

The History of Wage Disparities Between White, Black, and Hispanic People

Unique Davis, Rodney Crowder, Dylan Benson, Jake Lessard, Sam Coronado Cepeda

The University of North Carolina at Charlotte

DTSC-1302-001-Data and Society

Justin Grandinetti and Marco Scipioni

December 9, 2023

Introduction:

There has always been a disparity in how much people are paid based on race. It has been found that white people tend to make more than any other race. Our project data (Wages and Education) displays how wages throughout 1973–2022 have changed over time for each level of education (from high school to a master’s degree) by race. We will narrow down our data to implement our research question. Our code will analyze the data for those who obtained a bachelor's degree during the years 2000–2022. In order to effectively approach this data based on the specifications of our research question, we will implement a linear regression analysis to focus on wages over time for each race, and import the Seaborn package to utilize various plots and graphs displaying these trends over time per demographic. By narrowing down our data, we will be able to see the differences in annual income for White, Black, and Hispanic people while obtaining meaningful data and insights on those obtaining a bachelor's academic degree. Our analysis will help us answer the following research question: How do bachelor's degree wages for the demographics of White, Black, and Hispanic populations compare to the overall average bachelor’s wage from 2000 to 2022?

Context and Implications:

In this study on racial wage disparities by education from 2000 to 2022, a comprehensive literature review synthesizes ten peer-reviewed sources. These sources cover various aspects, including historical wage disparities, racial bias in workplaces, the role of virtue ethics in leadership, and the socioeconomic impacts of wage inequalities. The research directly impacts stakeholders such as the workforce, potential college students, business owners, policymakers,

and the academic community. Wage disparities by race in our study benefit the White stakeholders while harming the Black and Hispanic stakeholders. White people have more educational opportunities and historically more money than their Black and Hispanic counterparts, which hurts the other two races financially and educationally.

We will navigate potential harms, like reinforcing stereotypes or misconceptions due to biased data interpretation, and potential benefits, such as promoting awareness and action toward wage equity. The ethical evaluation of the project is grounded in a virtue ethics framework, emphasizing the character of decision-makers in wage disparities, a utilitarian perspective assessing overall benefits and harms, a deontological approach considering rights and duties, and a contextual sensitivity to socio-economic and historical factors. This multifaceted ethical approach ensures the research is not only insightful but also socially responsible and ethically sound.

Looking at our project data, the average Black person with a bachelor's degree has the lowest hourly wage for every year of our dataset except for a few, where the average Hispanic person with a bachelor's degree has the lowest wage. In a similar analysis performed on data from 1979-2012, the statistical analysis states, "Unlike education's contribution to the racial pay gaps, overall attainment differences explain none of the gender pay gaps among blacks or whites" (Colavito et al., 2023). The three groups we're studying all have the same level of education with a generally wide range of hourly incomes, indicating that there is an evident wage gap. A study from 2019 shows how large of a gap there was between the average White person and the average Black person: "In 2019, the typical (median) black worker earned 24.4% less per hour than the typical white worker" (Darity & Wilson, 2022). There is also a wage gap for the Hispanic community when you compare it to the White community. In 2017, there was a study

providing evidence of this wage gap, “However, by 2017, Hispanic men were still making 32.5 percent less than white men...”, “In 2017, Hispanic women were making 40.0 percent less than white men...” (Dávila & Mora, 2018). This negatively affects one of our stakeholders, who is an upcoming college student. As a prospective college student, you may be discouraged from going to college due to the evident wage gap among each demographic obtaining a bachelor’s degree. This is not only a problem for current college students and upcoming college students, but it is also a problem for the people currently in the workforce. People working similar jobs while obtaining different salary averages do not align from an ethical point of view. “On the bachelor’s degree pathway, median earnings in 2016 for good jobs were \$75,000 for White workers, compared to \$65,000 for both Black and Latino workers.” (The Unequal Race For Good Jobs, 2020). This shows a clear wage gap for the current workforce that positively affects the White demographic with a financial advantage and negatively affects the Hispanic and Black demographics by showing lower annual salaries.

Discrimination and wage gaps occur increasingly for Black individuals during recessions, along with the unemployment rate. The reason that the wage gap increases is that Black individuals are more likely to get fired due to the downturn or get their hours reduced (Chattopadhyay, S., & Bianchi, E. C., 2021). This occurs in a variety of fields, including business and sports. The size of the salary disparity depends on the industry. For example, when a job is classified as a hard-skill intensive versus a soft-skill intensive job, the wage gap between White and Black individuals is smaller. This is because Black individuals working in soft-skilled jobs face more discrimination, which affects their wages or the overall income distribution among different races (Fan, 2017).

Measurement Section:

The research focuses on wage disparities across races (White, Black, and Hispanic) for individuals with a bachelor's degree from 2000 to 2022. This timeframe and educational level are selected to provide a focused view of wage trends in a specific educational and temporal context. The study involves analyzing wage trends over 22 years, assessing how these trends have evolved, and comparing them across the three racial groups. Wages for each race are compared with the overall average bachelor's wage during the same period, providing a benchmark for understanding disparities.

In this analysis, we aim to explore the dynamics between wages and education level, with a particular emphasis on those who have attained a bachelor's degree. Wages are conceptualized as the annual income of individuals, which includes not only salaries but may also cover other forms of compensation, depending on the data available. The study focuses on a time frame from 2000 to 2022, offering a contemporary perspective on the trends in wages.

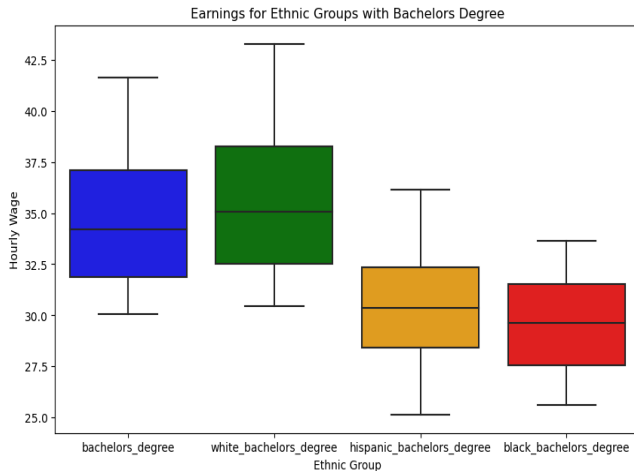
For this study, wages are operationalized based on the annual income figures reported in the dataset. These figures are adjusted for inflation to maintain consistency and comparability over time. The educational level of interest is specifically defined as the attainment of a bachelor's degree, as classified in the dataset.

The study also considers racial categorization, dividing the population into three groups: White, Black, and Hispanic, as per the dataset's parameters. It's crucial to note how the dataset defines and categorizes these racial groups, as this can significantly impact the study's outcomes.

The analytical approach of this study involves employing statistical methods such as regression analysis. These techniques are utilized to compare wages across the three racial groups and against the overall average. An integral part of this analysis is the control for

potential confounding variables. Factors such as age, gender, geographical location, and industry of employment are taken into account to ensure a balanced and accurate analysis of how education level impacts wages across different racial groups within the specified time frame.

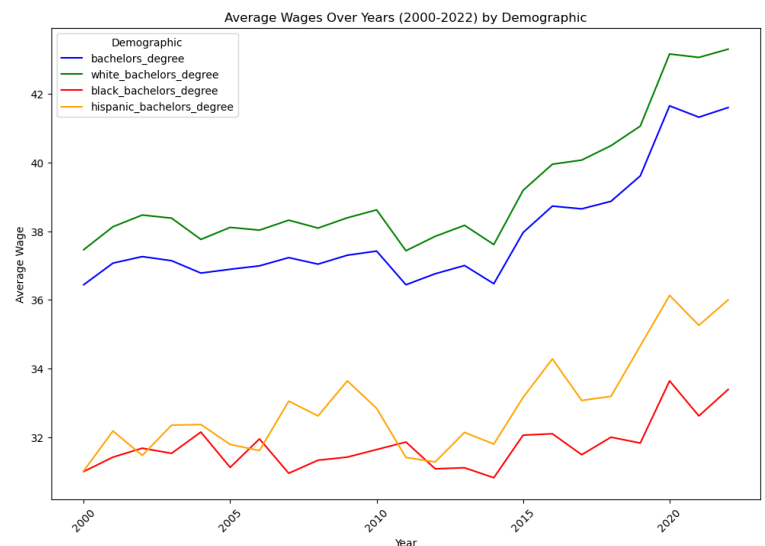
Data Section:



We are using three different models (Histogram, Line Graph, and Bar Chart) for displaying the trends between the earnings for each demographic (White, Black, Hispanic) with an obtained bachelor's degree to visualize the correlation of average hourly wages over the given time frame (2000-2022). These models

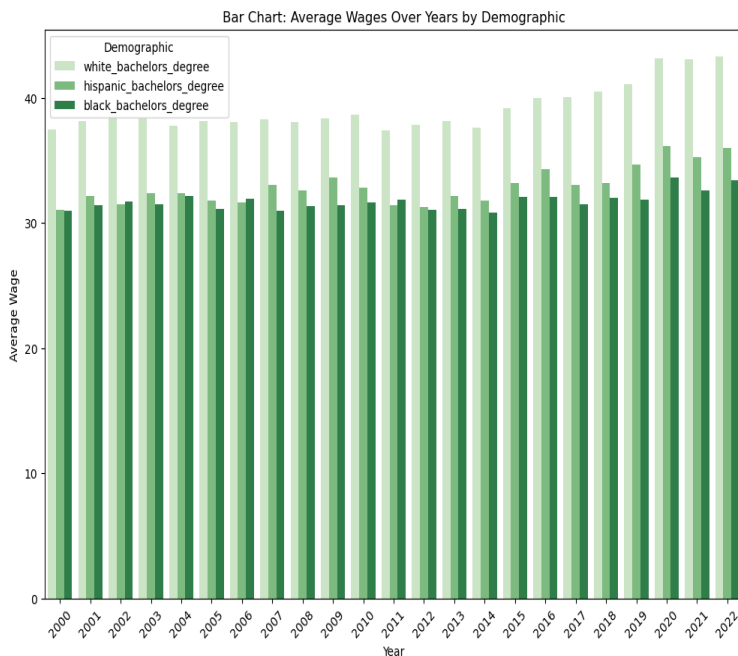
accurately represent the increase in wages since the year 2000 and show the correlations between each of the three demographics. The data manipulation was accomplished by utilizing the seaborn package to import our plots to represent data for average wages over time.

The dataset includes X number of individuals with a bachelor's degree across the three racial groups over the past 22 years. Summary statistics such as mean, median, mode, standard deviation, and the interquartile range were calculated for each group's wages annually. Trends indicate a



general increase in average hourly wages for all groups, with the rate of increase varying between the groups.

The data displayed for White individuals with a bachelor's degree shows a steady increase in average hourly wages from 2000 to 2022. The data for Black individuals with a



bachelor's degree shows a similar increase but with a lower starting and ending wage than their White counterparts. The data visualized for Hispanic individuals with a bachelor's degree indicates a gradual increase in wages with occasional years where the increase plateaus or declines slightly.

The analysis reveals a persistent wage gap between White, Black, and Hispanic individuals holding a bachelor's degree, with

White individuals earning the most on average and Black individuals earning the least. The wage gap has shown slight variation over the years but remains a significant issue. The data supports the hypothesis that racial wage disparities exist even when education levels are controlled for. These findings suggest that factors beyond education, such as discrimination or unequal access to high-paying jobs, may contribute to the wage gap.

Conclusion Section:

Based on our data analysis, the conclusion we can draw from this report is that White men had the highest wage earnings over the years and Black women had the lowest. Overall, according to our data, it is evident that White people obtain the highest level of education, the second highest being Hispanic people, and the lowest being Black people. This supports our implication, showing that White people have more financial opportunity to further pursue their education compared to those of Black and Hispanic demographics. It also states that there needs to be more emphasis on continuing their education due to limitations from companies, schools, living conditions, etc. This is supported by a recent article that compares the standards of living between college-educated people and non-college grads, “College graduates have double the yearly income, four times the retirement savings, and four times the net worth of working age, non-college Americans.” (Colavito et al., 2023). Some limitations when studying wages by education level across various demographics include outside factors that are not present in the dataset, such as work experience, geographic location, economic conditions, industry sectors, and occupational differences. A way to approach future studies would be to dive deeper and research more on why this wage gap occurs to further support the given data, displaying the various demographic levels of education and building off of the correlations between them.

References:

- Chattopadhyay, S., & Bianchi, E. C. (2021). Does the Black/White Wage Gap Widen During Recessions? *Work and Occupations*, 48(3), 247–284.
<https://doi.org/10.1177/0730888420968148>
- Darity, W., & Wilson, V. (2022, March 25). *Understanding black-white disparities in labor market outcomes requires models that account for persistent discrimination and unequal bargaining power*. Economic Policy Institute.
<https://www.epi.org/unequalpower/publications/understanding-black-white-disparities-in-labor-market-outcomes/#:~:text=Another%20defining%20feature%20of%20racial,%2C%20when%20it%20was%2016.4%25.>
- Dávila, A., & Mora, M. T. (2018, July 2). *The Hispanic–white wage gap has remained wide and relatively steady: Examining Hispanic–white gaps in wages, unemployment, labor force participation, and education by gender, immigrant status, and other subpopulations*. Economic Policy Institute.
<https://www.epi.org/publication/the-hispanic-white-wage-gap-has-remained-wide-and-relatively-steady-examining-hispanic-white-gaps-in-wages-unemployment-labor-force-participation-and-education-by-gender-immigrant/>
- Fan, C. S., Wei, X., & Zhang, J. (2017). Soft skills, hard skills, and the Black/White wage gap. *Economic Inquiry*, 55(2), 1032–1053.
<https://doi.org/10.1111/ecin.12406>
- *The unequal race for good jobs: How whites made outsized gains in education and good jobs compared to blacks and Latinos*. CEW Georgetown. (2020, April 6).
<https://cew.georgetown.edu/cew-reports/raceandgoodjobs/>

- Pew Research Center. (2016, June 27). 1. demographic trends and economic well-being. Pew Research Center's Social & Demographic Trends Project.
<https://www.pewresearch.org/social-trends/2016/06/27/1-demographic-trends-and-economic-well-being/>
- Stephen Miller, C. (2020, August 7). Black workers still earn less than their white counterparts. SHRM.
<https://www.shrm.org/resourcesandtools/hr-topics/compensation/pages/racial-wage-gaps-persistence-poses-challenge.aspx>
- Assari, Shervin, et al. "Black-White Achievement Gap: Role of Race, School Urbanity, and Parental Education." *Pediatric Health, Medicine and Therapeutics*, U.S. National Library of Medicine, 6 Jan. 2021, www.ncbi.nlm.nih.gov/pmc/articles/PMC7797342/.
- Budig, M. J., Lim, M., & Hodges, M. J. (2021). Racial and gender pay disparities: The role of education. *Social Science Research*, 98(102580), 102580.
<https://doi.org/10.1016/j.ssresearch.2021.102580>
- Colavito, A., Kendall, J., & Moller, Z. (2023, May 19). *Worlds Apart: The Non-College Economy – Third Way*. [Www.thirdway.org](http://www.thirdway.org).
<https://www.thirdway.org/report/worlds-apart-the-non-college-economy>