Returns to Education for American Indian and Alaskan Native Students

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Abstract:

Higher education is a key policy tool in the effort to eliminate racial gaps in earnings, employment and LFP. We use data from the American Community Survey (ACS) spanning 2009-2014 to investigate the returns to higher education by racial group with particular attention to the returns realized by American Indian and Alaskan Natives (AIAN). We find that there are sizable gaps in earnings, employment and labor force participation (LFP). On average AIAN Americans earn 18% less, have 6.5 percentage point lower employment rates and 10.2 percentage point lower LFP rates than white Americans even after controlling for differences in education and experience. While all Americans experience sizable returns to education - earning a BA increases wages by 60.5%, employment by 7.6 percentage points and LFP by 13.0 percentage points - the returns to education are different by racial group. This is particularly the case for earnings. We find that the white-AIAN earnings gap *widens* with education. For employment rates, the white-AIAN gap narrows with education but is not eliminated. Only for LFP do we find that earning a BA eliminates the white-AIAN gap. These results suggest that policies that promote higher education are necessary but not sufficient to address white-AIAN labor market disparities.

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1. Introduction

Previous research has found that, on average, a Bachelor's degree increases employment and earnings (e.g. James 2012; Abel & Dietz 2014).[1] There is also evidence, however, that the returns to post-secondary education vary by race, and that white college graduates reap larger returns than their non-white peers (Cooper & Cohn, 1997). This is troubling for at least two reasons. First, higher education may exacerbate, rather than alleviate, disparities. Second, low returns to college can dampen the incentive to pursue higher education and make it harder for non-white students to repay student loan debt. Policy that depends on education to close earnings and employment gaps can be improved by an understanding of how returns to education differ by race. Previous research on differences in the returns to college has focused largely on black-white earnings and employment gaps. We extend the analysis to focus on American Indian and Alaskan Natives (AIAN).

We report on research undertaken in collaboration with the Center for Indian Country Development (CICD) at the Minneapolis Federal Reserve. Using data from the American Community Survey (ACS) from 2009-2014, we pursue a simple research question: Are returns to post-secondary education different for AIAN Americans than for other racial groups? Notably our identification strategy stops short of allowing for causal identification of the returns to education because we are unable to deal with selection bias. Since we are interested in relative statements, however, we argue that our methodology is robust conditional on the assumption that the selection bias is similar across racial groups.

We primarily focus on Bachelor's degrees (BA) but we also investigate returns to some college coursework (but no degree), Associate's degrees and advanced degrees (i.e. Master's, Professional and Doctoral degrees). We find that the increases in labor force participation and employment associated with a BA are 12.6 and 7.11 percentage points *higher* for AIAN than for whites. The earnings premium associated with a BA, however, is 10.9 percent *lower* for AIAN than for whites. In other words, we find that the white-AIAN earnings gap *widens* with

[1] In our estimates, we find that a BA increases the odds of employment by 7.6 percentage points and earnings by 60%. These magnitudes are consistent with previous research.

education. For employment rates, the white-AIAN gap narrows with education but is not eliminated. Only for LFP do we find that earning a BA eliminates the white-AIAN gap.

We argue that these findings will have important policy implications. Interventions that improve college attendance and completion may have larger labor force participation and employment effects but smaller earnings effects for AIAN Americans than for other groups. This will impact the cost-benefit calculations for any PK-12 intervention. Additionally, the results may serve as a reminder that PK-12 interventions aimed at college going will not have their full impact unless coupled with other policies that consider AIAN communities unique historical and socio-economic realities. Lastly, while our focus is on AIAN communities, our analysis extends to other non-white groups as well.

2. Previous Literature

There is a large body of research that describes the historic and current socio-economic context for AIAN students in higher education (for recent summaries see, for example, Brayboy, Solyom & Castagno 2015 and Cunningham 2007). Notably AIAN communities have a troubled relationship with the American educational system dating back to the first white settlers in the 17th century when education was used as a tool to assimilate Native Americans into white culture. More often than not, education policy that impacts Native Americans has been made without knowledge or consideration of Native American culture and values.

Additionally, as Brayboy et al (2015) note, AIAN Americans are the only peoples to be recognized as both a racial and a political group. AIAN higher education is unique, in part, because there are treaty agreements that govern the federal government's responsibility towards sovereign tribal nations. As a result, the federal government helps support the network of Tribal Colleges and Universities (TCUs) that serve predominately AIAN students. It is important to interpret our findings in this larger historical and socio-economic setting. Notably, our analysis cannot address much of this crucial context because we are limited to the variables collected in the ACS. For example, we do not know which students attend TCUs.

There is also a large body of research and theory on the returns to education (e.g. Psacharopoulos & Patrinos 2004). There is some previous work on the returns to education specifically for AIAN students, although more often than not AIAN are grouped with "other"

due to small sample sizes. One exception is Kimmel (1997) who compares earnings for American Indian (AI), white and black respondents in the 1987 National Medical Expenditures Survey (NMES) with a particular focus on rural locations. She finds that for men only 14% of the AI-white earnings gap is unexplained by observable personal and job characteristics. For women, however, 66% of the AI-white earnings gap remains unexplained. Further, she concludes that in rural areas, AI and white workers both experience very small returns to education relative to white workers in urban settings. Kimmel's estimates depend on a sample of 975 AI males (599 employed) and 1,146 AI females (550 employed). Our analysis provides updated estimates using a much larger data source.[2]

A more recent analysis is Austin's (2013) report "Native Americans and Jobs" prepared for the Economic Policy Institute. He uses ACS data from 2009-2011 and logistic regression to investigate the employment gap between AI and white workers. Specifically he measures the difference in the odds of employment conditional on demographic covariates and finds that the employment rate for prime age AI workers is 64.7%, a full 13.4 percentage points less than whites. He concludes that post-secondary education is the factor most likely to increase the odds of securing employment for AI workers finding that AI with advanced degrees (greater than a BA) are seven times as likely to be employed as AI with less than HS. Austin (2015) does not offer evidence on whether post-secondary education is any more or less important for AI workers than it is for white workers. Additionally, he finds that SD, ND, IA, MN, WI, MT have the largest AI-white employment gaps and that the Tingit-Haida (Alaska), Aleut (Alaska), Cherokee (OK), Choctaw (OK) have significantly higher employment rates than other tribes after controlling for demographics such as gender, age and marital status. This points to a diversity of AI experiences and possibly policy lessons from specific tribal settings.

There is also evidence that AIAN may experience non-trivial occupational sorting. Wise, Liebler & Todd (2017) find that AI workers are overrepresented in low-skill occupations and underrepresented in high-skill occupations relative to non-Hispanic white workers. Gaps in educational attainment explain some of this but not all of this sorting. They find that

[2] Kimmel's (1194) identification strategy is a two-step Heckman correction with household size and marital status to control for selection into work. The observable personal and job characteristics are age, education, an indicator for more than one year out of the labor force, firm size, union status, occupation, and the share of white makes in the occupation.

occupational dissimilarity is persistent across education levels and is stronger for men than women, and they find no evidence of changes over time. Like Austin (2015) and the current study, they use ACS data. Additionally, they pay careful attention to differences between AIAN respondents who identify as solely AIAN or AIAN in combination with another racial group, and we follow their definitions in this respect.

3. Data and method

We use data from the American Community Survey (ACS) from 2009-2014. All data were accessed from the Integrated Public Use Microdata Series, IPUMS (Ruggles et al 2015). The ACS surveys are annual weighted samples of 1% of the US population. All analyses make use of the sampling weights provided yielding a nationally representative sample across the time period studied.

In recent years these surveys improved options for self-identification, tribal selections and homeland designations. The improvements enable us to provide an updated and nuanced study of the returns to education for AIAN students. Our final analytic sample includes 140,799 respondents who identify as AIAN and 7,279,833 non-AIAN respondents. Following Wise, Liebler & Todd (2017), we separate AIAN respondents into mutually exclusive subgroups: those who identify as AIAN only (n=68,057), those who identify as AIAN and at least one other race (n=50,304), and those who identify as AIAN and Hispanic (n=22,438). Table 1 shows the sample size for each of these subgroups by their level of education. In this iteration we report results for AIAN alone and AIAN and at least one other race, we leave the results for AIAN and Hispanic for future drafts.

The main empirical strategy is an earnings equation in the style of Mincer (Mincer 1974, Heckman, Lochner & Todd 2006). Specifically, we use ordinary least squares estimates of:

$$y_{itso} = \alpha + \beta_j Educ_{ij} + \gamma Exp_i + \delta_h Race_{ih} + \vartheta_j Educ_{ij} * Race_i + \theta_k X_{ik} + \rho_t + \tau_s + \varphi_o + \varepsilon_{itso}$$

(eq 1)

where y is a labor market outcome for person i in time t state s and occupation o. We use three different labor market outcomes: labor force participation (LFP), employment, and log earnings. Earnings are measured as total pre-tax wage and salary income for the year previous to the surveyed year. This includes wages, salaries, commissions, cash bonuses, tips, and other

monetary income from the individual's employer. Earnings do not include income from business, farm, self-employment, social security, public assistance or other income that has not been earned from an employer.

Educ measures j categories of education beyond high school in the form of indicator variables for some college (but no degree), an Associate's degree, a Bachelor's degree or an advanced degree (i.e. a Master's, Professional or Doctoral degree). *Exp* is a linear and a quadratic of potential experience (age minus years of schooling minus six) in both a linear and quadratic form) and *Race* is a vector, indexed by h, including, but not limited to, AIAN alone and AIAN in combination with another race, AIAN in combination with Hispanic. The omitted racial category is white thus the β coefficient measures the return to a degree for white workers and the ϑ coefficients on the interaction of education and race measure the marginal return to education for each non-white group. *X* is a vector of k demographic controls and ρ, τ and φ are time (year), state and occupation fixed effects.

This identification strategy has some limitations. It is unable to address the selection bias inherent in post-secondary educational attainment. Students decide whether or not to pursue education in part based on their own assessment of their abilities and likelihood of increased earnings and employment. Further, they pursue education knowing their own preferences about labor force participation. There is a large body of labor economic theory on how to address this problem (e.g. Angrist & Krueger 1999), but none are particularly well suited for our data. Instead, we use the simple cross-sectional estimates and note the caveat that the results stop short of causal identification.

Importantly, however, our focus is not as much on the returns to post-secondary education as on the relative returns to post-secondary education across racial groups. The key assumption is that the selection bias works similarly for AIAN and white students (and/or students from other racial groups). While it is possible that the utility functions, the constraints and the parameters that measure selection into post-secondary education are fundamentally different for AIAN students than for white students, we are aware of no formal evidence to this

effect.[3] Still, given that we cannot rule out differential selection, we caution the reader against strong causal statements and encourage the reader to consider this rigorous descriptive analysis.

Lastly, the sample restrictions vary somewhat depending on the dependent variable. For all analyses we focus on prime age workers, i.e. people aged 25-55. When we use LFP as the dependent variable, this is the only sample restriction. When we use employment status as the dependent variable, the sample includes only respondents who are in the labor force and, when we use earnings as the dependent variable, the sample includes only respondents who are employed. Additionally, when we look at earnings we exclude part time workers (<35 for usual hours of work per week) and adjust earnings for inflation using the CPI. After adjusting for inflation, we use only workers who earn at least $10,000 in USD2014. Summary statistics are provided in Table 2.

4. Results

First, we report the results of our estimates of equation (1) using earnings as the dependent variable, then we turn to employment and LFP. In each section we demonstrate how the returns to post-secondary education, i.e. β_j and ϑ_j, change as we introduce additional control variables. We report results both with and without demographic and geographic controls and then add controls for occupation and field of study to test the role that occupational sorting and/or differences in specific human capital may play in mediating any differential returns to education. We also report results for subgroups, specifically, we look at how our estimates vary by gender and urban/rural residence. Lastly, we provide preliminary evidence by tribe, i.e. we disaggregate the indicator for AIAN into a vector of indicators to capture tribal affiliation.

4.1 Earnings:

Table 3A reports results for estimates of equation 1 using ln(earnings) as the outcome variable. Column (1) shows the average earnings differences between racial groups where the

[3] Neal and Johnson (1996) argue that estimates of the black-white earnings gap may be biased by fact that black students pursue education at different rates due to their assessment of future labor market discrimination. This logic could extend to AIAN students and would be an example of a reason to worry about differential selection bias across racial groups. Additionally, we have heard anecdotal evidence that AIAN women may have different life-cycle patterns with regards to timing of career/school and family/fertility which could also lead to systematically different human capital accumulation.

only controls included are state and year fixed effects. Workers who identify as AIAN alone earn, on average, 28.2% less than workers who identify as white workers in the same state and year. This is a naïve analysis, however, since workers vary on other dimensions that are related to earnings. In column (2) we add controls for education and experience. As expected, education and experience explain some, but not all, of the difference in earnings between AIAN and white workers. After controlling for education and experience, workers who identify as AIAN alone earn, on average, 18.0% less than workers who identify as white. This is still a striking earnings gap. AIAN who identify as multi-race experience smaller earnings gaps, lagging 13.8% behind white workers after education and experience are accounted for.

The white-AIAN earnings gap is smaller than the white-black earnings gap. After controls for education and experience are added, we find that earnings black workers lag approximately 20.9% behind their white peers. Interestingly, "other non-white" workers, a group that often includes AIAN in other studies, has earnings that are 16.4% lower than whites after controlling for education and experience. The fact that the white-AIAN gap is larger than the white-other gap suggests that combining AIAN and other may be obscuring some important detail about the AIAN community.

Also in column (2) we also see estimates on the average returns to education and experience across all racial categories. We find that workers with some college (but no degree) earn, on average, 19.9% more than workers with no college course work. Workers with a BA earn 60.5% more and workers with advance degrees earn 88.0% more than workers with no college course work. It is worth noting again that our methodology does not correct for selection and workers who choose to pursue postsecondary education are likely different from those with no college course work so we cannot attribute the earnings increases it education alone. Still, consistent with other work on the returns to degrees, there appears to be a substantial earnings premium associated with postsecondary education. In what follows we refer to this as "returns to education" for ease of exposition. Consistent with previous research, we find that the returns to experience are positive and diminishing (i.e. the linear term is positive but the squared term is negative).

Our main interest in this paper is the differential returns to a degree. In column (3) we estimate the returns to degree separately for each racial group. We do this by interacting the

indicator for each racial group with each degree level. The coefficient on these interactions reveals the marginal return for this group relative to the omitted group (white). Interacting AIAN-alone with degree levels we find that AIAN workers earn lower returns to postsecondary education than do their white peers. For instance, the coefficient on the interaction of AIAN-alone and a BA is -0.112 indicating that, on average, the gap between AIAN workers with no college and AIAN workers with a BA is 11.2 percentage points narrower than the gap between white workers with no college and white workers with a BA. More specifically, a white worker with a BA earns, on average 60.5% more than a white worker with no college coursework. An AIAN worker with a BA earns 49.3% more than an AIAN worker with no college course work (0.605-0.112=0.493). Simply put, the returns to a BA appear to be lower for AIAN workers than they are for white workers. We find a similar pattern for other degree levels (not shown, full results available upon request). The returns to an advanced degree are 18.0 percentage points lower for AIAN workers than it is for white workers. Even some college and associates degrees yield 6.89 and 6.92 percentage points lower earnings increases for AIAN workers than they do for white workers.

In comparison to other racial groups, the returns to postsecondary education are the lowest for workers who identify as AIAN-alone. The story for AIAN who identify as multi-race is similar, although the magnitude on the coefficient on the interaction with a BA is slightly smaller, -0.109 or 10.9 percentage points, than for those who identify as AIAN-alone. The returns to a BA for black workers are 5.3 percentage points lower than for white workers, still a notable issue but less severe than the 11.2 percentage point gap we estimate between AIAN and white workers. The returns to a bachelors for workers grouped as "other" are statistically identical as for white workers, again suggesting that grouping AIAN with other is somewhat misleading.

To this point, our analysis has only controlled for state, year, education and experience. It is entirely possible that something other than race/ethnicity explains the earnings gaps. In column (4) we add controls for gender, marital status, family structure (number of children and adults in the household as well as age of the youngest child, veteran status, rural location and whether the PUMA includes a homeland (i.e. an AIAN reservation). As expected, adding these geographic and demographic controls impacts almost all of the other coefficients. Some of what we

attributed to education, experience and race/ethnicity is explained by other demographic and geographic variation. Focusing on the coefficients that interact race and education, however, we find that adding a full slate of demographic and geographic controls only slightly moderates the findings that AIAN earn lower returns to a postsecondary education than whites. It is still the case that the returns to a BA are 10.9 percentage points lower for AIAN-alone workers and 10.4 percentage points lower for AIAN workers who identify as multi-race.

Another important difference is that workers with similar education and experience may work in very different occupations. When we control for occupation, column (5), we find that returns to a BA are 9.17 percentage points lower for AIAN-alone workers than for white workers. In other words, controlling for occupation does little to explain the differential returns to a BA degree. Controlling for occupation seems to have a more significant impact for AIAN who identify as multi-race and also at other degree levels. This would be interesting to study further. Controlling for occupation does not alleviate concerns about racial earnings gaps but it does help researchers and policy makers identify whether the earnings gaps are primarily the result of occupational sorting.

We can also use ACS data to control for college major/field of study. College course work and degrees are not all the same, even within degree type. The labor market returns for a bachelors in art history are substantially different than the labor market returns for a bachelors in math. This is in part due to the human capital acquired in the different programs and in part due to the signaling associated with each field of study. If white workers are more likely to choose fields of study with higher returns, this could explain the differential returns to postsecondary education. We find, however, that controlling for field of study does not explain the differential returns at the BA level nor the Associate's degree level nor for some college. For workers with advanced degrees, field of study explains some of the differences in returns to a degree, however, AIAN workers with advanced degrees still earn an earnings premium that is 14.4 percentage points less than white workers (education levels other than BA not shown, available upon request). In sum, differences in field of study are not to the main reason for the lower returns to education for AIAN workers.

Encouraging AIAN students to pursue postsecondary education and advanced degrees in high demand fields is undoubtedly important, but, our results suggest that is insufficient as a

strategy to close earnings gaps between AIAN and white workers. Our results do not confirm, but are nonetheless consistent with, the possibility of labor market discrimination, since disparities persist after a host of controls for observable demographics are included. Further, the analysis that controls for occupation suggests that this possible labor market discrimination is not driven by occupational sorting, for there are differences even within occupation. The labor market experience for a demographically and geographically similar white worker and AIAN worker is different even if those workers have same degree level and field of study or work in the same occupation. Other possible explanations include unobservable differences such as quality of K-12 schooling and/or labor market networking/mentorship.

Table 3B repeats the analysis that includes the full slate of demographic controls (i.e. column 4 in Table 3A) and then disaggregates this result by gender and urban/rural residence. The result from the entire sample is reproduced in the first column of Table 1B for ease of comparison. Columns (2) & (3) compare the result for women and men. We find that the white-AIAN gap for workers with no college course work (i.e. the main coefficients on AIAN) is statistically significant only for men. After controlling for other demographic and geographic differences, female workers with no college coursework who identify as AIAN (alone or in combination) earn earnings that are, on average, no different from their white peers. In contrast, the earnings gap for workers with no college persists for women from other non-white racial groups. Moving to workers with some college but no degree and workers with an Associate's degree, we find that the returns to this level of post-secondary education are lower from both male and female AIAN workers than for male and female white workers. Indeed, this pattern persists for BA and advanced degrees as well (as before, we report the coefficients on BA but full results are available upon request). Both men and women who identify as AIAN-alone or AIAN in combination with another race experience smaller gains with a degree relative to the gains realized by white workers.

Columns (4) and (5) compare workers who live in urban settings to workers who live in rural settings. Previous research suggests that earnings gaps were less stark in rural areas (Kimmel 1994). Another geographic difference that may be of particular importance when studying AIAN workers, is whether the respondent lives on or near an American Indian tribal reservation. In columns (6) & (7) we compare workers who live in PUMAs that include a

designated homeland (i.e. an AIAN reservation) to those who live in PUMAs that do not include a homeland. We find that for workers without any college coursework, the white-AIAN earnings gap is larger in rural areas and in PUMAs that include a homeland. For white workers (the omitted category) we find that the returns to education are larger in urban areas than they are in rural areas and/or areas that include a homeland. Turning to the coefficients on the interactions of AIAN status and education, we find lower returns to education for AIAN workers is largely an urban phenomenon. This is consistent with Kimmel's (1994) conclusion that returns to education are more similar for rural workers than for urban workers. There is evidence, however, that in PUMAs that include a homeland, AIAN workers experience lower returns to education.

Table 3C investigates tends over time by replicating our main analysis (i.e. Table 3A column (4) in each year of data. One might expect that racial discrimination is waning and thus the earnings-gaps we observe in the pooled-year data would show a downward trend over time. On the other hand, earnings gaps may ebb and flow with economic conditions and thus may not exhibit a steady trend. We do not find evidence to support the belief that the white-AIAN earnings gap experienced a downward trend between 2009 and 2014. For workers with no college course work, the gap seems to have widened from 2009 to 2011 and then narrowed in 2012 and 2013 only to widen again in 2014. For comparison the white-black earnings gap for workers without college course work narrowed from 2009 to 2012 and then widened in 2013 and 2014. Additionally, the interactions of AIAN status and degree levels does not provide evidence that the gaps in returns education are getting any better with time. Indeed, the coefficient on AIAN only interacted with a BA degree has gotten more negative in recent years meaning that the returns to education for AIAN and white have diverged further rather than converged. This may be because returns for white degree holders have increased while returns AIAN degree holders have held steady or it may mean that returns for white degree holders have held steady while returns for AIAN degree holders have declined (or both).

Another way to investigate trends over time is to group workers into cohorts. Looking across years (as in the Table 3C) may conflate changes over time in the returns to education with underlying changes in worker demographics. For instance, as the baby boom generation aged, the share of workers with more experience increased. In Table 3D we split workers into cohorts based on when they graduated from high school. The first cohort graduated high school between

1970 and 1979. This group has 30-40 years of worker experience (and probably includes a number of workers who are in "retirement jobs"). The second cohort graduated high school between 1980 and 1989. This group has 20-30 years of work experience. This group is likely at the peak of their earnings potential. The third cohort graduated high school between 1990 and 1999 and the final cohort graduated high school between 2000 and 2009. The final cohort is relatively new to the labor force and, if gaps are narrowing over time and/or if gaps do not emerge until later in one's career, this group should experience the smallest racial earnings gaps. Amongst workers without any college coursework, there is some evidence that this group experiences the smallest earnings gaps. The returns to education starting at the Associates' degree level, however, do not show the same pattern. The returns to a BA is most disparate for the cohort that graduated high school between 1990 and 1999. For this group, AIAN degree holders experience returns that are nearly 20 percentage points smaller than their white peers. The disparity for the other cohorts is less than half that.

In sum, we find that education improves earnings. This is true across all racial groups but, on average, white workers see the largest return to education when we measure returns as increased earnings. AIAN (and indeed other non-white groups as well) see smaller gains and thus educational attainment alone is not sufficient for AIAN workers to catch up to their white peers. Workers who identify as AIAN-alone experience the most disadvantage in the labor market, workers who identify as AIAN in combination with another race show similar patterns but slightly smaller magnitudes. These patterns do not seem to be improving over time and evidence suggests the problem is more severe in for males and in urban areas.

4.2 Employment and Labor Force Participation

Next, we turn to employment and LFP to measure the gains associated with post-secondary education. In Table 4A we repeat the analysis with employment as the dependent variable. Unlike earnings, employment is a binary outcome. The results presented are estimates from an OLS estimate but all results are robust in logit and/or probit specifications. Employment is a more basic measure of labor force success than earnings. Some workers may be underemployed, i.e. working low wage jobs that are below their full earnings potential. Employment simply measures the existence of a job and does not reveal anything about the quality of employment.

In the first column we see the raw gaps in employment accounting only for state and year fixed effects. The coefficient on AIAN-alone indicates that the AIAN workers have an employment rate that are 7.88 percentage points lower than the employment rate for white workers. This is the largest racial employment gap. The gap between white and black workers is the next largest with a 7.05 percentage point difference. In the second column we see that adding controls for education and experience explains some, but not all, of the racial employment gaps. After controlling for education and experience, the employment gap between white-AIAN falls from 7.88 percentage points to 6.50 percentage points. As with earnings, this is still a striking gap. As expected, we see in column (2) that employment rates increase substantially with education and increase (at a diminishing rate) with experience as well.

The primary concern for this study is differential returns to education. In the third column we interact race and education and find that AIAN workers experience *higher* returns to education than their white peers when returns are measured as employment. This is good news but with a caveat. The caveat being that the differential returns are not sufficient to close the employment gap. That is, the coefficient on the interaction of AIAN and a BA is 0.075 which is not enough to offset the coefficient on AIAN, -0.093. Taken together, AIAN workers with a BA are still less likely to be employed than white workers with a BA. Summing the coefficients reveals that employment rates for AIAN workers with a BA are 1.8 percentage points lower than employment rates for white workers with a BA (-0.093 + 0.075 = -0.018). The employment gap between AIAN and white workers narrows with education but does not disappear.

In column (4) we add demographic and geographic controls. These controls explain some of the white-AIAN employment gap for workers without any college coursework which falls from 9.30 to 8.05 percentage points. The differential return to education also falls, however, so it remains the case that the white-AIAN employment gap narrows with education but does not disappear. In columns (5) and (6) we investigate whether occupation or field of study mediate the differences in employment rates at all. We find that occupation explains some of the white-AIAN employment gap but field of study does not, and, in both cases the differentially positive returns to education still do not eliminate the employment gap.

As before, the pattern is similar but the magnitudes are smaller for AIAN workers who also identify as another race. In comparison to other racial employment gaps, the white-AIAN pattern

seems much more similar to the white-black gap than the white-other gap. This suggests that lumping AIAN with "other" as is commonly done in response to small sample sizes, is misleading and obscures important details.

Table 4B repeats the analysis reported in Table 4A column (4) and then disaggregates by gender and urban/rural residence. We find that the white-AIAN employment gap is larger for men than for women and larger in rural areas and on/near a homeland than in urban areas. Notably this is the opposite of the pattern we observed in the earnings data. The differential returns to a degree are larger for men and in rural areas but these differential returns are, in every case, insufficient to overcome the larger disadvantage.

Tables 4C and 4D investigate trends over time and across cohort. The white-AIAN employment gap grew wider from 2009 to 2013 and narrowed in 2014. In Table 4D we find evidence that the employment gap is starkest for younger workers and narrows across one's career. For the cohort that graduated high school between 2000 and 2009, the white-AIAN gap is 9.23 percentage points but, for the cohort that graduated between 1980 and 1989, the white-AIAN gap is 3.42 percentage points (we use this cohort for comparison since the 1970-1979 cohort likely includes retirees). This appears to be the case for other racial employment gaps as well. The sum of the main coefficient on AIAN and the interaction of AIAN and a BA remains persistently negative across years and across cohorts.

Lastly, in Table 5A, we turn to labor force participation as our outcome. Earnings are contingent on being employed and employment is contingent on being in the labor force. Thus, labor force participation is our broadest outcome measure. It also measures labor supply on the extensive (decision to work) rather than the intensive (decision on how much to work) margin. As with employment and earnings, we see that across specifications, LFP rates are lower for the AIAN Americans than for the white Americans. In the first column we see the raw percentage point gap controlling only for state and year. The AIAN population that is of prime working age (25-55) has a 12.9 percentage point lower LFP rate than the white population that is of prime working age. This gap narrows to 10.2 percentage points when education and experience are included. Unsurprisingly, LFP increases with education and increases at a diminishing rate with experience.

When we interact race and education level, we find that the white-AIAN gap is 14.1 percentage points for people without any college coursework. The return on education as measured by LFP is higher for the AIAN Americans than for white Americans. That is, the jump in LFP associated with a degree is larger for AIAN than for white. As was the case with employment rates, this is good news but with an important caveat. The larger increases in LFP are not sufficient to erase the base gap. For instance, AIAN BA holders have a marginal increase in LFP of 12.7 percentage points which does not make up for the 14.1 percentage point gap. Indeed, taken together, these coefficients show that AIAN BA holders have 1.4 percentage point lower LFP rates than white BA holders (-0.141 + 0.127 = -.014).

In column (4) we add demographic and geographic controls. These controls explain some of the white-AIAN LFP gap for workers without any college coursework which falls from 14.1 to 12.4 percentage points. The differential return to education increases and the net result is that for BA holders the white-AIAN gap in LFP is only 0.4 percentage points (-.124 + .120 = -0.04). In columns (5) and (6) we investigate whether occupation or field of study mediate the differences in LFP rates at all. We find that controlling for occupation explains more than half of the white-AIAN LFP gap and there is evidence that, conditional on occupation, AIAN BA holders have 2.07 percentage point *higher* LFP than their white peers (-0.0607 + 0.0814 = 0.0207). In contrast, controls for field of study does not explain any of the white-AIAN LFP gap.

In Table 5B, we repeat the analysis from Table 5A column 4 and then disaggregate this result by gender and urban/rural residence. We find that the LFP gap is larger for men than for women. The differential return to a BA is larger for AIAN women, indeed there is evidence that AIAN women with a BA have 1.78 percentage point *higher* LFP than their white peers (-0.0992 + 0.117 = 0.0178). The differences by geographic locale are less clear. The gap appears to be slightly larger in rural settings but not in PUMAs that include a homeland. On or near a reservation we find that the differential return to a BA is large enough to overcome the main effect so in these PUMAs AIAN with a BA have *higher* LFP than their white peers.

Tables 5C and 5D look at LFP across years and cohorts. We find that when we disaggregate by year, the differential returns to a bachelors for AIAN Americans comes close to closing the white-AIAN gap in most years. Indeed, in 2010 and 2012-2014, the gap closes for BA holders. That is, AIAN Americans with a BA had the same or greater LFP rates as white Americans with

a BA. Looking across cohorts also reveals a more optimistic story for BA holders, particularly those from recent cohorts.

In sum, when we use employment and LFP to assess the returns to post-secondary education we find that education narrows but does not eliminate employment gaps between AIAN Americans and white Americans but in some cases education does eliminate gaps in LFP. This more optimistic story echoes the findings in Austin (2013). We note, however, that employment and LFP may be particularly wrought with selection bias and further research is needed before strong causal claims can be made.

4.3 Tribal differences

Literature on the AIAN experience in higher education highlights the danger of making universal claims about AIAN Americans since this is a group that is made up of a diverse group of tribes that vary geographically and culturally. As Brayboy et al (2015) write, "it is inherently problematic to make sweeping statements about AIAN students' achievement levels and experiences because legal and social differences between tribal nations, between urban and reservation communities, and between traditional and less traditional students can lead to varying experiences." The analysis in the previous sections was able to differentiate by identity as AIAN-alone or AIAN in combination with another race and also by geography (i.e. state as well as rural, urban and homeland) but still lumps AIAN of all tribal backgrounds together.

Since 2010 the ACS has collected data on tribal identification making it possible to disaggregate by tribe. We use this data to run a version of our analysis that seeks to identify differential returns to education by tribe. These results are presented in Table 6. We focus only on earnings and create a single interaction for BA or higher due to the limited sample size for tribe by degree level. We report the estimates that include controls for state and year fixed effects, education and experience and the full slate of demographic controls and the differential returns to a BA or higher.[4]

There are some tribes that seems to experience starker earnings disparities. For example, members of the Blackfeet tribe without any college coursework earn 12.0% less than their white

[4] This is equivalent to column (4) from Table 3A. The omitted category continues to be white workers so the coefficients reported are the main effect i.e. the earnings gap between white workers with no college coursework and AIAN workers with no college coursework

peers and this gap grows when comparing workers with a BA or higher. Members of the Blackfeet tribe experience 21.8 percentage point lower returns than whites with a BA or higher. The only tribe where the returns to a BA outpace the returns for white workers is the Yuma tribe. Indeed, for this tribe we find that workers with a BA earn more than their white peers; that is the differential returns are sufficient to eliminate the earnings gap. We caution, however, against strong inferences from the results in Table 6 since the cell sizes are small.

5. Discussion

We study the returns to post-secondary education using data from the ACS spanning 2009-2014. These surveys have an unprecedented detail about AIAN self-identification enabling us to provide a nuanced look at earnings, employment and LFP gaps and the role that post-secondary education may play in closing those gaps. We find that education increases LFP, employment and earnings but at different rates for different racial groups. For AIAN Americans, the particular focus of this paper, gaps in LFP are overcome with a BA at least for women and in PUMAs on or near a reservation. Gaps in employment persist but narrow with education. Importantly, however, earnings do not. Earnings gaps *grow* with education because the returns to education are higher for white workers than for AIAN workers. These results are policy relevant because they suggest that, while education increase LFP, employment and earnings, education alone is not sufficient to close employment and earnings gaps. Earnings gaps, in particular, will not be eliminated (and may even be made worse) if we rely on policies that only work towards increased post-secondary completion.

To be clear, our conclusion is not that higher education is bad for earnings. Unequivocally, higher education increase labor market outcomes including LFP, employment and earnings for all Americans. Our conclusion is that higher education, while it increases earnings across the board, increases earnings faster for white Americans than for AIAN and other people of color. It may be that this is a concern of secondary importance. Policy makers are likely very willing to trade small amounts of increased inequality in exchange for large increases in average earnings. Still, reducing inequality amongst similarly educated workers may be an important policy goal since inequality limits intergenerational economic mobility (Corak 2013). Further, much of the growth in income inequality in the United States has been concentrated within, rather than between, education levels (Lemieux 2006). Policy makers should not ignore that higher

education is a good investment for all Americans but that it pays higher returns to white Americans.

We note that our analysis is largely descriptive in nature. We are able to control for observable demographic and geographic differences that likely impact earnings but we are unable to control for self-selection into post-secondary education. Additionally, although the ACS have rich data on racial identity, there is more limited data on the context for each students' higher education experience. For instance, we know the highest degree level and field of study but we do not know if the person attended a public or private institution or, for AIAN students if they took part in the TCU system. We also do not know student GPA or courses completed and do not know what, if any wrap-around supports the students received while in college. Future work should consider how these variables mediate our results.

We also do not know how the students financed their higher education. The fact that AIAN students experience gains in earnings but that those gains in earnings are smaller than white students suggests that AIAN Americans will have a harder time paying off college debt. Heavy debt burdens negatively impact the overall financial health of households (Elliot & Nam 2013). This will exacerbate wealth inequalities, reduce intergenerational mobility and may rationally discourage AIAN students from pursuing higher education. Given this, policies that aim to increase AIAN college-going and completion should also favor grant aid over loans. A related policy would be to increase loan-forgiveness for AIAN students. Qualitative evidence suggests that AIAN students are disproportionately motivated to complete advanced degrees because they want to help their communities rather than for purely individual gain (Brayboy et al 2015). A loan-forgiveness program could be linked to working in a job that directly gives back to the community.

Evidence that AIAN students are disproportionately motivated by altruistic goals such as giving back to the community points to another area for future research. We cannot rule out the possibility that AIAN Americans are choosing to take lower paid jobs that are rewarding in other ways. We are only able to offer preliminary evidence about this hypothesis by controlling for occupation and field of study. This preliminary evidence does not offer much support for the hypothesis that worker preferences are driving the wage gaps. Notably wage gaps could also be due to the preferences of firms. Our evidence is more consistent with, although not conclusive of,

discrimination in the labor market. Our evidence is also consistent with inequities in the PK-12 educational system that could leave AIAN students disproportionately underprepared to take full advantage of the earnings boost that college offers (Fischer & Stoddard 2013). Lastly, there is a rich body of research into targeted programs that support AIAN students, much of it published in journals devoted to the AIAN educational experience such as the *Journal of American Indian Education*. Our findings support the need for these targeted programs. It is clear that getting AIAN students to enroll, and even to complete, BA and advanced degrees, is only part of the story.

In conclusion, while the analysis in this study does not offer direct policy guidance, taken together with qualitative work and other quantitative evidence, it is an important part of the overall story of the AIAN experience in higher education and specifically the role that education plays in closing or exacerbating AIAN-white gaps in the labor market. Our findings suggest that higher education increases earnings across the board but at differential rates by race and thus, while college going and completion is likely key to advancing the wellbeing of AIAN communities, college alone will not eliminate persistent racial earnings inequalities.

Works Cited

Abel, J. & Dietz, R. (2014). Do the Benefits of College Still Outweigh the Costs? Federal Reserve Bank of NY *Current Issues in Economics and Finance, 20*(3).

Angrist, J. & A. Krueger (1999). Empirical Strategies in Labor Economics. In the Handbook of Labor Economics, Volume 3, Edited by O. Ashenfelter and D. Card, Elsevier Science

Austin, A. (2013). Native Americans and Jobs: The Challenge and the Promise. *EPI Briefing Paper #370*, Economic Policy Institute.

Brayboy, B.M.K.J., J.A. Solyom & A.E. Castagno (2015). Indigenous Peoples in Higher Education, *Journal of American Indian Education, 54*(1), 154-186.

Cooper, S. & Cohn, E. (1997). Internal Rates of Return to College Education in the United States by Sex and Race. *Journal of Education Finance, 23*(1), 101-133.

Corak, M. (2013). Income Inequality, Equality of Opportunity, and Intergenerational Mobility. *Journal of Economic Perspectives, 27*(3), 79-102.

Cunningham, J. (2007). The Path of Many Journeys: The Benefits of Higher Education for Native People and Communities. A report by the Institute for Higher Education Policy in collaboration with the American Indian Higher Education Consortium and the American Indian College Fund, February 2007.

Elliot, W. & I. Nam (2013) Is Student Debt Jeopardizing the Short-Term Financial Health of U.S. Households? Federal Reserve Bank of St. Louis *Review*, September/October 2013, 95(5) 405-24.

Fischer, S. & C. Stoddard (2013) The Academic Achievement of American Indians, *Economics of Education Review, 36*, 135-152.

Heckman, J.J., L.J. Lochner & P.E. Todd (2006). Earnings Functions, Rates of Return and Treatment Effects: The Mincer Equation and Beyond. In the Handbook of the Economics of Education, Volume 1, Edited by E. Hanushek and F. Welch.

James, J. (2012). The College Wage Premium. Federal Reserve Bank of Cleveland. *Economic Commentary*, Number 2012-10 August 8, 2012.

Kimmel, J. (1997). Rural Wages and Returns to Education: Differences between Whites, Blacks and American Indians. *Economics of Education Review, 16*(1), 81-96.

Lemieux, T. (2006). Postsecondary Education and Increasing Wage Inequality. *American Economic Review, 96*(2), 195-199.

Mincer, J.A. (1974). Schooling, Experience and Earnings, National Bureau of Economic Research.

Neal, D. and W. Johnson (1996). The Role of Premarket Factors in Black-White Wage Differences, *Journal of Political Economy, 105*(5), 869-895.

Psacharopoulos, G. & Patrinos, H. (2004). Returns to Investment in Education: A Further Update. *Education Economics, 12*(2).

Ruggles, S., Genadek, K., Goeken, R., Grover, J., & Sobek, M**.** *Integrated Public Use Microdata Series: Version 6.0* [dataset]. Minneapolis: University of Minnesota, 2015. http://doi.org/10.18128/D010.V6.0.

Wise, J., Liebler, C., & Todd, R. (2017). Dissimilarity on the Career Path: The Occupational Structure of the American Indian/Alaskan Native Workforce. *(Working Paper No. 2017-01).* Center for Indian Country Development.

Table 1. Cell Counts by Race, Ages 25-55

	(1)	(2)	(3)	(4)	(5)	(6)
	Total	**No Higher Education**	**Some College**	**Associate Degree**	**Bachelors Degree**	**Professional Degree**
White	4,961,715	1,615,445	1,090,712	493,511	1,141,455	620,592
		33%	22%	10%	23%	13%
AIAN Alone	68,057	35,136	18,692	5,948	5,768	2,513
		52%	27%	9%	8%	4%
AIAN and Other Race	50,304	19,222	15,021	5,035	7,276	3,750
		38%	30%	10%	14%	7%
Black	787,391	361,252	207,215	64,682	100,682	53,560
		46%	26%	8%	13%	7%
Asian or Pacific Islander	413,773	95,577	54,945	29,689	131,965	101,597
		23%	13%	7%	32%	25%
Other race, non-white or AIAN	12,300	4,709	2,352	1,008	2,539	1,692
		38%	19%	8%	21%	14%
Two or more races, non-AIAN	64,752	17,512	15,806	6,054	16,036	9,344
		27%	24%	9%	25%	14%
Total	7,420,632	2,776,840	1,605,768	672,638	1,519,476	845,910
		37%	22%	9%	20%	11%

Table 2. Summary Statistics Ages 25-55			
	(1)		(2)
	Total		**AIAN**
Log Earnings	10.39		10.02
	(1.077)		(1.183)
Employment	0.75		0.59
	(0.436)		(0.492)
Labor Force Participation	0.81		0.69
	(0.395)		(0.463)
AIAN Alone	0.01		0.57
	(0.0953)		(0.494)
AIAN and Other Race	0.01		0.43
	(0.0821)		(0.494)
Black	0.11		0
	(0.308)		(0)
Asian or Pacific Islander	0.06		0
	(0.229)		(0)
Other race, non-white or AIAN	0		0
	(0.0407)		(0)
Two or more races, non-AIAN	0.01		0
	(0.093)		(0)
Some College	0.22		0.28
	(0.412)		(0.451)
Associates Degree	0.09		0.09
	(0.287)		(0.29)
Bachelors Degree	0.2		0.11
	(0.404)		(0.313)
Professional Degree	0.11		0.05
	(0.318)		(0.224)
Potential Experience	21.4		21.81
	(9.646)		(9.424)
Female	0.51		0.51
	(0.5)		(0.5)
Midwest Region	0.22		0.17
	(0.411)		(0.376)
South Region	0.37		0.33
	(0.483)		(0.468)
West Region	0.24		0.43
	(0.424)		(0.495)
Married	0.6		0.45
	(0.49)		(0.498)
Household Size	2.98		3.01
	(1.661)		(1.947)
Number of Children	1.02		0.98
	(1.217)		(1.327)

Table 2 Continued

Has Children	0.48		0.53
	(0.5)		(0.499)
Has Children, youngest age 0 to 5	0.18		0.16
	(0.384)		(0.363)
Has Children, youngest age 6 to 10	0.11		0.1
	(0.317)		(0.304)
Has Children, youngest age 11 to 15	0.1		0.09
	(0.306)		(0.287)
Has Children, youngest age 16 to 18	0.05		0.05
	(0.224)		(0.212)
Has Children, youngest age 19+	0.07		0.07
	(0.254)		(0.257)
Veternan Status	0.07		0.09
	(0.251)		(0.286)
Rural	0.14		0.3
	(0.35)		(0.459)
Puma includes reservation	1.17		1.55
	(0.373)		(0.497)
Observations	7,420,632		118,361

Table 3A. Log earnings						
	(1)	(2)	(3)	(4)	(5)	(6)
	Race	**Race and Educ**	**Race, Educ and Race * Educ**	**with Demographic Controls**	**with Occupation**	**with Field of Study**
AIAN Alone	-0.282***	-0.180***	-0.125***	-0.0657***	-0.0418***	-0.0698***
	(-57.89)	(-39.61)	(-16.39)	(-8.70)	(-5.74)	(-9.27)
AIAN and Other Race	-0.187***	-0.138***	-0.0698***	-0.0490***	-0.0426***	-0.0508***
	(-34.61)	(-27.68)	(-7.63)	(-5.48)	(-5.15)	(-5.69)
AIAN and Hispanic	0.0344***	0.00452	-0.0283**	-0.0286**	-0.0186*	-0.0278**
	(4.76)	(0.69)	(-3.03)	(-3.08)	(-2.18)	(-3.00)
Black	-0.288***	-0.209***	-0.187***	-0.141***	-0.0801***	-0.143***
	(-224.52)	(-181.02)	(-95.30)	(-72.68)	(-43.42)	(-73.72)
Asian or Pacific Islander	-0.0215***	-0.104***	-0.268***	-0.250***	-0.174***	-0.252***
	(-11.23)	(-63.15)	(-78.81)	(-72.67)	(-53.60)	(-73.28)
Other race, non-white or AIAN	-0.220***	-0.164***	-0.167***	-0.159***	-0.0906***	-0.159***
	(-22.28)	(-18.58)	(-11.79)	(-10.93)	(-6.75)	(-10.96)
Two or more races, non-AIAN	-0.0941***	-0.0693***	-0.236***	-0.238***	-0.179***	-0.238***
	(-21.79)	(-18.17)	(-11.85)	(-11.55)	(-9.00)	(-11.59)
Some college		0.199***	0.200***	0.209***	0.128***	0.207***
		(209.73)	(189.80)	(206.47)	(131.23)	(204.82)
Associates degree		0.282***	0.280***	0.304***	0.171***	0.301***
		(232.89)	(210.94)	(237.53)	(136.62)	(234.99)
Bachelors degree		0.605***	0.605***	0.605***	0.410***	0.529***
		(596.88)	(546.19)	(560.84)	(353.94)	(118.03)
Advanced degree		0.880***	0.862***	0.858***	0.635***	0.799***
		(719.55)	(641.65)	(654.08)	(435.93)	(177.09)
AIAN Alone * Bachelors degree			-0.112***	-0.109***	-0.0917***	-0.0911***
			(-8.13)	(-8.04)	(-7.27)	(-6.78)
AIAN and other Race * Bachelors degree			-0.109***	-0.104***	-0.0668***	-0.0929***
			(-7.41)	(-7.31)	(-5.09)	(-6.64)
AIAN and Hispanic * Bachelors degree			0.0197	0.0330	0.0133	0.0390
			(0.93)	(1.58)	(0.70)	(1.85)
Black * Bachelors degree			-0.0530***	-0.0495***	-0.0578***	-0.0541***
			(-16.47)	(-15.60)	(-19.58)	(-17.12)
Asian * Bachelors degree			0.177***	0.168***	0.0699***	0.111***
			(40.47)	(38.60)	(17.31)	(25.63)
Other race, non-white or AIAN * Bachelors degree			-0.0381	-0.0332	-0.0750***	-0.0551*
			(-1.65)	(-1.44)	(-3.56)	(-2.40)
Two or more races, non-AIAN * Bachelors degree			0.159***	0.175***	0.119***	0.163***
			(7.52)	(8.05)	(5.68)	(7.53)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	Yes	No
College Major	No	No	No	No	No	Yes
Observations	4,336,350	4,336,350	4,336,350	4,336,350	4,336,350	4,336,350
Pseudo R-squared						

Note: The reported coefficients are the estimated percentage change in wages associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 3B. Wages by Demographic		Table 3B: Log earnings by subgroup					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	**Male**	**Female**	**Urban**	**Rural**	**Outside Reservation**	**On or near Reservation**
AIAN Alone	-0.0657***	-0.112***	0.00381	-0.0675***	-0.109***	-0.0600***	-0.111***
	(-8.70)	(-11.41)	(0.33)	(-7.10)	(-9.00)	(-4.36)	(-12.24)
AIAN and Other Race	-0.0490***	-0.0820***	0.00181	-0.0457***	-0.0760***	-0.0533***	-0.0673***
	(-5.48)	(-7.28)	(0.12)	(-4.51)	(-4.15)	(-4.77)	(-4.54)
AIAN and Hispanic	-0.0286**	-0.0294**	-0.00875	-0.0316**	0.00480	-0.0407***	0.00494
	(-3.08)	(-2.59)	(-0.56)	(-3.26)	(0.16)	(-4.01)	(0.22)
Black	-0.141***	-0.188***	-0.0742***	-0.135***	-0.171***	-0.136***	-0.172***
	(-72.68)	(-69.82)	(-27.24)	(-66.08)	(-27.94)	(-66.29)	(-29.35)
Asian or Pacific Islander	-0.250***	-0.305***	-0.166***	-0.248***	-0.142***	-0.266***	-0.161***
	(-72.67)	(-63.46)	(-34.38)	(-70.67)	(-8.05)	(-71.56)	(-17.74)
Other race, non-white or AIAN	-0.159***	-0.211***	-0.0705**	-0.156***	-0.108	-0.162***	-0.0947*
	(-10.93)	(-11.47)	(-3.03)	(-10.45)	(-1.59)	(-10.60)	(-2.09)
Two or more races, non-AIAN	-0.238***	-0.309***	-0.101**	-0.242***	-0.0570	-0.260***	-0.154**
	(-11.55)	(-12.84)	(-2.75)	(-11.36)	(-1.11)	(-11.66)	(-2.90)
Some college	0.209***	0.212***	0.200***	0.221***	0.136***	0.217***	0.166***
	(206.47)	(157.09)	(133.32)	(201.05)	(54.56)	(195.76)	(67.63)
Associates degree	0.304***	0.284***	0.326***	0.313***	0.258***	0.309***	0.277***
	(237.53)	(157.68)	(179.91)	(223.68)	(83.27)	(219.97)	(89.67)
Bachelors degree	0.605***	0.602***	0.597***	0.622***	0.463***	0.620***	0.515***
	(560.84)	(410.81)	(379.83)	(537.86)	(156.15)	(527.95)	(187.15)
Advanced degree	0.858***	0.866***	0.837***	0.874***	0.717***	0.874***	0.750***
	(654.08)	(457.08)	(468.22)	(627.40)	(184.06)	(617.80)	(212.83)
AIAN Alone * Bachelors degree	-0.109***	-0.117***	-0.115***	-0.121***	0.0388	-0.0852***	-0.0443**
	(-8.04)	(-5.73)	(-6.30)	(-7.41)	(1.62)	(-3.74)	(-2.64)
AIAN and other Race * Bachelors degree	-0.104***	-0.0885***	-0.129***	-0.108***	-0.0671	-0.0963***	-0.0698**
	(-7.31)	(-4.30)	(-6.37)	(-6.98)	(-1.83)	(-5.58)	(-2.80)
AIAN and Hispanic * Bachelors degree	0.0330	0.0171	0.0191	0.0264	0.0768	0.0340	0.0542
	(1.58)	(0.57)	(0.68)	(1.23)	(0.98)	(1.48)	(1.11)
Black * Bachelors degree	-0.0495***	-0.0926***	-0.0384***	-0.0618***	-0.00538	-0.0613***	0.0142
	(-15.60)	(-18.67)	(-9.40)	(-18.76)	(-0.42)	(-18.33)	(1.38)
Asian * Bachelors degree	0.168***	0.182***	0.139***	0.159***	0.0323	0.181***	0.0528***
	(38.60)	(29.61)	(22.78)	(35.80)	(1.23)	(38.85)	(4.25)
Other race, non-white or AIAN * Bachelors degree	-0.0332	-0.0298	-0.0658*	-0.0448	-0.00921	-0.0402	-0.0508
	(-1.44)	(-0.93)	(-1.98)	(-1.89)	(-0.10)	(-1.67)	(-0.64)
Two or more races, non-AIAN * Bachelors degree	0.175***	0.207***	0.0802*	0.173***	0.0152	0.197***	0.0966
	(8.05)	(7.93)	(2.12)	(7.73)	(0.25)	(8.36)	(1.74)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No	No
College Major	No	No	No	No	No	No	No
Observations	4,336,350	2,419,430	1,916,920	3,761,113	575,237	3,644,473	691,877
Pseudo R-squared							

Note: The reported coefficients are the estimated percentage change in wages associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 3C. Log earnings by year						
	(1)	(2)	(3)	(4)	(5)	(6)
	2009	**2010**	**2011**	**2012**	**2013**	**2014**
AIAN Alone	-0.0624**	-0.0771***	-0.0873***	-0.0485*	-0.0482*	-0.0719***
	(-3.15)	(-4.28)	(-5.00)	(-2.56)	(-2.46)	(-4.31)
AIAN and Other Race	-0.0622***	-0.0660**	-0.0611**	-0.0637**	-0.0285	-0.0130
	(-3.34)	(-3.17)	(-2.84)	(-2.87)	(-1.07)	(-0.61)
AIAN and Hispanic	-0.0513*	-0.0130	-0.0364	-0.0417	-0.00487	-0.0273
	(-2.29)	(-0.61)	(-1.61)	(-1.82)	(-0.22)	(-1.13)
Black	-0.146***	-0.142***	-0.136***	-0.134***	-0.145***	-0.142***
	(-33.22)	(-31.64)	(-28.08)	(-28.21)	(-29.08)	(-28.48)
Asian or Pacific Islander	-0.247***	-0.254***	-0.261***	-0.254***	-0.241***	-0.245***
	(-30.20)	(-31.91)	(-30.49)	(-30.36)	(-27.44)	(-28.44)
Other race, non-white or AIAN	-0.188***	-0.116***	-0.182***	-0.136***	-0.155***	-0.173***
	(-5.72)	(-3.50)	(-4.38)	(-3.62)	(-4.92)	(-4.51)
Two or more races, non-AIAN	-0.182	-0.230***	-0.259***	-0.345***	-0.207***	-0.200***
	(-1.86)	(-6.14)	(-5.50)	(-8.91)	(-5.09)	(-3.84)
Some college	0.211***	0.210***	0.211***	0.210***	0.203***	0.209***
	(92.06)	(90.62)	(80.93)	(82.83)	(79.41)	(81.27)
Associates degree	0.308***	0.310***	0.306***	0.305***	0.295***	0.300***
	(105.92)	(105.22)	(91.41)	(96.19)	(92.30)	(93.34)
Bachelors degree	0.601***	0.601***	0.603***	0.607***	0.608***	0.611***
	(244.50)	(243.24)	(214.56)	(226.13)	(224.51)	(224.72)
Advanced degree	0.856***	0.853***	0.857***	0.868***	0.859***	0.857***
	(283.17)	(281.26)	(250.04)	(267.56)	(262.77)	(261.92)
AIAN Alone * Bachelors degree	-0.0800*	-0.0789*	-0.0424	-0.131***	-0.160***	-0.161***
	(-2.28)	(-2.45)	(-1.32)	(-3.80)	(-4.78)	(-5.12)
AIAN and other Race * Bachelors degree	-0.0517	-0.113***	-0.0992**	-0.0884**	-0.141***	-0.125***
	(-1.52)	(-3.30)	(-2.80)	(-2.63)	(-3.79)	(-3.65)
AIAN and Hispanic * Bachelors degree	0.0374	0.0887	0.139**	0.0220	-0.0754	0.00635
	(0.65)	(1.77)	(2.68)	(0.51)	(-1.45)	(0.13)
Black * Bachelors degree	-0.0502***	-0.0333***	-0.0470***	-0.0555***	-0.0519***	-0.0581***
	(-6.90)	(-4.59)	(-5.75)	(-7.02)	(-6.49)	(-7.26)
Asian * Bachelors degree	0.136***	0.151***	0.161***	0.189***	0.174***	0.194***
	(13.14)	(14.87)	(14.43)	(17.67)	(15.78)	(18.17)
Other race, non-white or AIAN * Bachelors degree	-0.0483	-0.0823	-0.0324	-0.00170	-0.0509	0.00848
	(-0.93)	(-1.61)	(-0.45)	(-0.03)	(-0.99)	(0.15)
Two or more races, non-AIAN * Bachelors degree	0.103	0.134**	0.217***	0.297***	0.140**	0.150**
	(1.03)	(3.25)	(4.27)	(7.07)	(3.20)	(2.76)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No
College Major	No	No	No	No	No	No
Observations	743,787	728,835	701,965	710,533	725,277	725,953
Pseudo R-squared						

Note: The reported coefficients are the estimated percentage change in wages associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 3D. Log Earnings by High School Graduation Year Cohorts				
	(1)	(2)	(3)	(4)
	1970 to 1979	**1980 to 1989**	**1990 to 1999**	**2000 to 2009**
AIAN Alone	-0.102***	-0.0812***	-0.0358*	-0.0439*
	(-5.71)	(-6.79)	(-2.53)	(-2.27)
AIAN and Other Race	-0.0573**	-0.0697***	-0.0307	-0.0344
	(-3.27)	(-4.73)	(-1.71)	(-1.55)
AIAN and Hispanic	0.0353	-0.0169	-0.0319	-0.0263
	(1.56)	(-1.06)	(-1.92)	(-1.39)
Black	-0.186***	-0.157***	-0.120***	-0.0922***
	(-45.56)	(-48.97)	(-32.51)	(-17.89)
Asian or Pacific Islander	-0.305***	-0.297***	-0.187***	-0.0721***
	(-42.66)	(-54.08)	(-27.94)	(-7.52)
Other race, non-white or AIAN	-0.106**	-0.206***	-0.141***	-0.0687
	(-2.69)	(-8.82)	(-5.76)	(-1.83)
Two or more races, non-AIAN	-0.214***	-0.274***	-0.149***	-0.135**
	(-5.45)	(-7.36)	(-4.06)	(-2.71)
Some college	0.186***	0.208***	0.206***	0.135***
	(84.10)	(117.88)	(106.23)	(53.16)
Associates degree	0.252***	0.287***	0.303***	0.254***
	(86.45)	(128.11)	(124.68)	(78.90)
Bachelors degree	0.513***	0.600***	0.602***	0.510***
	(177.29)	(290.96)	(280.85)	(168.95)
Advanced degree	0.730***	0.848***	0.849***	0.729***
	(186.03)	(322.29)	(315.89)	(170.99)
AIAN Alone * Bachelors degree	-0.0895**	-0.0531*	-0.196***	-0.0717*
	(-2.82)	(-2.15)	(-8.53)	(-2.24)
AIAN and other Race * Bachelors degree	-0.0727*	-0.134***	-0.0987***	-0.0822**
	(-2.11)	(-5.59)	(-3.59)	(-2.63)
AIAN and Hispanic * Bachelors degree	-0.0154	0.0186	0.0218	-0.0318
	(-0.26)	(0.47)	(0.62)	(-0.79)
Black * Bachelors degree	-0.0284***	-0.0591***	-0.0719***	-0.0199**
	(-3.65)	(-10.67)	(-12.69)	(-2.63)
Asian * Bachelors degree	0.0331**	0.110***	0.176***	0.139***
	(3.11)	(14.61)	(22.30)	(12.56)
Other race, non-white or AIAN * Bachelors degree	-0.156*	-0.140**	-0.00625	0.0268
	(-2.23)	(-3.07)	(-0.17)	(0.56)
Two or more races, non-AIAN * Bachelors degree	0.0806	0.187***	0.110**	0.105*
	(1.77)	(4.56)	(2.88)	(2.07)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Occupation	No	No	No	No
College Major	No	No	No	No
Observations	894,215	1,512,293	1,273,428	656,414
Pseudo R-squared				

Note: The reported coefficients are the estimated percentage change in wages associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 4A. Employment Status						
	(1)	(2)	(3)	(4)	(5)	(6)
	Race	**Race and Educ**	**Race, Educ and Race * Educ**	**with Demographic Controls**	**with Occupation**	**with Field of Study**
AIAN Alone	-0.0788***	-0.0650***	-0.0930***	-0.0805***	-0.0596***	-0.0803***
	(-34.36)	(-28.61)	(-23.31)	(-20.34)	(-16.49)	(-20.29)
AIAN and Other Race	-0.0611***	-0.0550***	-0.0766***	-0.0696***	-0.0585***	-0.0696***
	(-26.13)	(-23.72)	(-15.67)	(-14.32)	(-12.95)	(-14.32)
AIAN and Hispanic	-0.0320***	-0.0354***	-0.0310***	-0.0281***	-0.0285***	-0.0282***
	(-9.77)	(-10.84)	(-6.41)	(-5.82)	(-6.15)	(-5.84)
Black	-0.0705***	-0.0598***	-0.0881***	-0.0761***	-0.0585***	-0.0762***
	(-117.65)	(-100.95)	(-79.59)	(-69.06)	(-57.26)	(-69.11)
Asian or Pacific Islander	0.00779***	0.000555	0.0154***	0.0177***	0.0180***	0.0175***
	(13.90)	(0.99)	(11.18)	(12.75)	(14.44)	(12.66)
Other race, non-white or AIAN	-0.0233***	-0.0159***	-0.00415	-0.00170	0.00912	-0.00195
	(-6.41)	(-4.42)	(-0.61)	(-0.25)	(1.55)	(-0.29)
Two or more races, non-AIAN	-0.0250***	-0.0226***	-0.0898***	-0.0808***	-0.0557***	-0.0809***
	(-14.96)	(-13.62)	(-8.54)	(-7.67)	(-6.05)	(-7.68)
Some college		0.0345***	0.0302***	0.0255***	0.00932***	0.0255***
		(77.55)	(64.68)	(54.66)	(20.42)	(54.69)
Associates degree		0.0564***	0.0504***	0.0429***	0.0190***	0.0429***
		(107.49)	(91.54)	(77.98)	(34.72)	(78.08)
Bachelors degree		0.0764***	0.0701***	0.0585***	0.0301***	0.0539***
		(187.29)	(163.67)	(136.48)	(65.78)	(41.05)
Advanced degree		0.0915***	0.0846***	0.0682***	0.0316***	0.0624***
		(212.45)	(187.95)	(150.89)	(60.60)	(47.75)
AIAN Alone * Bachelors degree			0.0750***	0.0711***	0.0520***	0.0701***
			(13.04)	(12.46)	(9.73)	(12.29)
AIAN and other Race * Bachelors degree			0.0433***	0.0424***	0.0348***	0.0427***
			(6.75)	(6.64)	(5.77)	(6.69)
AIAN and Hispanic * Bachelors degree			0.000147	-0.000604	-0.00373	0.000312
			(0.02)	(-0.06)	(-0.41)	(0.03)
Black * Bachelors degree			0.0567***	0.0555***	0.0401***	0.0551***
			(37.04)	(36.42)	(28.13)	(36.15)
Asian * Bachelors degree			-0.0206***	-0.0199***	-0.0177***	-0.0209***
			(-12.78)	(-12.37)	(-12.17)	(-12.93)
Other race, non-white or AIAN * Bachelors degree			-0.00995	-0.00764	-0.0159	-0.00762
			(-1.10)	(-0.85)	(-1.92)	(-0.85)
Two or more races, non-AIAN * Bachelors degree			0.0786***	0.0728***	0.0492***	0.0735***
			(7.27)	(6.72)	(5.18)	(6.78)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	Yes	No
College Major	No	No	No	No	No	Yes
Observations	5,987,087	5,987,087	5,987,087	5,987,087	5,987,087	5,987,087
Pseudo R-squared						

Note: The reported coefficients are the estimated change in probability of employment associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 4B. Employment Status by Demographic							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	**Male**	**Female**	**Urban**	**Rural**	**Outside Reservation**	**On or near Reservation**
AIAN Alone	-0.0805***	-0.0914***	-0.0637***	-0.0673***	-0.0967***	-0.0563***	-0.0882***
	(-20.34)	(-17.03)	(-11.03)	(-13.32)	(-15.08)	(-7.78)	(-18.48)
AIAN and Other Race	-0.0696***	-0.0715***	-0.0646***	-0.0705***	-0.0627***	-0.0773***	-0.0517***
	(-14.32)	(-11.20)	(-8.70)	(-12.92)	(-5.91)	(-12.52)	(-6.75)
AIAN and Hispanic	-0.0281***	-0.0311***	-0.0256**	-0.0281***	-0.0244	-0.0227***	-0.0489***
	(-5.82)	(-5.15)	(-3.20)	(-5.55)	(-1.53)	(-4.39)	(-3.83)
Black	-0.0761***	-0.0864***	-0.0626***	-0.0775***	-0.0634***	-0.0774***	-0.0656***
	(-69.06)	(-55.92)	(-40.04)	(-66.85)	(-17.54)	(-65.90)	(-20.32)
Asian or Pacific Islander	0.0177***	0.0195***	0.0174***	0.0174***	0.0179*	0.0162***	0.0282***
	(12.75)	(9.81)	(9.02)	(12.31)	(2.29)	(10.89)	(7.49)
Other race, non-white or AIAN	-0.00170	-0.00136	-0.000414	-0.00166	-0.0177	0.00225	-0.0510
	(-0.25)	(-0.15)	(-0.04)	(-0.24)	(-0.65)	(0.33)	(-1.73)
Two or more races, non-AIAN	-0.0808***	-0.0718***	-0.0935***	-0.0765***	-0.139**	-0.0690***	-0.129***
	(-7.67)	(-5.36)	(-5.48)	(-7.02)	(-3.27)	(-6.18)	(-4.53)
Some college	0.0255***	0.0254***	0.0258***	0.0250***	0.0277***	0.0253***	0.0267***
	(54.66)	(40.99)	(36.28)	(49.47)	(23.05)	(49.26)	(23.74)
Associates degree	0.0429***	0.0398***	0.0463***	0.0417***	0.0492***	0.0425***	0.0444***
	(77.98)	(51.38)	(58.49)	(69.36)	(36.58)	(69.91)	(34.49)
Bachelors degree	0.0585***	0.0548***	0.0621***	0.0577***	0.0648***	0.0586***	0.0579***
	(136.48)	(96.27)	(94.50)	(125.09)	(55.15)	(124.92)	(54.14)
Advanced degree	0.0682***	0.0613***	0.0740***	0.0673***	0.0756***	0.0683***	0.0670***
	(150.89)	(101.38)	(107.86)	(138.95)	(61.30)	(139.01)	(57.39)
AIAN Alone * Bachelors degree	0.0711***	0.0732***	0.0595***	0.0585***	0.0871***	0.0438***	0.0834***
	(12.46)	(8.11)	(8.11)	(8.60)	(7.81)	(4.48)	(11.88)
AIAN and other Race * Bachelors degree	0.0424***	0.0515***	0.0297**	0.0432***	0.0358*	0.0479***	0.0336**
	(6.64)	(5.81)	(3.20)	(6.17)	(2.23)	(6.05)	(3.22)
AIAN and Hispanic * Bachelors degree	-0.000604	-0.00819	0.0111	0.00118	-0.0315	-0.00397	0.00969
	(-0.06)	(-0.58)	(0.89)	(0.12)	(-0.79)	(-0.40)	(0.34)
Black * Bachelors degree	0.0555***	0.0639***	0.0411***	0.0568***	0.0407***	0.0563***	0.0497***
	(36.42)	(28.10)	(19.93)	(36.00)	(6.12)	(34.99)	(10.31)
Asian * Bachelors degree	-0.0199***	-0.0161***	-0.0257***	-0.0197***	-0.0244*	-0.0193***	-0.0251***
	(-12.37)	(-7.01)	(-11.34)	(-12.01)	(-2.39)	(-11.19)	(-5.42)
Other race, non-white or AIAN * Bachelors degree	-0.00764	-0.00497	-0.0136	-0.00933	0.0509	-0.0125	0.0488
	(-0.85)	(-0.40)	(-1.04)	(-1.01)	(1.72)	(-1.34)	(1.40)
Two or more races, non-AIAN * Bachelors degree	0.0728***	0.0648***	0.0826***	0.0678***	0.143**	0.0611***	0.122***
	(6.72)	(4.65)	(4.76)	(6.06)	(3.27)	(5.31)	(4.16)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No	No
College Major	No	No	No	No	No	No	No
Observations	5,987,087	3,119,116	2,867,971	5,169,687	817,400	5,010,686	976,401
Pseudo R-squared							

Note: The reported coefficients are the estimated change in probability of employment associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 4C. Employment Status by Year						
	(1)	(2)	(3)	(4)	(5)	(6)
	2009	**2010**	**2011**	**2012**	**2013**	**2014**
AIAN Alone	-0.0695***	-0.0878***	-0.0848***	-0.0831***	-0.0884***	-0.0684***
	(-7.07)	(-8.83)	(-8.19)	(-8.40)	(-9.06)	(-8.53)
AIAN and Other Race	-0.0715***	-0.0782***	-0.0529***	-0.0717***	-0.0802***	-0.0610***
	(-6.25)	(-6.66)	(-4.60)	(-6.18)	(-5.94)	(-5.37)
AIAN and Hispanic	-0.0212	-0.0451***	-0.0463**	-0.0141	-0.0136	-0.0301**
	(-1.84)	(-3.73)	(-3.15)	(-1.29)	(-1.32)	(-2.72)
Black	-0.0658***	-0.0787***	-0.0782***	-0.0820***	-0.0784***	-0.0747***
	(-24.87)	(-29.60)	(-27.75)	(-30.03)	(-28.88)	(-28.58)
Asian or Pacific Islander	0.0171***	0.0199***	0.0212***	0.0175***	0.0173***	0.0121***
	(4.88)	(5.86)	(5.96)	(5.01)	(5.27)	(3.91)
Other race, non-white or AIAN	-0.0158	0.0309*	-0.0128	0.0100	0.0153	-0.0335*
	(-0.90)	(2.06)	(-0.68)	(0.63)	(1.25)	(-1.96)
Two or more races, non-AIAN	-0.132***	-0.0745***	-0.0810***	-0.0944***	-0.0728**	-0.0542*
	(-4.09)	(-3.30)	(-3.34)	(-3.71)	(-2.83)	(-2.04)
Some college	0.0274***	0.0289***	0.0262***	0.0254***	0.0233***	0.0208***
	(24.72)	(25.18)	(21.07)	(21.88)	(20.73)	(19.79)
Associates degree	0.0474***	0.0498***	0.0481***	0.0408***	0.0387***	0.0313***
	(35.80)	(36.49)	(33.08)	(29.37)	(29.94)	(25.17)
Bachelors degree	0.0621***	0.0665***	0.0654***	0.0593***	0.0534***	0.0438***
	(60.33)	(62.63)	(57.55)	(55.51)	(51.96)	(45.18)
Advanced degree	0.0720***	0.0807***	0.0773***	0.0684***	0.0607***	0.0504***
	(65.76)	(72.32)	(65.13)	(60.55)	(55.71)	(49.59)
AIAN Alone * Bachelors degree	0.0671***	0.0771***	0.0684***	0.0668***	0.0823***	0.0654***
	(5.05)	(5.59)	(4.06)	(4.75)	(5.77)	(6.16)
AIAN and other Race * Bachelors degree	0.0491***	0.0464**	0.0184	0.0300	0.0655***	0.0425**
	(3.30)	(2.84)	(1.16)	(1.88)	(4.08)	(2.90)
AIAN and Hispanic * Bachelors degree	-0.0269	0.0285	0.0131	-0.0220	-0.00360	0.00752
	(-0.88)	(1.37)	(0.57)	(-0.90)	(-0.22)	(0.35)
Black * Bachelors degree	0.0457***	0.0552***	0.0527***	0.0629***	0.0571***	0.0605***
	(12.32)	(14.82)	(13.17)	(16.62)	(15.64)	(17.35)
Asian * Bachelors degree	-0.0246***	-0.0237***	-0.0247***	-0.0162***	-0.0208***	-0.00891*
	(-5.95)	(-5.87)	(-5.86)	(-4.02)	(-5.42)	(-2.56)
Other race, non-white or AIAN * Bachelors degree	-0.0150	-0.0403	-0.00399	-0.00619	-0.00262	0.0197
	(-0.64)	(-1.87)	(-0.16)	(-0.28)	(-0.16)	(0.90)
Two or more races, non-AIAN * Bachelors degree	0.129***	0.0745**	0.0556*	0.0915***	0.0652*	0.0479
	(3.93)	(3.19)	(2.16)	(3.49)	(2.48)	(1.78)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No
College Major	No	No	No	No	No	No
Observations	1,024,620	1,024,260	987,041	983,448	990,408	977,310
Pseudo R-squared						

Note: The reported coefficients are the estimated change in probability of employment associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 4D. Employment Status by High School Graduation Year Cohorts				
	(1)	(2)	(3)	(4)
	1970 to 1979	**1980 to 1989**	**1990 to 1999**	**2000 to 2009**
AIAN Alone	-0.0509***	-0.0728***	-0.0908***	-0.0973***
	(-6.58)	(-11.14)	(-11.57)	(-9.99)
AIAN and Other Race	-0.0469***	-0.0689***	-0.0673***	-0.0909***
	(-4.84)	(-8.36)	(-7.32)	(-7.31)
AIAN and Hispanic	-0.00669	-0.0212**	-0.0224**	-0.0551***
	(-0.58)	(-2.64)	(-2.85)	(-4.37)
Black	-0.0509***	-0.0585***	-0.0837***	-0.115***
	(-23.54)	(-33.54)	(-39.47)	(-37.56)
Asian or Pacific Islander	0.0000983	0.0123***	0.0271***	0.0358***
	(0.03)	(5.75)	(9.97)	(8.12)
Other race, non-white or AIAN	0.0115	-0.00359	0.00255	-0.0129
	(0.80)	(-0.35)	(0.22)	(-0.65)
Two or more races, non-AIAN	-0.0498*	-0.0324*	-0.112***	-0.112***
	(-2.12)	(-2.26)	(-5.58)	(-4.25)
Some college	0.0138***	0.0212***	0.0296***	0.0351***
	(14.79)	(28.02)	(32.20)	(26.30)
Associates degree	0.0241***	0.0333***	0.0504***	0.0605***
	(20.93)	(36.45)	(46.92)	(38.24)
Bachelors degree	0.0307***	0.0435***	0.0674***	0.0783***
	(29.54)	(57.69)	(75.22)	(54.89)
Advanced degree	0.0430***	0.0528***	0.0779***	0.0774***
	(31.67)	(59.74)	(76.52)	(42.58)
AIAN Alone * Bachelors degree	0.0342*	0.0618***	0.0866***	0.0923***
	(2.34)	(6.24)	(8.77)	(6.87)
AIAN and other Race * Bachelors degree	0.00295	0.0494***	0.0466***	0.0547***
	(0.20)	(4.56)	(4.01)	(3.52)
AIAN and Hispanic * Bachelors degree	0.00678	-0.0143	-0.00895	0.0129
	(0.32)	(-0.81)	(-0.56)	(0.64)
Black * Bachelors degree	0.0319***	0.0436***	0.0595***	0.0919***
	(9.42)	(18.00)	(20.79)	(23.16)
Asian * Bachelors degree	-0.00595	-0.0144***	-0.0304***	-0.0407***
	(-1.66)	(-5.63)	(-10.00)	(-8.41)
Other race, non-white or AIAN * Bachelors degree	-0.0179	-0.0279	-0.00542	0.0119
	(-0.85)	(-1.73)	(-0.36)	(0.52)
Two or more races, non-AIAN * Bachelors degree	0.0384	0.0195	0.104***	0.0992***
	(1.56)	(1.28)	(5.04)	(3.71)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Occupation	No	No	No	No
College Major	No	No	No	No
Observations	1,224,631	2,059,257	1,746,711	956,488
Pseudo R-squared				
Note: The reported coefficients are the estimated change in probability of employment associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.				
*p<.10; **p<.05; ***p<.01				

Table 5A. Labor Force Participation						
	(1)	(2)	(3)	(4)	(5)	(6)
	Race	**Race and Educ**	**Race, Educ and Race * Educ**	**with Demographic Controls**	**with Occupation**	**with Field of Study**
AIAN Alone	-0.129***	-0.102***	-0.141***	-0.124***	-0.0607***	-0.124***
	(-50.55)	(-40.64)	(-37.15)	(-33.17)	(-23.19)	(-33.16)
AIAN and Other Race	-0.100***	-0.0895***	-0.137***	-0.133***	-0.0804***	-0.133***
	(-38.88)	(-35.55)	(-29.49)	(-28.98)	(-23.68)	(-29.01)
AIAN and Hispanic	-0.0260***	-0.0333***	-0.0290***	-0.0291***	-0.0215***	-0.0291***
	(-7.37)	(-9.53)	(-5.68)	(-5.83)	(-6.48)	(-5.84)
Black	-0.0556***	-0.0365***	-0.0883***	-0.0820***	-0.0394***	-0.0822***
	(-87.72)	(-58.87)	(-83.08)	(-77.07)	(-56.08)	(-77.19)
Asian or Pacific Islander	-0.0215***	-0.0393***	0.00221	0.0117***	0.0106***	0.0114***
	(-26.28)	(-48.09)	(1.23)	(6.65)	(9.70)	(6.48)
Other race, non-white or AIAN	-0.0287***	-0.0210***	-0.00639	-0.00210	0.00544	-0.00248
	(-6.51)	(-4.80)	(-0.84)	(-0.28)	(1.17)	(-0.33)
Two or more races, non-AIAN	-0.0144***	-0.0229***	-0.161***	-0.152***	-0.0744***	-0.152***
	(-7.50)	(-12.11)	(-17.34)	(-16.59)	(-12.29)	(-16.62)
Some college		0.0790***	0.0678***	0.0694***	0.0275***	0.0694***
		(153.72)	(119.69)	(124.60)	(63.77)	(124.52)
Associates degree		0.113***	0.102***	0.108***	0.0470***	0.108***
		(176.52)	(145.41)	(156.11)	(84.35)	(156.09)
Bachelors degree		0.130***	0.118***	0.116***	0.0814***	0.0913***
		(261.62)	(218.82)	(217.04)	(166.01)	(50.75)
Advanced degree		0.163***	0.152***	0.149***	0.100***	0.127***
		(301.15)	(259.87)	(252.74)	(164.59)	(71.20)
AIAN Alone * Bachelors degree			0.127***	0.126***	0.0561***	0.126***
			(18.02)	(18.03)	(10.06)	(18.02)
AIAN and other Race * Bachelors degree			0.114***	0.120***	0.0614***	0.121***
			(16.34)	(17.23)	(10.67)	(17.45)
AIAN and Hispanic * Bachelors degree			0.0217*	0.0197*	-0.0105	0.0224*
			(2.16)	(2.01)	(-1.32)	(2.29)
Black * Bachelors degree			0.117***	0.120***	0.0420***	0.118***
			(75.53)	(76.99)	(35.00)	(75.73)
Asian * Bachelors degree			-0.0633***	-0.0704***	-0.0527***	-0.0718***
			(-28.32)	(-32.25)	(-36.00)	(-32.86)
Other race, non-white or AIAN * Bachelors degree			-0.0298*	-0.0324**	-0.0327***	-0.0318**
			(-2.53)	(-2.79)	(-3.96)	(-2.74)
Two or more races, non-AIAN * Bachelors degree			0.154***	0.147***	0.0646***	0.149***
			(15.68)	(15.18)	(9.67)	(15.38)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
Occupation	No	No	No	No	Yes	No
College Major	No	No	No	No	No	Yes
Observations	7,420,632	7,420,632	7,420,632	7,420,632	7,420,632	7,420,632
Pseudo R-squared						

Note: The reported coefficients are the estimated change in probability of labor force participation associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 5B. Labor Force Participation by Demographic							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	**Male**	**Female**	**Urban**	**Rural**	**Outside Reservation**	**On or near Reservation**
AIAN Alone	-0.124***	-0.141***	-0.0992***	-0.122***	-0.127***	-0.132***	-0.120***
	(-33.17)	(-29.82)	(-16.80)	(-25.58)	(-20.50)	(-18.78)	(-26.70)
AIAN and Other Race	-0.133***	-0.151***	-0.107***	-0.132***	-0.134***	-0.141***	-0.116***
	(-28.98)	(-25.86)	(-14.66)	(-25.44)	(-13.50)	(-24.84)	(-14.81)
AIAN and Hispanic	-0.0291***	-0.0377***	-0.0192*	-0.0283***	-0.0266	-0.0226***	-0.0519***
	(-5.83)	(-6.42)	(-2.30)	(-5.46)	(-1.48)	(-4.13)	(-4.34)
Black	-0.0820***	-0.151***	0.00562***	-0.0736***	-0.155***	-0.0767***	-0.123***
	(-77.07)	(-108.42)	(3.47)	(-65.33)	(-47.23)	(-67.49)	(-39.97)
Asian or Pacific Islander	0.0117***	0.00989***	0.0279***	0.0138***	-0.0108	0.0129***	0.00621
	(6.65)	(4.64)	(10.58)	(7.68)	(-1.15)	(6.90)	(1.24)
Other race, non-white or AIAN	-0.00210	-0.000316	0.00310	0.00170	-0.0836*	0.00167	-0.0404
	(-0.28)	(-0.04)	(0.26)	(0.22)	(-2.29)	(0.21)	(-1.51)
Two or more races, non-AIAN	-0.152***	-0.158***	-0.131***	-0.147***	-0.205***	-0.149***	-0.156***
	(-16.59)	(-13.49)	(-9.41)	(-15.44)	(-6.20)	(-14.93)	(-6.94)
Some college	0.0694***	0.0438***	0.0945***	0.0689***	0.0689***	0.0705***	0.0637***
	(124.60)	(66.76)	(104.90)	(114.53)	(46.40)	(115.67)	(46.28)
Associates degree	0.108***	0.0649***	0.146***	0.105***	0.121***	0.108***	0.108***
	(156.11)	(77.28)	(137.46)	(139.42)	(68.79)	(141.60)	(64.77)
Bachelors degree	0.116***	0.0835***	0.142***	0.114***	0.136***	0.116***	0.119***
	(217.04)	(139.61)	(161.36)	(199.99)	(86.06)	(199.06)	(84.84)
Advanced degree	0.149***	0.0792***	0.198***	0.147***	0.173***	0.148***	0.156***
	(252.74)	(119.70)	(207.16)	(235.76)	(94.49)	(233.29)	(96.27)
AIAN Alone * Bachelors degree	0.126***	0.112***	0.117***	0.120***	0.123***	0.104***	0.144***
	(18.03)	(12.05)	(11.46)	(14.63)	(8.61)	(8.97)	(16.19)
AIAN and other Race * Bachelors degree	0.120***	0.128***	0.0948***	0.121***	0.0880***	0.124***	0.109***
	(17.23)	(14.94)	(8.97)	(16.07)	(4.49)	(15.13)	(8.21)
AIAN and Hispanic * Bachelors degree	0.0197*	0.0156	0.0248	0.0192	0.0158	0.0144	0.0349
	(2.01)	(1.43)	(1.56)	(1.90)	(0.37)	(1.35)	(1.40)
Black * Bachelors degree	0.120***	0.139***	0.0571***	0.113***	0.163***	0.115***	0.152***
	(76.99)	(65.54)	(25.50)	(70.01)	(22.49)	(70.33)	(29.04)
Asian * Bachelors degree	-0.0704***	-0.0418***	-0.104***	-0.0693***	-0.0827***	-0.0731***	-0.0467***
	(-32.25)	(-16.35)	(-31.47)	(-31.25)	(-5.84)	(-31.52)	(-7.04)
Other race, non-white or AIAN * Bachelors degree	-0.0324**	-0.0226	-0.0502**	-0.0351**	0.0561	-0.0369**	0.0143
	(-2.79)	(-1.67)	(-2.77)	(-2.96)	(1.04)	(-3.04)	(0.37)
Two or more races, non-AIAN * Bachelors degree	0.147***	0.144***	0.127***	0.144***	0.162***	0.141***	0.170***
	(15.18)	(11.75)	(8.59)	(14.40)	(4.29)	(13.37)	(7.12)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No	No
College Major	No	No	No	No	No	No	No
Observations	7,420,632	3,650,091	3,770,541	6,361,175	1,059,457	6,179,074	1,241,558
Pseudo R-squared							

Note: The reported coefficients are the estimated change in probability of labor force participation associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 5C. Labor Force Participation by Year						
	(1)	(2)	(3)	(4)	(5)	(6)
	2009	**2010**	**2011**	**2012**	**2013**	**2014**
AIAN Alone	-0.107***	-0.127***	-0.135***	-0.119***	-0.121***	-0.131***
	(-11.16)	(-13.55)	(-14.75)	(-13.31)	(-13.32)	(-14.88)
AIAN and Other Race	-0.123***	-0.118***	-0.154***	-0.142***	-0.134***	-0.131***
	(-11.80)	(-11.08)	(-13.25)	(-12.73)	(-11.23)	(-11.01)
AIAN and Hispanic	-0.0179	-0.0222*	-0.0488***	-0.0394**	-0.0151	-0.0314*
	(-1.51)	(-1.97)	(-3.94)	(-3.23)	(-1.23)	(-2.44)
Black	-0.0883***	-0.0864***	-0.0842***	-0.0831***	-0.0788***	-0.0711***
	(-34.51)	(-34.20)	(-32.31)	(-31.78)	(-29.40)	(-26.73)
Asian or Pacific Islander	0.00213	0.0101*	0.0104*	0.0128**	0.0128**	0.0212***
	(0.50)	(2.48)	(2.36)	(2.98)	(2.92)	(4.88)
Other race, non-white or AIAN	0.00970	-0.0243	-0.0180	-0.00283	0.0189	-0.00101
	(0.61)	(-1.25)	(-0.86)	(-0.15)	(1.07)	(-0.06)
Two or more races, non-AIAN	-0.173***	-0.116***	-0.143***	-0.185***	-0.154***	-0.146***
	(-5.80)	(-5.72)	(-6.61)	(-8.61)	(-7.05)	(-6.69)
Some college	0.0671***	0.0687***	0.0661***	0.0696***	0.0701***	0.0756***
	(52.97)	(53.56)	(46.71)	(50.24)	(49.44)	(52.94)
Associates degree	0.101***	0.107***	0.105***	0.108***	0.111***	0.117***
	(63.96)	(66.48)	(59.99)	(62.34)	(63.96)	(66.78)
Bachelors degree	0.102***	0.110***	0.111***	0.119***	0.126***	0.130***
	(83.17)	(88.14)	(80.56)	(90.09)	(93.71)	(95.72)
Advanced degree	0.133***	0.142***	0.143***	0.155***	0.158***	0.162***
	(97.47)	(104.44)	(93.40)	(107.77)	(107.46)	(108.76)
AIAN Alone * Bachelors degree	0.0774***	0.135***	0.133***	0.139***	0.134***	0.136***
	(4.04)	(8.08)	(7.61)	(8.80)	(8.18)	(8.08)
AIAN and other Race * Bachelors degree	0.130***	0.0940***	0.136***	0.138***	0.121***	0.102***
	(8.51)	(5.14)	(7.34)	(8.45)	(7.39)	(5.86)
AIAN and Hispanic * Bachelors degree	0.0159	0.0249	0.0487	0.0198	-0.0347	0.0392
	(0.65)	(1.06)	(1.82)	(0.84)	(-1.38)	(1.86)
Black * Bachelors degree	0.126***	0.124***	0.121***	0.125***	0.114***	0.108***
	(33.62)	(33.75)	(30.73)	(32.81)	(29.70)	(28.13)
Asian * Bachelors degree	-0.0598***	-0.0686***	-0.0691***	-0.0732***	-0.0729***	-0.0798***
	(-11.34)	(-13.40)	(-12.27)	(-13.66)	(-13.59)	(-15.02)
Other race, non-white or AIAN * Bachelors degree	-0.0686*	-0.0301	-0.0224	-0.00869	-0.0279	-0.0254
	(-2.55)	(-1.04)	(-0.69)	(-0.32)	(-1.01)	(-0.94)
Two or more races, non-AIAN * Bachelors degree	0.175***	0.108***	0.126***	0.176***	0.153***	0.143***
	(5.71)	(5.01)	(5.40)	(7.74)	(6.66)	(6.22)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No
College Major	No	No	No	No	No	No
Observations	1,245,196	1,251,461	1,237,812	1,229,719	1,235,497	1,220,947
Pseudo R-squared						

Note: The reported coefficients are the estimated change in probability of labor force participation associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01

Table 5D. Labor Force Participation by High School Graduation Year Cohorts				
	(1)	(2)	(3)	(4)
	1970 to 1979	**1980 to 1989**	**1990 to 1999**	**2000 to 2009**
AIAN Alone	-0.138***	-0.124***	-0.109***	-0.126***
	(-16.59)	(-19.37)	(-15.44)	(-14.42)
AIAN and Other Race	-0.151***	-0.141***	-0.128***	-0.101***
	(-15.41)	(-17.77)	(-14.69)	(-9.17)
AIAN and Hispanic	-0.0227	-0.0424***	-0.0211**	-0.0111
	(-1.72)	(-4.58)	(-2.61)	(-0.96)
Black	-0.0883***	-0.0751***	-0.0747***	-0.0927***
	(-37.61)	(-41.90)	(-37.68)	(-34.83)
Asian or Pacific Islander	0.0355***	0.0314***	0.00907**	-0.0150**
	(9.50)	(11.26)	(2.65)	(-3.03)
Other race, non-white or AIAN	0.00165	0.0168	0.0000232	-0.00946
	(0.09)	(1.32)	(0.00)	(-0.53)
Two or more races, non-AIAN	-0.0663**	-0.104***	-0.148***	-0.193***
	(-2.93)	(-6.54)	(-9.19)	(-9.44)
Some college	0.0558***	0.0597***	0.0668***	0.0655***
	(44.77)	(62.51)	(63.32)	(45.47)
Associates degree	0.0806***	0.0915***	0.109***	0.116***
	(50.39)	(76.98)	(83.39)	(64.46)
Bachelors degree	0.0734***	0.0894***	0.118***	0.142***
	(51.54)	(90.99)	(108.30)	(86.78)
Advanced degree	0.0908***	0.127***	0.159***	0.173***
	(48.17)	(108.16)	(123.62)	(77.68)
AIAN Alone * Bachelors degree	0.123***	0.127***	0.123***	0.130***
	(7.11)	(10.48)	(9.80)	(8.37)
AIAN and other Race * Bachelors degree	0.105***	0.120***	0.121***	0.113***
	(6.20)	(9.62)	(9.42)	(7.83)
AIAN and Hispanic * Bachelors degree	0.00152	0.0170	0.0101	-0.00934
	(0.06)	(0.83)	(0.67)	(-0.46)
Black * Bachelors degree	0.120***	0.126***	0.115***	0.104***
	(30.81)	(47.96)	(41.65)	(28.10)
Asian * Bachelors degree	-0.0478***	-0.0593***	-0.0687***	-0.105***
	(-9.73)	(-16.58)	(-17.00)	(-17.94)
Other race, non-white or AIAN * Bachelors degree	-0.0195	-0.0270	-0.0366	-0.0602*
	(-0.63)	(-1.35)	(-1.85)	(-2.31)
Two or more races, non-AIAN * Bachelors degree	0.0581*	0.115***	0.144***	0.163***
	(2.32)	(6.78)	(8.57)	(7.65)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Occupation	No	No	No	No
College Major	No	No	No	No
Observations	1,557,339	2,528,092	2,148,548	1,186,653
Pseudo R-squared				

Note: The reported coefficients are the estimated change in probability of labor force participation associated with a discrete change in the independent variable, calculated at the mean of the sample. Robust standard errors are reported in the parenthesis.

*p<.10; **p<.05; ***p<.01