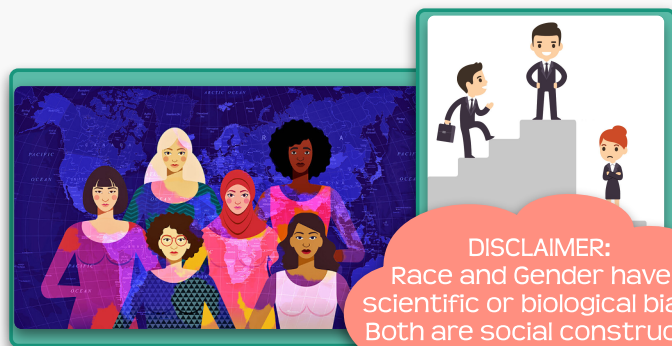


Women in the Workplace

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DISCLAIMER:
Race and Gender have no scientific or biological bias. Both are social constructs with *real* consequences.

STORY

I, myself, am a Women of Color and have experienced discrimination in both education and in the workplace. When I first got into UC Berkeley as a transfer student, several of my friends pointed out, "They only accepted you because you're a girl" or "They probably just need more diversity." As others continued to doubt me and treat me as a statistic, I began to doubt myself too. Small microaggressions often go unnoticed, especially to the person saying them.

After experiencing gender and racial discrimination in several different contexts, I felt inspired to explore how White Women differ from Women of Color in education and in the workplace. The goals of this project is to promote awareness about Women of Color constantly being at a disadvantage throughout life and to inspire global organizations that will help Women of Color reach higher educational levels.

PROJECT DESCRIPTION

From the beginning of time, Women have experienced racism and sexism, especially in education and in the workplace. There's been several efforts to overcome gender discrimination and in this project, I plan to compare the differences in occupation, income, and level of education among White Women and Women of Color. With data from 2000 and 2019, I will analyze how these three factors have changed over time.

QUESTIONS for EDA

- 1) Do more White Women attain a higher level of education than Women of Color?
- 2) Does race attribute to the wage gap among White Women and Women of Color?
- 3) How do occupations differ between races?
- 4) Does level of education influence income? occupation?
- 5) Have level of education, income, and occupation changed since 2000?

INTERPRETATION OF RESULTS

I expect my results to show that there will be more White women with a higher income and a higher level of education than Women of Color. In addition, White Women will have higher paying jobs than Women of Color, such as management positions.

Works Cited

- [1] [Background Information on Gender Wage Gap](#)
- [2] [Data Sets for Personal Income](#)
- [3] [Background Information](#)
- [4] [Data Set for Occupation](#)
- [5] [Women of Color Image](#)
- [6] [Gender Discrimination Image](#)
- [7] [Current Population Survey Article \(2000\)](#)

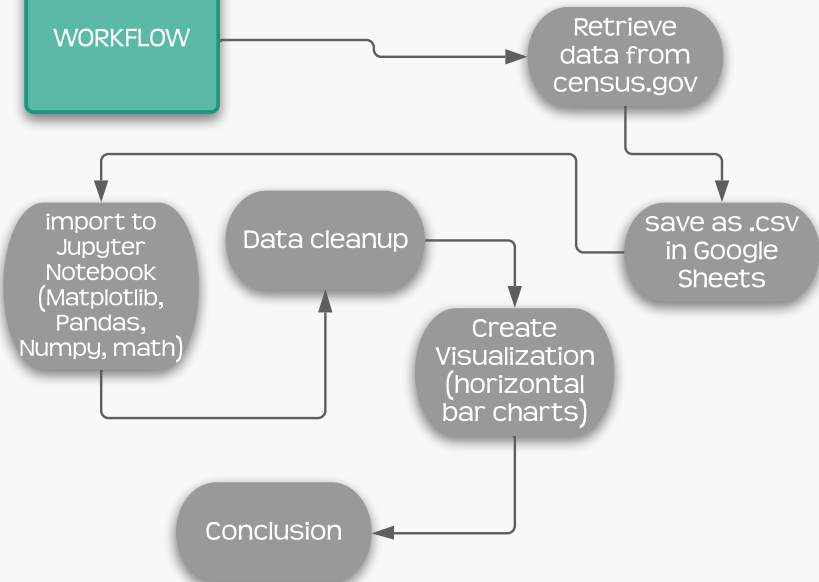
DATASETS

I retrieved all of my data from census.gov which contains statistics on personal income and occupation reported by the Census Population Survey (CPS). The data, collected in 2000 and 2019, are divided by gender, specific age groups, and race. Each dataset contains the number of people in a specific income bracket based on their level of education and statistics on income such as the mean and median. I will be using 4 datasets to compare income and occupational differences based on level of education and race: (1) occupations for White Women (2) occupations for Women of Color (3) income for White Women and (4) income for Women of Color

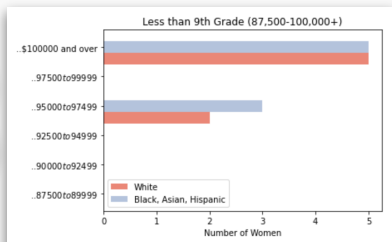
DESCRIPTION OF TOOLS AND METHODS

The data from census.gov are shown on Microsoft Excel. The datasets will be saved as separate .csv files in Google sheets. Each dataset will be imported to Jupyter Notebook where I will clean up the tables using pandas and generate visualizations (such as horizontal bar charts) using matplotlib. Subsequently, I will form an analysis and conclusion.

WORKFLOW

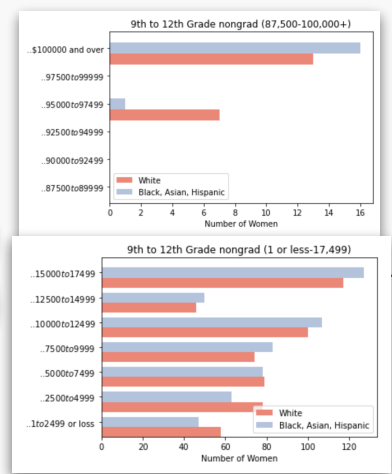


Less than 9th Grade



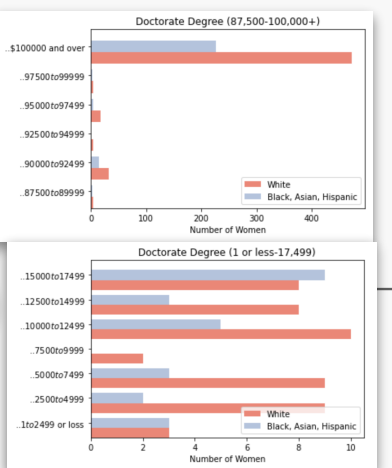
White Women and Women of Color interestingly have the same amount of individuals in the same income bracket, which happens to be the highest income bracket. This is surprising because "Less than 9th Grade" is the *lowest* level of education and the Women at this educational level, regardless of race, have an income of over \$100,000. Could it be said that the lower the educational level, the less likely a Women is to experience racial discrimination?

9th to 12th Grade (Nongrad)



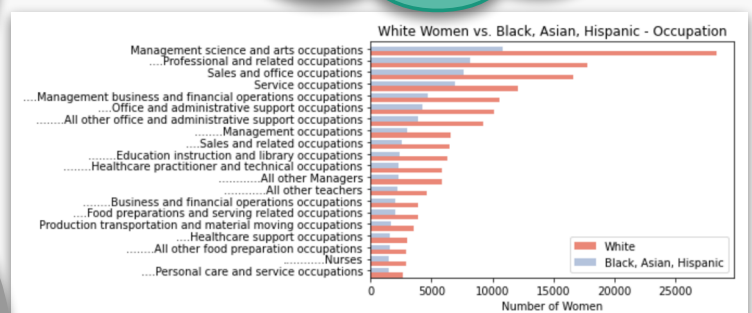
I noticed that White Women have a higher income as the level of education attained increases. However, out of all the educational levels, Women of Color have consistently surpassed White Women in income for the group: "9th to 12th Grade (Nongrad)." Could it be said that White Women typically earn a higher level of education than 9th to 12th Grade (nongrad), so there's not many individuals to report in this category?

Doctorate Degree



A doctorate degree is the highest educational level a person could achieve. In this group, the amount of White Women have surpassed Women of Color in most of the income brackets. It's important to note that although Women of Color have achieved the same highest educational level as White Women, there are still more White Women in this category altogether. Another thing to note is the number of Women in top bar chart, which is represented by the x-axis; the number of White Women is more than *double* the amount of Women of Color that earn over \$100,000.

Black, Asian, Hispanic Women vs. White Women - Occupations



This horizontal bar chart represents the top 20 occupations that employed the most Women; in this case, White Women and Women of Color have almost identical occupational categories.

It's important to highlight that most White Women and Women of Color are employed under "Management science and arts." However, this occupational category has almost *triple* the amount of White Women than Women of Color. Similarly, each category in the bar chart which is represented by the y-axis shows that the number of White Women supersede Women of Color, indicating that there are generally more White Women in the workforce.

PROJECT LINKS

[Jupyter Notebook](#)
[Github](#)
[Google Slides](#)

DATA ANALYSIS

After generating the horizontal bar charts for each educational level, it is clear that White Women typically earn a higher income than Women of Color (Black, Asian, Hispanic). Women of Color are also more likely to have service jobs (jobs that serve others, such as: restaurant and food industry, personal care workers, etc.), whereas more White Women hold positions in higher management or business. In addition, there are evidently more White Women in the workforce than there are Women of Color. The results of this project show that Women of Color are at a severe disadvantage in education and the workplace. By seeing where there are less Women of Color in a specific educational level, we can create global organizations that encourage and fund Women of Color so they can achieve a higher degree in the future. This project spreads awareness about how racial and sexual discrimination puts Women of Color lower on the social hierarchy; hopefully attention to these results will spark organizations that will promote equality for all Women around the world.

Comparing 1999/2000 to 2019 Datasets

Table 4. **Median 1999 Earnings of Men and Women and Women's Earnings as a Percentage of Men's Earnings by Selected Occupation Groups for the United States: 2000**
(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see [www.census.gov/prod/cen2000/doc/s3.pdf](#))

Occupational groups	Men	Women	
	Median earnings	Median earnings	Percent of men's earnings
Management, professional, and related occupations.....	\$50,034	\$35,654	71.3
Service occupations.....	\$26,000	\$17,805	68.5
Sales and office occupations.....	\$20,000	\$15,996	80.0
Farming, fishing, and forestry occupations.....	\$20,000	\$29,000	90.6
Construction, extraction, and maintenance occupations.....	\$30,992	\$20,850	67.3
Production, transportation, and material moving occupations.....			

This table published by the US Census Bureau in 2000 shows Men and Women's income for certain occupational categories. The rightmost column shows that Women were earning a small percentage of Men's income within the *same* category. This table emphasizes the gender discrimination that Women endured back then.

Table 3. **The Ten Occupations¹ Employing the Most Women for the United States: 2000**
(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see [www.census.gov/prod/cen2000/doc/s3.pdf](#))

Occupations	Number	Percent
Employed civilian females 16 years and over	60,830,069	100.0
Secretaries and administrative assistants.....	3,597,535	5.9
Elementary and middle school teachers.....	2,442,104	4.0
Registered nurses.....	2,065,238	3.4
Cashiers.....	2,030,805	3.3
Retail salespersons.....	1,775,889	2.9
Bookkeeping, accounting, and auditing clerks.....	1,526,803	2.5
Nursing, psychiatric, and home health aides.....	1,469,736	2.4
Customer service representatives.....	1,396,105	2.3
Child care workers.....	1,253,306	2.1
Waiters and waitresses.....	1,228,977	2.0

Also published by the US Census Bureau, this table presents the top 10 jobs that employed the most Women. The biggest takeaway from this table is that all of these jobs are service occupations; their sole purpose is to serve others. Contrastly, the most employed occupational group for Women in 2019 is management science and arts, which is *significantly* different than the jobs listed in this table.

IN CONCLUSION...

Based on the occupations listed in the table from 2000, there's evidently been progress to overcome the gender and racial discrimination that Women have faced since the beginning of time. More specifically, the amount of Women in managerial positions are still increasing, hooray! While there's still a long way to go, we can fully overcome gender and racial discrimination for Women and Women of Color, but we will need *everyone's* help.