). However, unlike existing literature, blue-collar/trade black and white women's commute times (34.17 minutes and 33.79 minutes respectively) do not vary greatly. This suggests both black and white women in blue-collar/trade occupations may experience

Table 5.2 Independent Samples T-test: Mean Differences in Income by Race and Gender

	T	Significance
black women and white men	4.639	0.000
black women and black men	5.705	0.000
black men and white men	3.358	0.001
black women and white women	1.446	0.149
black men and white women	-2.985	0.003
white men and white women	2.887	0.004

geographical segregation, unlike existing research which suggests black women are more likely to face geographical segregation than white women.

Mean housework hours are not surprising or unusual. Women do more housework than men (with white women reporting 14.42 hours and black women reporting 13.48 hours of housework weekly), and black men (8.87 hours) do more housework than white men (7.54 hours). This supports gender stratification arguments and the idea of the second shift (Hochschild 2012). These findings demonstrate inequality between men and women within the home as well as outside of the home. These findings further support research indicating that black men report they are more involved in housework that white men (John and Shelton 1997; Orbuch and Eyster 1997). Further, these findings support previous research which suggests white women do more housework than black women, leaving black women more time to participate in work outside of the home, thus reducing pay inequality between black men and women. Again, this suggests inequality is present between black and white men and women.

Number of children is near parity for black men (0.90 children), white men (0.95 children), and white women (0.96 children). Black women, however, report having more children than these groups (1.20 children). Since African American women have more children on average than African American men, it may be many African American women are single mothers. The "hidden father" phenomenon may be occurring (fathers participate in children's lives but do not live in the same dwelling as the children), but statistical data may not reveal this (Cooley 2001; Vespa et al. 2013). Further, the standard deviation for each group is very large. Thus, there is actually a large range in number of children for each social group.

Also consistent with existing research, African Americans are more likely to live in the South than whites. Specifically, 71 percent of black male blue-collar/trade workers and 66 percent of black female blue-collar/trade respondents live in the South compared to only 30 percent of white male and 36 percent of white female blue-collar/trade respondents. With a larger number of African American men and women living in the South, the significant income gap is not surprising.

Lastly, it is interesting to note female headed households of either race are more likely to live with more than one generation than male headed households. As with the variable, living in the South, this variable is a dummy variable. Thus, this variable indicates the percentage of household heads living with more than one generation in the household. Specifically, black women are most likely to live with more than one generation, with 15 percent of black women living in a multigenerational household. Eleven percent of white women live in multigenerational households, while only nine percent of black men and seven percent of white men live in multigenerational

households. These findings are consistent with existing research which states income is often a motivating factor in creating multigenerational households. Black women, the lowest income group, is also the group most likely to live with more than one generation, followed by white women (the next income group), black men (the third income group), and white men (the highest income group). Thus, the lowest earners may be attempting to supplement income by living in multigenerational arrangements.

Lastly, as with income, each variable has a large standard deviation suggesting a great amount of variation among blue-collar/trade workers.

CORRELATIONS

Tables 5.3 through 5.6 display Pearson's bivariate correlation coefficients for each racial and gender group. These tables show whether a correlation (or association or relationship) exists between the dependent variable, income, and each independent variable (listed in the right hand column). Correlations are either positive (or both variables experience change in the same direction, either variables increase or both decrease) or negative (both variables experience change in opposite directions, one variable increases while the other decreases and vice versa). Additionally, the closer a correlation is to a perfect +/- 1.00, the stronger the statistical relationship.

Table 5.3, correlations for black men, show only one variable, commute, has a statistically significant relationship with income. However, this is a very weak relationship ($r = 0.169$). While this is a weak to moderate relationship, this correlation suggests as commute time increases, income also increases, and vice versa.

Black women (Table 5.4) have two significant correlations: commute time and more than one generation in the household. As with black men, a positive correlation

Table 5.3 Pearson's *r* Correlation Matrix (Black Men) N=279

	1	2	3	4	5
1. Income					
2. Commute	0.169**				
3. Housework	-0.040	-0.061			
4. Number of Children	-0.031	-0.075	0.083		
5. South	0.024	-0.002	-0.020	-0.092	
6. More than 1 Generation	-0.090	0.037	0.072	-0.062	-0.079

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 5.4 Pearson's *r* Correlation Matrix (Black Women) N=145

	1	2	3	4	5
1. Income					
2. Commute	0.142*				
3. Housework	-0.135	-0.123			
4. Number of Children	-0.085	-0.038	0.191*		
5. South	0.041	0.174*	-0.067	0.087	
6. More than 1 Generation	-0.141*	0.005	-0.135	-0.204**	-0.245**

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 5.5 Pearson's *r* Correlation Matrix (White Men) N=658

	1	2	3	4	5
1. Income					
2. Commute	0.189***				
3. Housework	-0.056	-0.021			
4. Number of Children	0.066*	0.059	0.018		
5. South	-0.076*	-0.012	-0.050	-0.021	
6. More than 1 Generation	-0.031	-0.029	0.014	-0.153***	-0.009

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 5.6 Pearson's *r* Correlation Matrix (White Women) N=76

	1	2	3	4	5
1. Income					
2. Commute	0.008				
3. Housework	-0.090	0.023			
4. Number of Children	0.078	0.035	0.200*		
5. South	-0.264*	0.021	0.243*	0.080	
6. More than 1 Generation	0.169	0.166	-0.127	-0.135	-0.007

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

exists between income and commute, but it is a very weak relationship (r = 0.142). The variable more than one generation in the household, on the other hand, has a weak negative relationship with income (r = 0.141). This means as the number of family generations in a household increases, black women's income decreases. Thus, for black women, having more than one generation in the household negatively impacts income.

Table 5.5 indicates white men have three statistically significant relationships of independent variables with income: commute time, number of children, and living in the South. Commute (r = 0.189) and number of children (r = 0.066) are both positively correlated to income, living in the South is negatively correlated to income (r = -0.076) and each are a weak relationship. That is, the change in each independent variable will not greatly impact white men's income. Additionally, it is important to note, while black men and women also experience an increase in income with longer commute times, white men experience the greatest increase in income from commute time.

Lastly, for white women (Table 5.6) only one variable, living in the South, is significantly correlated with income. As with white men, this is a negative correlation. While the relationship is weak (r = -0.264) this is the strongest correlation for any of the groups. It is interesting to note living in the South is not significantly correlated with black men's or women's income. Perhaps even more interesting, the relationship that does exist between living in the South and black men's income is positive. That is, while not statistically significant, living in the South may actually increase black men's income. This finding is contrary to existing evidence which suggests that not only is living in the South is a factor for black men's and women's income but it perhaps negatively impacts black income.

Another purpose of Pearson's bivariate correlation matrix is to assist in identifying multicollinearity. Multicollinearity exists when two or more variables are highly correlated (or measure the same phenomenon). Any variable with a correlation value greater than 0.8 is considered highly correlated. When two variables are highly correlated they measure the same construct and will generate overlap in the regression analysis. If a variable has a value of 0.8 or greater it is necessary to examine the correlated variables and remove one from analysis. Here, there are no correlation values 0.8 or greater. Thus, multicollinearity is not an issue in this analysis (see Tables 5.3-5.6).

REGRESSION RESULTS

Ordinary least squares regression was conducted to test the research hypotheses using commute, housework, number of children, living in the South, and more than one generation in the household to measure the theoretical predictors of income by race and gender. A regression analysis identifies statistically significant predictors, determines the impact of each variable individually and collectively on income. Regression results are displayed in Table 5.7 and indicate only one theoretical model, white men, is statistically significant and only two statistically significant variables, commute time and living in the South (for white men).

Black Men

The first column of Table 5.7 displays regression results for black men. Regression results indicate the overall model does not significantly predict black men's income (R^2 = 0.039, R^2_{adj} = 0.022, $F(5,273) = 2.229$, $p = 0.052$). The model's significance level, however, is just shy of significance. Not only does the model fail to significantly predict income, it also accounts for very little variance (2.2 percent) in black men's income (R^2_{adj}

Table 5.7 Ordinary Least Squares Regression Results

	black Men		black Women		white Men		white Women	
	b	β	b	β	b	β	B	β
Commute	5.512**	0.170	3.035	0.128	5.382***	0.183	-0.605	-0.021
Housework	-0.210	-0.021	-0.721	-0.129	-3.547	-0.057	-0.181	-0.027
Number of Children	-1.337	-0.021	-4.376	-0.091	3.870	0.052	8.759	0.130
South	2.601	0.014	-3.693	-0.027	-14.160*	-0.076	-40.610*	-0.266
More than 1 generation	-28.807	-0.095	-34.073*	-0.184	-5.918	0.102	41.429	0.185
R^2	0.039		0.068		0.048***		0.114	
R^2_{adj}	0.022		0.035		0.040		0.050	

**p<0.05; **p<0.01; ***p<0.001*

= 0.022). While the model is not significant it is interesting to note commute and income have a positive, significant relationship (b = 5.512). Commute time is the only significant value, but the relationship to income is weak (β = 0.170).

For black men, no hypotheses were supported. However, several results are noteworthy. First, the only significant variable, commute time, has a positive relationship with income. That is, as commute time increases, income also increases. This is contrary to existing literature and may be related to black men's blue-collar trade occupational status. Another result of interest is hypothesis three, which predicted an inverse relationship between number of children and black men's income and that this relationship would be stronger for white men than black men. The direction of this hypothesis is supported in part. Lastly, while not statistically significant, it is interesting to note the direction of the relationship predicted by hypotheses two and five is as expected.

Black Women

Moving right on Table 5.7, regression results for black women are displayed. Again, regression results indicate the overall model does not significantly predict black women's income (R^2 = 0.068, R^2_{adj} = 0.035, F(5,139) = 2.035, p = 0.077). This is a surprising finding given existing research (Glauber 2008; Waldfogel 1997; Bengtson 2001; John and Shelton 1997; Sayer and Fine 2011; Bee 2012; Rankin and Falk 1991; Elliot and Joyce 2004). For black women, only one hypothesis, having more than one generation in the household will reduce black women's income, is supported. These regression results indicate an inverse relationship between black women's income and more than one

generation in the household (b = -34.073). Additionally, results indicate this variable has the only predictive power on black women's income.

White Men

Regression results for white men follow those for black women on Table 5.7. These results indicate the overall model significantly predicts white men's income ($R^2 = 0.048$, $R^2_{adj} = 0.040$, $F(5,652) = 6.521$, $p < 0.001$). While the model is significant, the model accounts for very little variance in white men's income ($R^2_{adj} = 0.040$). Thus, these indicators only predict four percent of white men's income. Results indicate only two variables (commute time and living in the South) significantly contributed to the model. As with black men, commute time has the greatest predictive power of white men's income ($\beta = 0.183$).

For white men, only two hypotheses (hypothesis one and hypothesis four) were significant. Hypothesis one predicted white men's income would increase as commute time increases. Regression results confirm this finding (b = 5.382). Hypothesis four predicted living in the South would cause white men's income to decrease. This hypothesis was again supported by the regression analysis (b = -14.160).

White Women

The last column of Table 5.7 presents regression results for white women. Once again, the overall model does not significantly predict white women's income ($R^2 = 0.114$, $R^2_{adj} = 0.050$, $F(5,70) = 1.794$, $p = 0.125$). There may be several reasons for the lack of statistical significance. One reason may be the small sample size used here. This small sample size may not allow for great enough statistical power. Additionally, while some research examines the pay gap between blue-collar/trade men and women (Fronczek and

Johnson 2003; Bibb and Form 1977), it does not include these structural variables, nor does it examine race. Thus, the differences discovered in this research his may be due to a combination of occupational status of blue-collar/trade and race. However, these results also suggest these variables may be important factors for white women in any class. Only one hypothesis is supported by this model: hypothesis four, living in the South will decrease white women's income. This variable also has the only predictive power (β = -0.266).

SYNTHESIS

As noted, of all four models, only one (white men) was statistically significant. When regression models are compared, it appears the white female model varies the greatest. Specifically, for white women more than one generation is positively associated with income, while this variable is negatively associated with income for all other groups. Also, for white women, commute time negatively affects income but for all other groups this relationship is positive. Interestingly, for both white men and white women having children seems to increase income, while having children appears to decrease black men and black women's income. Lastly, black men are the only group for which living in the South has a positive effect on income.

Most interestingly is a comparison of beta weights (β column, Table 5.7). Beta weights allow variables to be compared within each regression equation to determine which independent variable has the greatest impact on the dependent variable, income. Here, beta weights not only differ for each group, but for each group a different variable has the greatest impact. That is, the variable with the highest beta weight is different for

each group. This suggests while some similarities exist in beta coefficients, the actual impact of variables varies greatly.

These results indicate substantial variation between income predictors for different racial and gender groups. While some similarities exist, race and gender apparently play a large role in predicting income.

CHAPTER VI
Discussion/Conclusion

This thesis examined inequality between black and white men and women in blue-collar trade occupations. The purpose of this research was to test theoretical explanations for differences in inequality between black and white men and black and white women. This thesis utilized a sex stratification and intersectional lens to examine the ways in which structural factors affect black and white men's and women's wages differently. It postulated that structural factors which may decrease white women's (or men's) wages may not also decrease black women's wages (or men's). This research proposed that black men and women do not experience inequality in the same way white men and women do, and thus, these groups must not be examined as homogenous groups. Additionally, this research was limited to blue-collar/trade workers between the ages of 30 and 65. In limiting the research by age, only individuals settled in a career are included. Limiting the research to blue-collar/trade workers examines a subset of the working population, this effort shows (as with race and gender) different groups experience inequality differently.

Ordinary least squares regression was conducted to test the theoretical models. OLS regression results show only one model, white men, was statistically significant with only two statistically significant predictors.

DISCUSSION

The hypotheses and structural factors used in this research were developed from Jane Saltzman Chafetz's (1984) sex stratification theory. Chafetz (1984) was interested in creating a macro theory of sex stratification and understanding how structural forces

affect inequality between men and women. In addition to this theory, intersectionality theory, as developed by Kimberle Crenshaw (1989), was used to explore differences between women and men of different races. Intersectionality theorists speculate that women are not a homogenous group, experiencing life and inequality in the same ways. Instead, these theorists state minority women often face additional barriers and challenges that majority women do not. Specifically, structural factors that may negatively impact majority women may not have the same effect on minority women. Using these theories, this research hypothesized that structural factors which negatively impact pay of white women may not always affect black women in the same way. Further, this research explored the way in which structural factors affect black and white men compared to black and white women.

Existing literature supports the idea that black and white women and men experience inequality differently. Further, existing literature confirms number of children, having more than one generation in the household, housework, region, and commute time significantly affect the wages of both black and white women. However, the findings from this research do not support previous findings. Results from ordinary least squares regression conducted in this thesis indicate this model is not significant for either black or white women. These contrary results suggest blue-collar/trade workers experience inequality differently than all working black and white women.

While the previously mentioned variables often have a negative effect on the wages of black and white women, the effect is often antithetical for black and white men. For example, while children often have a negative effect on wage for black and white women, for white men children are often a *pay premium*. However, for black men,

children may reduce pay. However, as with black and white women, previous research demonstrates these variables are important in predicting black and white men's wages. The findings in this thesis support existing findings, in part. The model for white men was the only significant model, supporting existing findings. However, only two variables, commute time and living in the South, were significant. For these two variables, however, both hypotheses were supported. The black male model, on the other hand was just shy of significant ($p = 0.052$). Because the black male model was so near significance it is important to note only one variable, commute time, is significant, but they hypothesis was not supported by the findings. Again, the lack of significance for black men may be linked to blue-collar/trade workers. Similarly, the lack of significant variables for white men may be due to having restricted the study population to blue-collar/trade occupations.

It is likely these findings contradict previous research for two main reasons. First, this research is limited to blue-collar/trade workers between the ages of 30 and 65. Prior research is not limited by occupation, but instead examines all workers as a homogenous group. This research is important because it addresses a very large gap in current literature. This research attempts to address this gap by examining only blue-collar/trade workers between the ages of 30 and 65. Second, this research used data from the PSID, unlike prior research. The use of a different data set may explain contradictory results. However, PSID, like other national data sets, utilizes a representative sample. While differences in data may explain some differences between this research and existing research, it likely does not account for all differences.

These findings are interesting, support an intersectional analysis, and the idea that social class plays an important role in inequality. This research suggests not only do race and gender interact to create differences in inequality, but also social class. Intersectional analyses typically place great emphasis on race, gender, and class. This research confirms the importance of these three factors, and perhaps suggests the impact of class is greater than that of race or gender. However, to better understand the impact of class, it may be necessary to explore different occupational groups.

LIMITATIONS

This research faced several limitations. Initially this research used data from the General Social Survey, which yielded extremely small sample sizes, resulting in the selection of a new data set. Ultimately the Panel Study of Income Dynamics was selected. However, using PSID data brought new limitations, specifically, the elimination of several variables and restructuring of analyses due to the wording of survey questions. Use of PSID data yielded large sample sizes for all groups ($N > 100$) except white women ($N = 76$). However, this sample size was still substantially larger than that yielded by the previous data set, and is acceptable for the statistical analyses. Unfortunately, this switch resulted in the removal of four variables: age of children, number of earners in the household, respondent's spouse's level of housework, and city size. PSID does not collect data on these variables, which lead to their removal. While the variables may have provided more understanding, five variables remained and still provided an in depth understanding of family structure and geographic location.

Another limitation, which in part led to the previous limitation, was with PSID data collection methods. PSID collects information about the head of the household and

the wife of the head. This survey does not collect information about husbands or partners. For example, the survey question about income specifically states "How much did (you/HEAD) earn altogether from wages or salaries in 2010" or "How much did (you/she) earn altogether from work in 2010" where you/she refers to wife (PSID 2011). Thus, PSID is only interested in information about the head of the household or the wife.

While PSID is a longitudinal, representative survey, this is a great limitation for the study. PSID claims information about husbands of heads is not collected because there are so few female head of households (PSID FAQs 2014). This, however, does not mean information about husbands of heads is unimportant. Additionally, as educational and pay gaps between men and women continue to close, it is likely more female headed households exist. Further, particularly with in the black community (but also increasingly with in the white community), there is a substantial number of single mother families. These families are, presumably, female headed households. Thus, in limiting data collection to heads and wives of heads PSID is greatly hindering analysis of inequality and family life.

FUTURE RESEARCH

Given the limitations faced by using PSID data, it is important to conduct future research to better understand black and white male and female blue-collar workers. Future studies could include the variables removed from this data. In including these removed variables, a richer understanding of family and work life for black and white male and female blue collar worker may emerge. It would also create a deeper understanding of wage inequality between these groups.

Additionally, future research may utilize a different data set that does not examine heads and wives of heads only. Examining black and white men and women generally (rather than just heads) would provide more information about the wage gap between blue-collar/trade workers and factors affecting wage. A more inclusive survey would also yield a larger sample size. These factors may affect significance and would very likely provide greater insight into wage inequality.

CONCLUSION

This research indicates gender, race, and class play an important role in understanding wage inequality. Factors shown to be significant predictors of wage for black and white men and women by previous research were not significant for black men and women and white women in this research. Specifically, the model used here significantly predicted wages of only white men, with only two significant variables, commute time and living in the South. For black men, the model was nearly significant ($p = 0.052$) (with only one significant variable, commute time), while for black and white women the model was not significant.

These findings may be due to two factors. First, this research was limited to blue-collar/trade workers. This suggests blue-collar/trade workers experience wage inequality differently than workers in general, supporting the importance of class in an intersectional analysis. Thus, it is likely that class, specifically blue-collar trade occupational status, plays an important role in determinants of wage inequality.

A second factor may be due to data collection methods. As noted, this research only examined heads of households. This limitation may have contributed to non-

significant findings. Additional research is necessary to better understand wage inequality between black and white male and female blue-collar/trade workers.

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APPENDIX A

2011 Panel Study on Income Dynamics Survey Questions

Income:

"*How much did (you/HEAD) earn altogether from wages or salaries in 2010, that is, before anything was deducted for taxes or other things?*"

Age:

"*Age of 2011 Head*"

Blue-Collar Trade Occupation:

"*Now I have a few questions about each of the jobs you have told me about. In your work for [EMPLOYER NAME], what (is/was) your (HEAD'S) occupation (when you left that employer)? What sort of work (do/did) you do? What (are/were) your most important activities or duties?*--CURRENT OR MOST RECENT MAIN JOB"

Sex:

"*Sex of 2011 Head*"

Race:

"*What is (your/his/her) race? (Are/Is) (you/he/she)* white, black, *American Indian, Alaska Native, Asian, Native Hawaiian or other Pacific Islander?*"

Number of children:

"*Number of Persons Now in the FU Under 18 Years of Age*"

Commute:

"*On a typical day, how many minutes ([CMJ] is/[MRMJ] was) (your/his/her) round trip commute to and from work?*"

Housework:

"*About how much time (do you/does HEAD) spend on housework in an average week? (I mean time spent cooking, cleaning, and doing other work around the house.)* The values for this variable represent the actual number of hours per week Head spent cooking, cleaning, and doing other work around the house."

Region:

"*Geographical Region of the 2011 Interview*. States were assigned to regions as follows:

NORTHEAST: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

NORTH CENTRAL: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

SOUTH: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Washington DC, West Virginia

WEST: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming."

More than one generation in the household:

"*Relationship of the Head (or WIFE/"WIFE") of the First Other Family Unit Sharing the*

Household to the Head (or WIFE/"WIFE") of This Family"; "*Relationship of the Head (or WIFE/"WIFE") of the Second Other Family Unit Sharing the Household to the Head (or WIFE/"WIFE") of This Family*"; "*Relationship of the Head (or*

WIFE/"WIFE") of the Third Other Family Unit Sharing the Household to the Head (or WIFE/"WIFE") of This Family"; "*Relationship of the Head (or WIFE/"WIFE") of the Fourth Other Family Unit Sharing the Household to the Head (or WIFE/"WIFE") of This Family.*" (These variables were combined to create a dummy variable.)