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Distributional Differences and the Native American Gender Wage Gap

Jeffrey Burnette [1,*] and Weiwei Zhang [2]

[1] Department of Sociology and Anthropology, Rochester Institute of Technology, 92 Lomb Memorial Dr, Rochester, NY 14623, USA
[2] Department of Sociology & Rural Studies, South Dakota State University, Brookings, SD 57007, USA; weiwei.zhang@sdstate.edu
* Correspondence: jdbgse@rit.edu

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Abstract: We use the Theil index and data from the 2012–2016, American Community Survey 5-Year Sample to document and analyze gender wage inequality for American Indian and Alaska Native (AIAN) women across single, multiracial and ethnic identity groups. Mean differences in hourly wages by gender contribute little to measured wage inequality when individuals are separated based upon their proximity to tribal homeland areas. Instead, we find between-group wage inequality is a function of glass-ceiling effects that differ by AIAN identification and homeland area. Differences in glass-ceiling effects across AIAN identity groups suggest the need to disaggregate data by AIAN ethnic identity. Furthermore, under certain circumstances, it may be appropriate to combine some racial AIAN identity groups into a single population even if the focus is to study policy impacts on citizens of federally recognized AIAN nations for those using government survey data.

Keywords: American Indians; Alaska Natives; stratification; wage inequality; gender gap; racial inequality; Theil index; homeland; racial classification; inequality decomposition

JEL Classification: D63; J15; J16; J31; J71; R12

1. Introduction

Scholars have utilized feminist and intersectional methodologies to criticize conventional quantitative methods that seek to document discrimination and understand labor market inequalities for decades (Baca Zinn and Dill 1996; Figart 1997; Cho et al. 2013; Harnois and Ifatunji 2011; Ifatunji and Harnois 2016). A fundamental premise in both these approaches is that an individual's identity is "more than a dummy variable" and treating it solely as an independent variable recognizes its influence on social, economic and cultural forces, and institutions, but ignores the determination of each of these factors on an individual's identity (Figart 1997). Much of this work has verified discrimination contains both a gender and racial component that cannot be decoupled because perceptions of race and gender are interdependent (Harnois and Ifatunji 2011; Ifatunji and Harnois 2016; Nawyn and Gjokaj 2014) yet this has left the experiences of American Indian and Alaska Native[1] (AIAN) women unexplored. We seek to fill this gap in the literature by documenting differences in the average and distribution of hourly earnings between AIAN women and men associated with identifying as AIAN alone or in

[1] We use American Indian, Alaska Native, Native American and Indians interchangeably to refer to individuals who maintain a tribal affiliation or community attachment to any of the original peoples of North America.

combination with another race or ethnicity.[2] We also contribute to the current discussion concerning the appropriate use of race and ethnicity categories by combining the results from intersectional analysis and conventional econometric methods. Together they have demonstrated that gender and racial inequalities in the labor market stem from and create differential observable characteristics often associated with higher wages, consequently the documented differences in the gender gap across AIAN identity groups can be used to inform researcher's ability to combine certain AIAN subpopulations.

Converting an individual's gender or racial identity into a single or even a few different variables is destined to result in the loss of valuable information that describes that person's experience. One reason the cost of essentializing individuals is accepted is because it allows researchers to make intergroup comparisons and inform policy due to its ability to document differential outcomes for historically marginalized communities. The quantification of AIAN identity poses additional obstacles to those typically associated with the social construction of a racial and gender identity because it includes a legal dimension derived from treaties between sovereign tribal nations and the U.S. federal government. This legal status is an indicator of past and current familial differences in opportunity, oppression and assimilation in the dominant U.S. culture from those not enrolled in a recognized tribe. Citizenship requirements for tribal nations are self-determined and can involve blood quantum, maternal or paternal descent or a combination of criteria. In addition, the federal government grants legal status to individuals ineligible for citizenship status but have been certified by federally recognized tribes to possesses a minimum degree of Indian blood. Consequently, AIAN identity of tribal citizens is not limited to those who identify as single-race AIAN or to those living on a federal Indian reservation. Limiting analysis to non-Hispanic, single-race AIANs in an attempt to filter those with legal status from those without provides an incomplete picture of the AIAN experience and because surveys that contain a large enough sample of AIANs to conduct multivariate analysis typically do not ask about enrollment status, there is little assurance that those selecting only an AIAN identity are tribal citizens.

The United States has a long history of reducing individuals to a set of statistical identities, that began with the 1790 decennial Census. Since then, it has changed the definitions, categories and processes it uses to define distinct subpopulations in order to produce data that accurately describes those who live within its borders. For example, Indians became a standalone category in 1860 but only counted if they resided within the general population.[3] In 1960, the Census switched from race being selected by an enumerator to self-identification. Since then, researchers have noted an increase in AIAN totals associated with increased identification (Eschbach 1993; Harris 1994; Passel 1976, 1997; Snipp 1986). Another major change took place in 2000 when individuals were offered the possibility of reporting multiple racial and ethnicity categories.

The change to a check-all-that-apply approach for race and ethnicity significantly complicated racial inequality analysis, and researchers have been struggling with the appropriate way to utilize race and ethnicity information from government surveys since (Bonilla-Silva 2004; Howell and Emerson 2017; McCall 2005; Saperstein and Penner 2012; Snipp 2003). In the most recent work, Howell and Emerson (2017) examined five different ways to operationalize race: Use the seven reported categories reported by the Census; use the seven Census race categories plus the Hispanic ethnicity category; use the ethnoracial pentagon measure; use the triracial measure suggested by Bonilla-Silva (2004) that classifies individuals as either white, honorary white or collective black; and use a seven-category measure that ranks individuals from very light to very dark based upon skin tone. They examine household income, education and self-rated health data and test the effectiveness of each operational method to predict social inequality. Ultimately, they conclude that the evidence suggests researchers

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[2] The term identity group(s) is used to refer to one or more of the following six mutually exclusive racial and ethnic AIAN identities: Hispanic, single-race AIAN; Hispanic, AIAN and white; Hispanic, AIAN and any other race combination; non-Hispanic, single-race AIAN; non-Hispanic, AIAN and white; non-Hispanic, AIAN and any other race combination.

[3] See Jobe (2004) for a more detailed history of enumerating AIANs within the U.S. Census.

should use the ethnoracial pentagon, a measure that places an individual into either the white, black, Hispanic, Asian, or Native American category.

Scholarship examining racial inequalities that includes AIANs has largely taken three different approaches: limit analysis based upon race and ethnicity to those who select only AIAN (Akee et al. 2017; Greenman and Xie 2008; Feir and Gillezeau 2018; Leichencko 2003); concentrate on location and examine only those living in reservation areas (Akee and Taylor 2014; Kimmel 1997; Mauer 2017) or focus on the effects of identifying as a member of a marginalized group and expand analysis to include those who identify in combination with another racial group (Burnette 2017; Davis et al. 2016). Recently, some studies have begun to apply an inclusive approach yet still distinguish between AIAN populations by reporting results separately for different self-identified AIAN groups (Huyser et al. 2010, 2014; Wise et al. 2017). An issue for all these studies is the lack of a consistent definition of who is American Indian and Alaska Native by the federal government[4] and the inability for data to filter between those who are enrolled members of one of the 572 federally recognized tribal nations and those who more closely align with the socially constructed definitions used for other racial groups.

Compared to other historically marginalized groups, AIANs have received little attention in the areas of earnings inequality and the gender gap with most of the literature focused on average differences (Greenman and Xie 2008; Huyser et al. 2014; Kimmel 1997; Leichencko 2003; Snipp and Cheung 2016). Until now, we know of only two studies that have included a distributional analysis of earnings for AIANs. Burnette (2017) used data from the Current Population Survey, Merged Outgoing Rotation Group (MORG) to compare changes in wages by percentile for AIAN men and women across the Great Recession within group and relative to white women. Overall, it found no noticeable trend for AIAN women or men by percentile but slightly lower average wages in 2014 than in 2003, but this may be due to the relatively small sample size of AIANs. This contrasted with the experience of white women who saw wage increases for those at higher percentiles relative to those at lower percentiles. All of this contributed to larger within-group inequality for white women than for either AIAN group from 2003 to 2014.

Akee et al. (2017) provided the most detailed discussion and analysis of distributional differences to date by linking restricted-use tax return data from the Internal Revenue Service (IRS) to U.S. Census Bureau Data at the individual level. Comparing within-group income inequality for non-Hispanic, single-race groups and Hispanics, they show that AIANs, blacks and Hispanics are disproportionately represented at the lower end of the total income distribution. Another important finding is that individuals from these groups have some mobility within group but generally remain fixed at the bottom part of the distribution from 2000 to 2014. We expand upon their work to incorporate gender and multi-racial identification as additional dimensions of analysis.

Recently, literature has emerged that details the complexity of AIAN identification and its intertemporal fluidity within the multiracial era (Liebler 2010; Liebler and Ortyl 2014; Liebler et al. 2016). The central theme to all of these studies is that AIAN identity is strongly tied to American Indian homelands.[5] Liebler et al. (2016) examines the identity responses of AIANs across the 2000 and 2010 census. They make a distinction between single-race and multiple-race AIANs with and

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[4] The U.S. Census defines "A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicate their race as 'American Indian or Alaska Native' or report entries such as Navajo, Blackfeet, Inupiat, Yup'ik, or Central American Indian groups or South American Indian groups". as American Indian or an Alaska Native. In contrast, the U.S. Bureau of Indian Affairs explains that "As a general rule, an American Indian or Alaska Native person is someone who has blood degree from and is recognized as such by a federally recognized tribe or village (as an enrolled tribal member) and/or the United States".

[5] American Indian homelands and homeland areas refer to American Indian, Alaska Native areas defined by the Census as "federally recognized American Indian reservations and off-reservation trust land areas, the tribal subdivisions that can divide these entities, state recognized American Indian reservations, Alaska Native Regional Corporations, and Hawaiian home lands. The statistical entities are Alaska Native village statistical areas, Oklahoma tribal statistical areas, tribal designated statistical areas, and state-designated American Indian statistical areas. Tribal subdivisions can exist within the statistical Oklahoma tribal statistical areas".

without Hispanic ethnicity to explore if those who alter their responses are different from those who do not. Their results show that those AIANs who had the same race and ethnicity responses in the 2000 and 2010 census and those who moved between single-race and multiple-race AIAN responses demonstrated a substantive cultural connection to AIANs in that they were likely to live in a homeland area and/or report a tribe. Consequently, they suggest researchers consider including multi-race AIANs in their analysis but caution against generalizing their results to be representative of all AIANs.

A traditional method for determining if two groups are from the same population is to compare the averages and evaluate if their values are far enough apart to reject that assertion. Limited work exists that distinguishes between the economic outcomes for individuals who identify as AIAN alone from those who express either another racial or ethnic identity. Huyser et al. (2010, 2014) in both papers included a dichotomous variable for non-Hispanic, single-race AIANs; non-Hispanic, white-AIANs and non-Hispanic, black-AIANs.[6] Each report consistently found that these racial categories are associated with statistically distinct economic outcomes. Wise et al. (2017) similarly separated AIANs into subpopulations based upon their AIAN identity. Again, AIANs with Hispanic ethnicity are segmented from other AIAN groups and non-Hispanic AIANs are categorized into either single-race AIANs and bi- or multiracial AIANs. Their analysis confirms that AIANs are disproportionately working in low-education fields and the degree of occupational segregation is related to AIAN identity as single-race AIANs are less likely to work in highly educated fields than AIANs with another racial identity.

This study contributes to current literature by documenting average and distributional differences in the hourly wages of AIAN women and men with single and multiracial identities by ethnicity. Furthermore, because stratified labor market outcomes reflect intergroup differences like human capital acquisition, community attachment, cultural norms, and discriminatory practices, we use the results of our analysis of the AIAN gender gaps to inform recommendations concerning the appropriateness of aggregating individuals from different AIAN identity groups into a larger category. Lastly, we add to the emerging literature that suggests residence and ethnicity play an important role in determining AIAN identity.

2. Methodology

Our first objective is to document the hourly wage differences across AIAN identity groups by gender. Next, we assess and compare the magnitude of gender hourly wage inequality for each AIAN group using the Theil index (Theil 1967). This allows us to evaluate the extent to which hourly gender wage differences, especially in ranges and distributions, contributed to the overall inequality. To achieve these ends, we summarize the mean, median and top 10 percentile hourly wages by gender, location and AIAN identity group. Finally, we utilize a downloadable module for STATA, THEILDECO, that allows for a decomposition of the Theil index based upon sample weights.

2.1. Data

We extracted the AIAN sample from the 2012–2016, American Community Survey 5-year Sample (ACS) from IPUMS (Ruggles et al. 2018). ACS data includes the demographic, economic and geographic information needed for analyzing hourly wage differences by gender across different self-identified AIAN groups. It also affords the separation of individuals based upon whether they reside within a Public Use Microdata Areas (PUMAs) that contains an AIAN homeland. Segmentation by homeland proximity is a dimension especially important if the desire is to maximize the likelihood that individuals are enrolled citizens of a federally recognized tribal nation. Because government surveys do not include tribal enrollment status and rely upon self-identification, the best proxy for this population in ACS data is those who identify only as AIAN and live in a PUMA that contains an AIAN homeland. Since

[6] Huyser et al. (2010) also includes a separate variable for Hispanic, white-AIANs while their 2014 manuscript chooses instead to use other bi-/multiracial AIANs.

we are interested in the appropriateness of including other AIAN identity groups, we will focus on non-Hispanic single-race AIANs and utilize the other five AIAN groups that are meant to contextualize the AIAN experience. These six different AIAN identity groups are selected to allow us to bridge those used by Liebler et al. (2016), Huyser et al. (2014) and Bonilla-Silva (2004).

Descriptive statistics for Hispanic and non-Hispanic AIAN identity groups is separated by whether or not the individual resides in a PUMA that contains an AIAN homeland area; this is depicted in Table 1. Gender differences in education and occupation are provided in the Appendix A, Table A1. The distribution of individuals across rural, educational attainment, occupational category, and census division is obtained by using person weights and equating them to the percentage of individuals with that particular characteristic. The most striking observation is the concentration of non-Hispanic single-race AIAN observations in PUMAs with tribal homelands (28,858), which is almost twice the size of the next largest group, non-Hispanic white AIANs in PUMAs without tribal homelands. Second, it is obvious that PUMAs with homeland areas are disproportionately located in rural areas while those without tend to be less rural. Lastly, individuals living in PUMAs that contain tribal homelands are less likely to have a 4-year degree or higher than those in PUMAs that do not. Overall, it is clear that individuals living in homeland areas have had different experiences than those residing outside tribal homelands.

Differences also become apparent based upon ethnicity as Hispanic AIANs are less likely than non-Hispanic AIANs to live in rural areas. They are also disproportionately concentrated in the Pacific division[7], lower levels of education and in the natural resources or construction and maintenance occupations. By comparison, it appears that racial identity seems to interact with ethnicity and PUMA homeland status as distinct patterns emerge when including these dimensions while none are consistently exhibited across racial identities solely. For example, single-race AIANs are more likely to live in rural areas than other AIAN identity groups if they also reside in a PUMA that contains a tribal homeland but white AIANs have the highest concentration of rural residence in PUMAs without a homeland. In addition, non-Hispanic, single-race AIANs living in PUMAs with homelands largely reside in the Mountain and West South Central divisions. The Pacific and West North Central divisions are the only other divisions with at least 10% of the population.[8] Similarly, Hispanic AIANs living in PUMAS with homelands tend to live in these areas but are disproportionately concentrated in the Pacific division. In contrast, non-Hispanic, single-race AIANs living in PUMAs without a tribal homeland are more evenly distributed across the country; only New England, Middle Atlantic and East South Central divisions have less than 10% of the population.

The processing of ACS data to calculate hourly wages follows that described by Lemieux (2006) which removes those whose: self-employment earnings are more than 10% of their wage and salary income; hourly wage is less than $1 or more than $100 in 1979 dollars; or potential experience[9] is negative or greater than 39 years. Similarly, we restricted the sample to individuals aged 16–64 who were employed during the previous year and reported a positive number for usual hours worked. Finally, the hourly wage was calculated by dividing the annual wage income by the number of usual hours worked per year and multiplied top-coded wages by 1.4, a standard practice meant to ensure means and standard deviations reflect their true values. Additionally, we excluded those living in Puerto Rico from analysis and weighted individuals by multiplying their person weight by the total number of annual hours they worked. This approach to weighting causes our final sample to reflect the average hourly experience of workers rather than that of individuals and includes 86,375 AIANs. Details concerning data processing are available in the Supplementary File.

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7 The Pacific division includes the states: Alaska, California, Oregon and Washington.

8 The Mountain division includes: Arizona, Montana, Nevada, Wyoming, Idaho, Utah, Colorado, and New Mexico, while the West South Central contain: Oklahoma, Arkansas, Texas and Louisiana. According to the 2010 Census, 12 of the 25 reservations with largest AIAN populations are in the Mountain division; 8 of these reservations are in the West North Central division; two are in the Pacific division; while the West South Central, East South Central and South Atlantic divisions each contain one.

9 Potential experience is calculated by subtracting a person's assigned years of education plus six from their age.

Table 1. Descriptive Statistics by Location and American Indian and Alaska Native Identity Group.

In PUMAs with Tribal Homelands						
	Non-Hispanic			***Hispanic***		
	Single-Race	**White**	**Other**	**Single-Race**	**White**	**Other**
Rural Residence						
Rural	69.0	54.3	34.6	40.4	31.8	27.9
Educational Attainment						
Less than Highschool	11.1	8.1	7.7	24.5	23.8	14.0
High School; some college	73.0	68.3	64.5	63.5	58.8	64.4
4-Year College and above	15.9	23.6	27.8	12.1	17.4	21.6
Occupation						
Management, Professional, and Related	27.0	31.9	33.5	23.0	25.3	22.1
Service	25.8	19.3	21.9	25.4	23.6	22.5
Sales and Office	22.1	22.2	25.6	19.3	16.6	25.9
Natural Resources, Construction, and Maintenance	11.8	12.0	6.9	18.0	18.5	10.0
Production, Transportation, and Material Moving	13.2	14.1	11.1	13.5	14.9	17.5
Military Specific	0.2	0.5	1.0	0.8	1.0	2.0
Regional Division						
New England	0.7	2.0	2.3	1.5	1.4	5.9
Middle Atlantic	1.0	1.7	1.7	1.3	1.0	2.7
East North Central	5.0	5.6	4.6	2.2	3.3	2.2
West North Central	10.0	7.6	4.1	4.8	4.3	5.9
South Atlantic	7.8	4.7	12.8	8.7	5.9	8.8
East South Central	1.9	2.7	4.2	0.9	0.6	2.1
West South Central	24.4	39.1	23.3	17.0	19.3	9.5
Mountain	33.1	9.4	9.2	27.4	18.6	18.0
Pacific	16.1	27.3	37.9	36.0	45.6	44.8
Total Number of Observations	28,858	7734	1296	1452	746	448
In PUMAs without Tribal Homelands						
	Non-Hispanic			***Hispanic***		
	Single-Race	**White**	**Other**	**Single-Race**	**White**	**Other**
Rural Residence						
Rural	17.6	19.6	7.6	7.5	8.0	5.5
Educational Attainment						
Less than Highschool	9.7	7.2	5.6	29.3	21.5	20.2
High School; some college	64.8	60.4	60.0	56.1	56.3	53.9
4-Year College and above	25.5	32.4	34.3	14.6	22.2	25.9
Occupation						
Management, Professional, and Related	31.6	38.6	36.9	20.7	26.2	28.6
Service	19.8	16.9	20.5	25.2	22.6	22.8
Sales and Office	24.4	22.9	25.9	21.3	20.5	22.0
Natural Resources, Construction, and Maintenance	9.8	8.7	4.5	14.5	13.6	9.6
Production, Transportation, and Material Moving	13.6	12.3	11.8	18.0	16.8	16.4
Military Specific	0.8	0.6	0.4	0.3	0.3	0.6
Regional Division						
New England	3.0	4.8	4.9	2.2	2.3	5.2
Middle Atlantic	6.8	7.5	14.3	11.8	12.2	23.7
East North Central	10.7	15.0	13.3	7.7	5.8	7.6
West North Central	10.2	8.6	5.4	3.2	2.6	2.2
South Atlantic	15.6	18.0	24.4	10.6	9.6	15.7
East South Central	4.8	5.5	3.1	1.3	1.1	1.3
West South Central	12.9	15.4	10.5	16.4	15.3	9.8
Mountain	19.9	7.4	5.3	13.6	9.9	8.3
Pacific	16.1	17.7	18.9	33.2	41.2	26.1
Total Number of Observations	11,140	15,730	6363	6384	3445	2779

Note: Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018).

2.2. Theil Index for Inequality and Decomposition

The Theil index, originally proposed by Theil (1967), is a measure of economic inequality that has been a frequent tool for distributional analysis. Distinctive benefits of using the Theil index is its ability to sum inequality within subgroups and be decomposed into additive parts. Liao (2016a, 2016b) discusses these qualities explicitly and demonstrates its applicability by comparing gender inequality across European Union nations. We follow his example to explore hourly gender wage inequality across AIAN identity group and homeland category.

The total amount of inequality measured by Theil's T is

$$T = \frac{1}{N}\sum_{i=1}^{N}\frac{x_i}{\bar{x}}ln\frac{x_i}{\bar{x}},$$

where x_i is the hourly wage of individual i, $\bar{x}$ is the overall mean hourly wage for the entire sample, and N is the sample size.

By introducing the male and female groups, we decompose the overall individual hourly wage inequality into two components: the between-group inequality and the within-group inequality. We can evaluate the share contributed by each of the two components. The between-group component is written as

$$T_b = \sum_{k=1}^{K} y_k ln\frac{\bar{x}_k}{\bar{x}},$$

where y_k is the kth group's (two gender groups in our study) wage share as a proportion of the entire wage of the sample, $\bar{x}_k$ is the mean wage of each group, and $\bar{x}$ is the overall mean wage for the entire sample. The decomposition generates the second component, the within-group component written as:

$$T_w = \sum_{k=1}^{K} y_k \sum_{i=1}^{n_k} y_{ik} ln\frac{x_{ik}}{\bar{x}_k},$$

where y_{ik} is the wage share of the ith individual within the kth group, and x_{ik} is the ith individual's wage.

As the formulas displayed above, the computation of the between-group component incorporates the income share contributed by each gender group, and the comparison of each group's mean hourly wage to the overall mean. The assessment does not consider the distributional variations such as the minimum and maximum hourly wages and the distance between the minimum and maximum in each group. To account for the distributional differences, we further decompose the within-group component into two sub-components: the shared-within and different-within distributions. We adopt the definition for the shared-within distribution from Liao's study (Liao 2016a), which uses the observed smallest and largest values of hourly wages that are contained within both gender groups to define the shared range of the distribution. The within-group component can be further decomposed into two subcomponents:

$$T_w = \sum_{k=1}^{K} y_{k,a} \sum_{i=1}^{n_i} y_{ik,a} ln\frac{x_{ik,a}}{\bar{x}_{k,a}} + \sum_{k=1}^{K} y_{k,b} \sum_{i=1}^{n_i} y_{ik,b} ln\frac{x_{ik,b}}{\bar{x}_{k,b}},$$

where the x and y terms with subscript a are individual wage values and shares of the number of cases that fall within the range of observed smallest and largest wages within both gender groups, and the terms with subscript b are corresponding wages and wage shares that do not meet the low and upper bounds of the range.

The distributional effects can be captured by decomposing the inequality by quantile, which enables a closer examination of a specific section of the wage distributions. For example, with the presence of stronger glass-ceiling effects for women, the wage difference by sex in the top 10 percentile may be larger than it was in lower ranges. Evaluating the wage differences by sex in different quantiles

of the wage distribution gives us a finer understanding of the gender wage inequality. To accomplish this objective, we first decompose the Theil index into the between-quantile and within-quantile components. For each quantile, we then derive the between-group and within-group components. We are particularly interested in understanding whether women face a stronger glass-ceiling effect. We define the top 10 percentile and the remaining percentile as the two quantiles. The between-group components will be assessed for each quantile. The Theil index can be first calculated as:

$$T = \sum_{q=1}^{Q} y_q ln \frac{\overline{x}_q}{\overline{x}} + \sum_{q=1}^{Q} y_q T_q,$$

where the first item on the right side of the equation refers to the between-quantile component and the second item refers to the within-quantile component for the qth quantile. The inequality within the qth quantile, T_q, is further decomposed into the between-gender-group and within-gender-group components:

$$T_q = \sum_{k=1}^{K} y_{kq} ln \frac{\overline{x}_{kq}}{\overline{x}_q} + \sum_{k=1}^{K} y_{kq} \sum_{i=1}^{n_{kq}} y_{ikq} ln \frac{x_{ikq}}{\overline{x}_{kq}},$$

where the first item on the right side of the equation refers to the between-group component within the qth quantile, and the second item refers to the within-group component within the qth quantile.

3. Results

3.1. Descriptive Analysis

Mean, median and the hourly wage for the top 10% of women and men as well as the female-male wage ratio is displayed by AIAN identity group in PUMAs with and without an AIAN homeland in Table 2. A comparison of mean, median and top decile hourly wages demonstrates that AIAN women earn less on average than their men in each geographic area and ethnicity category. A similar trend is generally exhibited along geographic and ethnicity lines. Those living in homeland areas earn less than those in PUMAs without and non-Hispanic AIANs tend to have higher earnings than Hispanic AIANs. When comparing hourly wages across racial groups, a pattern exists but is a bit less regular as single-race AIANs largely fare worse than both the white and other AIAN groups.

Compared to the differences in gender wage gap by homeland residence, the differences in gender wage gap across racial and ethnic subgroups is more evident. The white AIAN groups, regardless of the ethnicity or homeland residence, reported relatively large gender wage gaps with the smallest being 2.1 and the largest gap of 2.9 between non-Hispanic white AIAN men and women living in areas with a homeland area. Non-Hispanic single-race AIANs who lived in non-homeland areas have a similarly large gender wage gap (2.3). Single-race AIANs reported gender wage gaps between 1.1 to 1.4 followed by AIANs of other races. The smallest gender wage gap of 0.2 was found for Hispanic AIANs who lived in a homeland area and identify with a race other than white. We expect that the conventional decomposition based on group means will yield a small between-group component due to observed small differences in the mean values. For example, the differences in mean wages among Hispanic single-race AIANs are less than $1. The between-group component for these groups may yield no effects contributing to the overall inequality.

The comparison of the top 10 percentile and maximum wages between men and women showed a growing gender wage gap while moving up the wage distribution. The largest gender wage gap of the top 10 percentile wages was 7.9 and occurred between non-Hispanic white AIAN men and women in homeland areas. For single-race AIANs, whether the person was Hispanic mattered in terms of the gender wage difference. Hispanic single-race AIANs had a much smaller gender difference in the top 10 percentile wages (1.8 in non-homeland areas and 0.3 in homeland areas) than non-Hispanics (5.8 in non-homeland areas and 5.9 in homeland areas). The largest gender difference in the top 10 percentile

wages was among AIANs with other races. Interestingly, they also had the smallest gender difference in median wages providing evidence of a growing wage gap for those with higher hourly wages. The universal pattern of widened gaps between men and women's hourly wages while moving up from the median to top percentile indicates that the gender wage inequality may grow larger toward the higher end of the wage scale.

Table 2. Mean, Median, Top 10 Percentile, and Female-Male Ratio of Hourly Wages for American Indians and Alaska Natives by Location, and Identity Group.

	In PUMAs with Homeland								
	Mean Hourly Wage (Weighted)			**Median Hourly Wage (Weighted)**			**Top 10% Hourly Wage (Weighted)**		
	Male	**Female**	**Ratio**	**Male**	**Female**	**Ratio**	**Male**	**Female**	**Ratio**
Non-Hispanic									
Single race	19.71	16.85	0.86	15.27	13.84	0.91	35.36	29.44	0.83
White	22.16	18.44	0.83	17.64	14.77	0.84	40.41	32.59	0.81
Other	22.11	18.37	0.83	16.40	14.71	0.90	39.30	34.65	0.88
Hispanic									
Single race	16.69	16.34	0.98	13.90	12.70	0.91	30.50	30.18	0.99
White	17.95	15.97	0.89	14.71	12.41	0.84	33.04	29.78	0.90
Other	20.21	18.37	0.91	14.34	14.14	0.99	37.88	30.93	0.82
	In PUMAs without Homeland								
	Mean Hourly Wage (Weighted)			**Median Hourly Wage (Weighted)**			**Top 10% Hourly Wage (Weighted)**		
	Male	**Female**	**Ratio**	**Male**	**Female**	**Ratio**	**Male**	**Female**	**Ratio**
Non-Hispanic									
Single race	23.21	19.49	0.84	17.65	15.37	0.87	42.19	36.37	0.86
White	24.90	20.43	0.82	18.65	16.16	0.87	46.61	38.72	0.83
Other	23.36	20.85	0.89	17.16	16.40	0.96	44.12	39.48	0.89
Hispanic									
Single race	18.02	17.00	0.94	14.16	13.04	0.92	31.81	30.00	0.94
White	20.54	17.58	0.86	14.89	12.81	0.86	37.73	34.16	0.91
Other	19.86	18.96	0.95	15.37	14.71	0.96	38.24	35.87	0.94

Note: Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018). Hourly earnings are in 2016 dollars.

The female–male hourly wage ratio can be interpreted as either the average wage earned by a woman for each dollar earned by the average male with the same AIAN identity and homeland classification or a measure of the gender wage gap. For example, the mean wage ratio for non-Hispanic, single-race AIAN women living in homeland areas of 0.86 also suggests that they earn on average 14% less than non-Hispanic single-race AIAN males who live in that same area. Again, the differences by homeland residence are smaller than those across racial and ethnic subgroups. White AIAN groups report relatively large gender wage gaps with the smallest (13%) being that for median earnings, irrespective of ethnicity or homeland residence. Their largest gap (19%) occurs at the top decile between non-Hispanic white AIAN men and women living in areas with a homeland and helps establish the pattern of white AIAN women being the worst-off relative to their male equivalent. As a whole, single-race AIAN women fare better as their gender wage gap seems to be bounded by white and other AIAN women for all ethnicity and homeland groups. As was the case earlier, Hispanic AIANs tend to experience a smaller gender gap than non-Hispanic AIANs with their wage ratios tending closer to unity than that for non-Hispanic AIANs.

These statistics are broken down further to explore the potential relationship between average earnings, the gender wage gap and level of educational attainment, in Table 3. In most instances, the average hourly wage for men is higher than that for women. Occasionally, the mean or median earnings for women is higher than that for men with the same level of education but this occurs only when the number of observations is relatively small, 220 or less. In addition, the gender wage gap tends to be larger in PUMAs that contain a tribal homeland than in those that do not for those individuals in the two lowest educational levels. The largest difference in these gaps is in the mean wages of non-Hispanic white and single-race AIANs without a high school diploma, 0.15 and 0.12. In contrast, gender gaps in homeland areas for individuals with a 4-year degree or more are always larger in PUMAs without a tribal homeland. On average, the gender gap in median wages is 10% lower for women in homeland areas with the highest level of education than it is for AIAN women of the same identity group living in PUMAs without a tribal homeland. Similarly, the gap is 8% lower for these AIAN women when using mean wages. While the gender gap provides a measure of the wage inequality between men and women, it can disguise the inequality between homeland and non-homeland areas and reflects the lack of employment opportunities for college-educated workers. For example, the mean wages of non-Hispanic, single-race AIAN men and women with at least a 4-year degree are between 20% and 9% lower in homeland areas than outside those areas. Meanwhile, mean wages for non-Hispanic, single-race AIAN men with a high school diploma or some college experience earn 3% less in homeland areas while AIAN women from the same group earn 9% less.

There is also a positive correlation between average wages and educational attainment. Those with higher levels of education earn more than those with lower levels on average for all gender, AIAN identity and homeland residence categories. The size of the benefit from additional education, however, varies substantially from one group to another and lacks an obvious pattern. The differential between having less than a high school diploma and earning at least a 4-year college degree is smallest for non-Hispanic, single-race AIAN women living outside homeland areas. The mean wage for women without a high school diploma who only identify as AIAN is $16.58, but is 58% if they have earned at least a 4-year college degree. Their median wage tells a similar story, it increases 85% from an hourly wage of $11.93. The AIAN identity group with the next lowest benefit from higher education is non-Hispanic, single-race men living in a homeland area. Their mean and median wages are 83% and 90% higher, respectively. Here again, the mean hourly wage, $15.45, is larger than median earnings, $11.62, and are remarkably similar to hourly earnings in the previous case. Overall, the largest increase in average wages from earning a 4-year degree or higher versus not finishing high school occurs outside homeland areas and is similar to the difference in the gender wage gap based upon homeland residence, likely reflecting lower earnings for those without a high school diploma. The largest gain in hourly earnings occurs for non-Hispanic AIAN men who identify with a race other than white. The 160% increase in wages from $10.08 to $26.26 per hour means that they earn $0.05 more per hour than the group experiencing the lowest gain in earnings.

3.2. Wage Inequality and the Effects of Distribution

Theil index scores, a measure of overall hourly wage inequality based upon a group's distance from an egalitarian wage, are decomposed into between and within group components for each of the six AIAN subgroups and are presented in Table 4. The wage inequality ranges from 0.211 to 0.297 (Column 1). AIANs in homeland areas experienced lower wage inequalities than those in areas without a homeland, except for Hispanic AIANs of other races. The differences in the overall inequality are small across the 12 groups. The between-group and within-group decomposition (Column 2 and 3), using each group's hourly wage share, group mean hourly wages and the overall mean, shows little differences and none of the between-group component values contribute a significant share to the overall inequality.

Table 3. Mean, Median, and Female–Male Ratio of Hourly Wages for American Indians and Alaska Natives by Location, Identity Group, and Educational Attainment.

In PUMAs with Homeland									
	Educational Attainment	**Mean (Weighted)**		**Median (Weighted)**		**Gender Ratio (F/M)**		**N (Observations)**	
		Male	**Female**	**Male**	**Female**	**Mean**	**Median**	**Male**	**Female**
Non-Hispanic									
Single race	Less than high school	15.45	12.70	11.62	9.70	0.82	0.83	1821	1408
	High school; some college	19.05	15.51	14.91	12.81	0.81	0.86	10,304	11,227
	4-year college and above	28.25	23.84	22.04	20.87	0.84	0.95	1412	2686
White	Less than high school	16.18	11.67	12.44	8.91	0.72	0.72	402	242
	High school; some college	20.32	15.85	16.67	13.30	0.78	0.80	2824	2479
	4-year college and above	31.37	26.44	24.51	21.49	0.84	0.88	780	1007
Other	Less than high school	‡	‡	‡	‡	‡	‡	49	46
	High school; some college	18.95	16.05	14.91	13.42	0.85	0.90	427	437
	4-year college and above	32.44	25.34	24.51	21.73	0.78	0.89	139	198
Hispanic									
Single race	Less than high school	12.57	13.16	9.78	9.31	1.05	0.95	220	101
	High school; some college	17.18	14.59	15.16	12.41	0.85	0.82	487	471
	4-year college and above	27.95	26.22	22.86	20.59	0.94	0.90	64	109
White	Less than high school	14.62	‡	11.78	‡	‡	‡	85	55
	High school; some college	17.23	15.50	14.06	12.92	0.90	0.92	261	205
	4-year college and above	27.18	23.81	24.24	22.36	0.88	0.92	68	72
Other	Less than high school	‡	‡	‡	‡	‡	‡	40	27
	High school; some college	19.02	15.66	13.85	13.58	0.82	0.98	160	127
	4-year college and above	‡	‡	‡	‡	‡	‡	42	52
In PUMAs Without Homeland									
	Educational Attainment	**Mean (weighted)**		**Median (weighted)**		**Gender Ratio(F/M)**		**N (observations)**	
		Male	**Female**	**Male**	**Female**	**Mean**	**Median**	**Male**	**Female**
Non-Hispanic									
Single race	Less than high school	17.71	16.58	13.47	11.93	0.94	0.89	616	424
	High school; some college	19.67	17.05	16.16	14.01	0.87	0.87	3678	3409
	4-year college and above	35.35	26.21	25.81	22.06	0.74	0.85	1428	1585
White	Less than high school	16.50	14.27	13.24	9.22	0.87	0.70	661	399
	High school; some college	20.66	16.88	16.25	13.90	0.82	0.86	5014	4393
	4-year college and above	35.80	27.55	28.52	22.83	0.77	0.80	2549	2714
Other	Less than high school	14.59	14.95	10.08	10.42	1.02	1.03	200	153
	High school; some college	19.45	17.11	14.91	14.31	0.88	0.96	1722	1979
	4-year college and above	33.48	27.33	26.26	22.36	0.82	0.85	901	1408
Hispanic									
Single race	Less than high school	14.56	12.56	12.12	9.80	0.86	0.81	1219	616
	High school; some college	18.03	15.99	14.55	13.24	0.89	0.91	1885	1623
	4-year college and above	28.15	25.58	23.57	19.88	0.91	0.84	450	591
White	Less than high school	15.11	11.19	11.93	9.94	0.74	0.83	419	207
	High school; some college	17.87	14.99	13.94	11.98	0.84	0.86	1070	864
	4-year college and above	35.30	27.18	28.79	21.32	0.77	0.74	420	465
Other	Less than high school	14.11	13.10	11.40	9.93	0.93	0.87	310	193
	High school; some college	17.49	16.02	14.91	13.65	0.92	0.92	778	681
	4-year college and above	31.17	27.69	26.47	22.73	0.89	0.86	371	446

Note: ‡—denotes that reporting standards were not met. Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018). Hourly earnings are in 2016 dollars.

Table 4. Theil Decomposition of Gender Wage Inequalities for American Indians and Alaska Natives by Location and Identity Group.

In PUMAs with Homeland					
	Total	**Between**	**Within**	**Shared Within$_a$**	**Different Within$_b$**
Non-Hispanic					
Single race	0.248	0.003	0.245	0.236 96.0%	0.010 4.0%
White	0.249	0.004	0.244	0.226 92.5%	0.018 7.5%
Other	0.260	0.004	0.256	0.217 84.9%	0.039 15.1%
Hispanic					
Single race	0.225	0.000	0.225	0.190 84.4%	0.035 15.6%
White	0.211	0.002	0.209	0.163 77.7%	0.047 22.3%
Other	0.269	0.001	0.267	0.233 87.1%	0.034 12.9%
In PUMAs without Homeland					
	Total	**Between**	**Within**	**Shared Within$_a$**	**Different Within$_b$**
Non-Hispanic					
Single race	0.272	0.004	0.268	0.266 99.3%	0.002 0.7%
White	0.275	0.005	0.270	0.266 98.3%	0.005 1.7%
Other	0.277	0.002	0.276	0.268 97.2%	0.008 2.8%
Hispanic					
Single race	0.252	0.000	0.251	0.242 96.4%	0.009 3.6%
White	0.297	0.003	0.294	0.260 88.5%	0.034 11.5%
Other	0.248	0.000	0.248	0.232 93.5%	0.016 6.5%

Note: Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018) using THEILDECO (Liao 2016b).

While the between-group and within-group decomposition ignores the ranges such as minimum and maximum wages in the distribution of each group, the distributional differences can be captured by further decomposing the within-group component into a shared-distribution subcomponent and a different-distribution subcomponent (Column 4 and 5 in Table 3). These two component values measure the shared portion in the distributional spreads of the groups and the portion outside of the shared spread of the distributions. The share of the total inequality explained by differences in dispersion or distribution is different across the 12 AIAN groups. For Hispanic AIANs in areas with a homeland, the share contributed by different dispersions ranges from 12.9% to 22.3%, which are on average higher than other AIAN subgroups. AIANs with other racial groups, except Hispanic white AIANs in non-homeland areas and non-Hispanic AIANs of other races in homeland areas, have a relatively small share of the different-distribution component.

Decomposing the inequality into the components of the shared-distribution and different-distribution reveals new findings. The between-group component values derived from the conventional decomposition are similarly low for all AIAN groups. It indicates that the mean hourly wage differences between men and women are small for all groups. However, the distributional differences, measured by the different-distribution subcomponent, varied substantially across the subgroups. The distributional differences, which can be the variations at the higher or lower end of the wage distribution, signal the presence of the glass-ceiling and/or glass-floor effects.

3.3. Measuring Glass-Ceiling Effects

To measure the potential glass-ceiling effects, we take the approach to contrast the between-group component of the top 10 percentile to the between-group component of the remaining 90 percentile. A stronger glass-ceiling effect is present if the between-group component of the top 10 percentile is significantly larger than the between-group component of the remaining 90 percentile. To appropriately assess the difference between the two between-group components, we adopt the statistics discussed in Liao's paper (Liao 2016a), which is the Bayesian information criterion (BIC). The statistics for the top 10 percentile to the remaining percentile is computed by 2 x log (between-group component of the top 10 percentile/between-group component of the remaining 90 percentile). As noted in Liao's paper (Liao 2016a), the evaluation of the BIC values follows: 0 to 2, not worth a bare mention; 2 to 6, positive evidence; 6 to 10, strong evidence; and greater than 10, very strong evidence.

The BIC differences of the between-group component in the top 10 percentile and that in the remaining percentile are presented in Table 5. The evidence for a glass-ceiling effect is very strong for almost all AIAN subgroups. Hispanic single-race AIANs and Hispanic AIANs of other races in homeland areas had a score in the range of 6 to 10, also suggesting strong evidence of a glass-ceiling effect. In addition, the values for Hispanic, single-race AIANs, 9.09 and 8.52, are much lower than that for non-Hispanic, single-race AIANs in homeland areas, 16.81. By comparison, those identifying with either white or some other race differ from that for non-Hispanic, single-race AIANs by less than 2. Meanwhile, the difference for non-Hispanic, single-race AIANs associated with homeland proximity is 2.38 and suggests there may be a substantive difference between the two groups.

Table 5. BIC Differences (2 x Log-Ratios) of the Between-Gender Component Contributing to Wage Inequality in the Top 10 Percentile and the Wage Inequality in the Remaining Percentile.

	In PUMAs with Tribal Homelands	In PUMAs without Tribal Homelands
Non-Hispanic		
Single-race	16.81	19.19
White	15.27	21.26
Other	18.78	17.25
Hispanic		
Single-race	8.52	9.09
White	19.12	15.67
Other	8.28	12.43

Note: Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018) using THEILDECO (Liao 2016b).

4. Conclusions

Our analysis of hourly wage inequality amongst the AIAN population revealed several new findings. First, comparing the median and top 10 percentile wages by gender showed a gender gap in hourly wages across all AIAN populations, regardless of racial and ethnic identity or whether the person lived in areas with a homeland. Compared to geographic location, racial and ethnic identity exhibit larger gender gaps on average as white AIAN and non-Hispanic AIAN groups tended to have higher hourly wages. Furthermore, we observed widened gaps at the top percentiles of the hourly

wage distribution for all AIAN subgroups. These descriptive findings suggest that analysis of wage inequalities should consider the distributional differences by gender.

The utilization of Theil's decomposition provides three possible approaches for a better understanding of the hourly wage inequality contributed to by gender. The overall gender wage inequality does not vary greatly across the 12 AIAN groups. Using the conventional approach, which decomposes the inequality into the between-group and within-group components, we found that the share contributed to the measured inequality by the differences in mean hourly wages is minimum for all groups. The other two approaches that incorporate wage distributions or dispersions offered new insights for evaluating the total effects of wage distribution and a glass-ceiling effect, which is a fine-tuned distributional effect. We found that the AIAN groups are different in terms of the assessment of distributional differences by gender that contributed to the hourly wage inequality and a strong glass-ceiling effect for all AIAN groups. These distributional differences between men's and women's hourly wages contributed substantially and differently to the overall hourly wage inequality of different AIAN subgroups. Most importantly, these results demonstrate that methods for studying inequality should not overlook the shape and range of the distribution.

Our results reaffirm much of the current literature on gender and racial wage inequality that has documented gender gaps across race, ethnicity and geographic categories. Furthermore, they are generally consistent with a theory of assimilation and the racial stratification system suggested by Bonilla-Silva (2004) and documented by Huyser et al. (2010) that posits identifying as a single-race AIAN results in a measurable disadvantage relative to white AIANs. However, separating individuals based upon their residence in a homeland area reduces this disadvantage and also removes much of the distributional differences between single and multi-race AIANs.

These findings have significant implications for researchers and those evaluating policies meant to impact AIAN populations because they call for such analyses to disaggregate the AIAN population by ethnic identity and possibly geographical location. They also suggest that it may be appropriate to combine single-race AIANs with those identifying with either white or some other race category if they reside in a homeland area. When examined as a whole, the evidence from examining the gender wage gap and distributional differences for AIANs provides additional support for the conclusions reached by Liebler et al. (2016). Consequently, we echo their suggestion, at least in homeland areas, that there are enough similarities between single and multiple-race AIANs for researchers to consider pooling these populations when conducting analysis. Similarly, our results support their call for caution for over-generalization due to the great diversity and complexities associated with AIAN identification.

Supplementary Materials: The Stata "do" files performing data processing and Theil decompositions are available online at http://www.mdpi.com/2227-7099/7/2/46/s1.

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Appendix A

Differences in educational attainment and occupational concentration are apparent in Table A1 across AIAN identity groups. In all cases, AIAN women are more likely to have obtained a 4-Year college degree or above than their male counterparts. Consequently, they are also more likely to be employed in a management, professional or related position. Overall, AIAN women are disproportionately concentrated into one of three occupational groups: management, professional, and related; sales and office; or service. In contrast, men tend to be more evenly distributed across the different occupational groups.

Racial identity, residence in PUMAs with tribal homelands and ethnicity seem to play large roles in determining differential outcomes in education and occupation. Individuals living in PUMAs with a tribal homeland are less likely to have completed higher levels of college. Hispanic and single race AIANs are similarly concentrated in the two lower educational categories when compared to non-Hispanic AIANs and AIANs with some other racial identity. It should also be noted that, Hispanic AIANs are less likely to complete high school than non-Hispanic AIANs but this difference does not appear to correlate with residing near a homeland area.

Single-race AIAN males in PUMAs containing a tribal homeland have the lowest percentage of workers in a management or related area and is a likely result of having the lowest percentage of college graduates. A gender-specific occupational trend is reflected in the concentration of men in natural resources, construction, and maintenance jobs if their PUMA of residence contains a tribal homeland. Lastly, these areas also seem to result in non-Hispanic, single-race AIAN men finding employment in service occupations. They are the group least likely to have a service job if their PUMA is without a tribal homeland but have much a much higher percentage in homeland areas.

Table A1. Descriptive Statistics by Gender, Location and American Indian and Alaska Native Identity Group.

	In PUMAs with Tribal Homelands											
	Non-Hispanic						*Hispanic*					
	Single-Race		**White**		**Other**		**Single-Race**		**White**		**Other**	
	Females	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**
Educational Attainment												
Less than Highschool	8.9	13.5	6.5	9.7	7.7	7.6	17.3	29.9	21.8	25.4	13.4	14.5
High School; some college	72.0	74.1	66.5	69.9	62.4	67.0	65.5	61.9	56.2	60.8	61.3	67.1
4-Year College and above	19.1	12.4	27.0	20.3	29.9	25.4	17.2	8.2	22.0	13.9	25.3	18.4
Occupation												
Management, Professional, and Related	33.9	19.3	37.9	26.2	37.1	29.4	34.4	14.5	32.1	20.2	27.8	17.3
Service	27.5	23.8	24.2	14.6	20.8	23.1	28.6	23.1	27.0	21.1	27.4	18.3
Sales and Office	31.1	12.3	31.5	13.5	33.1	17.1	28.0	12.7	22.6	12.0	36.1	17.2
Natural Resources, Construction, and Maintenance	1.4	23.1	1.1	22.3	0.7	13.9	3.8	28.7	5.4	28.5	0.4	18.2
Production, Transportation, and Material Moving	6.1	21.0	5.1	22.6	7.5	15.2	5.3	19.7	13.0	16.4	8.3	25.2
Military Specific	0.0	0.4	0.1	0.9	0.8	1.3	0.0	1.3	0.0	1.8	0.0	3.7
Total Number of Observations	15,321	13,537	3728	4006	681	615	681	771	332	414	206	242
	In PUMAs without Tribal Homelands											
	Non-Hispanic						*Hispanic*					
	Single-Race		**White**		**Other**		**Single-Race**		**White**		**Other**	
	Females	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**
Educational Attainment												
Less than Highschool	8.4	11.0	5.8	8.5	4.6	7.0	22.4	34.4	14.8	26.2	16.2	23.6
High School; some college	64.5	65.0	59.5	61.2	57.8	62.7	59.0	53.9	59.2	54.2	54.6	53.3
4-Year College and above	27.1	24.0	34.7	30.3	37.6	30.3	18.6	11.7	25.9	19.5	29.2	23.1
Occupation												
Management, Professional, and Related	36.4	26.9	43.5	34.0	40.8	32.2	26.9	16.0	33.2	21.2	34.5	23.7
Service	22.4	17.2	19.7	14.3	21.2	19.6	29.3	22.2	24.1	21.5	26.4	19.8
Sales and Office	32.6	16.5	30.6	15.6	31.4	19.3	30.9	14.1	29.2	14.2	28.5	16.6
Natural Resources, Construction, and Maintenance	1.6	17.8	0.8	16.2	1.0	8.7	2.2	23.7	2.3	21.8	0.7	17.0
Production, Transportation, and Material Moving	6.7	20.3	5.2	19.0	5.4	19.5	10.4	23.8	11.1	20.9	9.6	22.1
Military Specific	0.3	1.3	0.2	0.9	0.1	0.8	0.3	0.3	0.0	0.5	0.3	0.8
Total Number of Observations	5418	5722	7506	8224	3540	2823	2830	3554	1536	1909	1320	1459

Note: Author's calculations—2012–2016, American Community Survey 5-year sample (Ruggles et al. 2018).

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