
Analyses of Census Data Against Socioeconomic Factors and Household Dynamics

Project 1 - Team Alpha

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Analysis of Census Data By Demographics and Socioeconomics

Key Objective: To dig into how demographic and socioeconomic factors—like race, household size, education, and region—interact and vary, especially when it comes to their impact on employment and socioeconomic gaps.

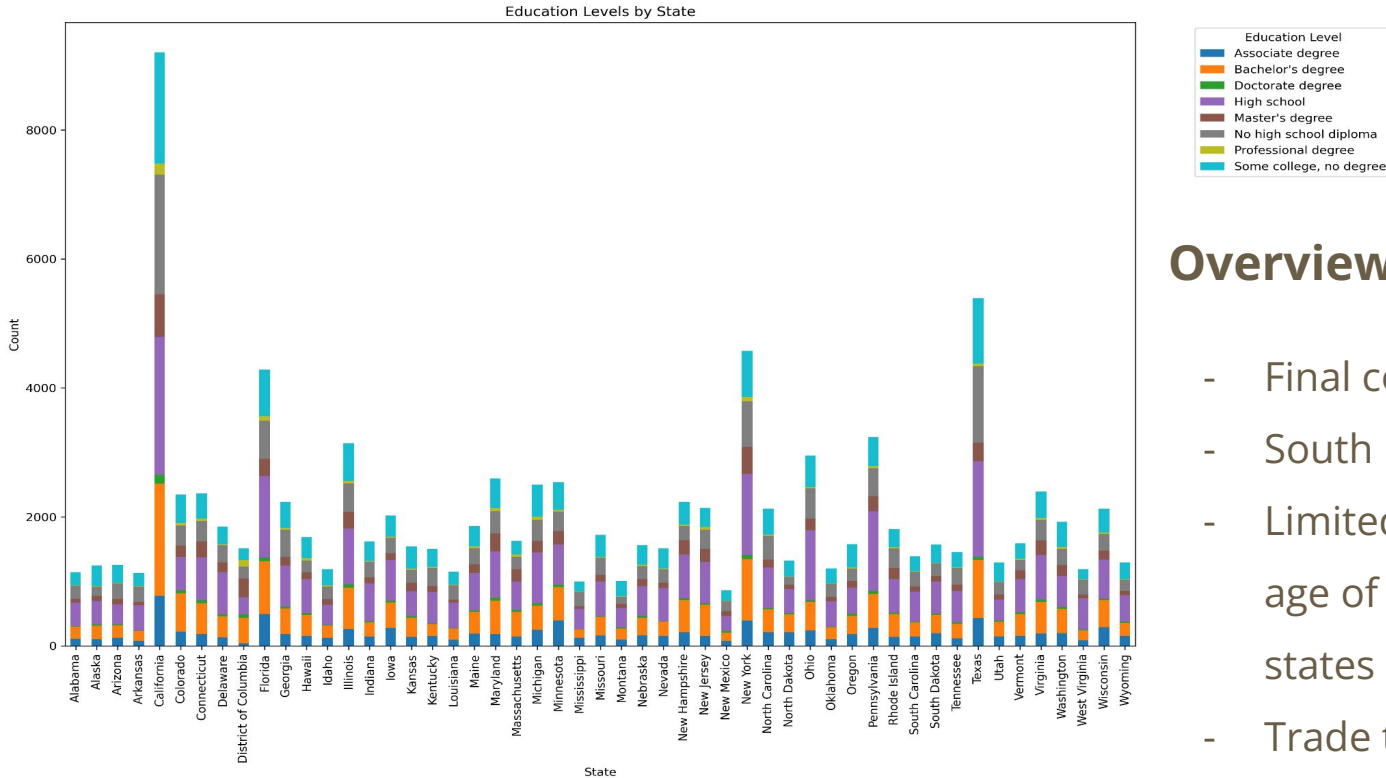
Data Set

Too big, too much, just right

Initial data scrubbing focused on work from home based on data from several national level surveys

Transitioned to using a simpler dataset from the 2013 Census which we compare to more recent data via an API

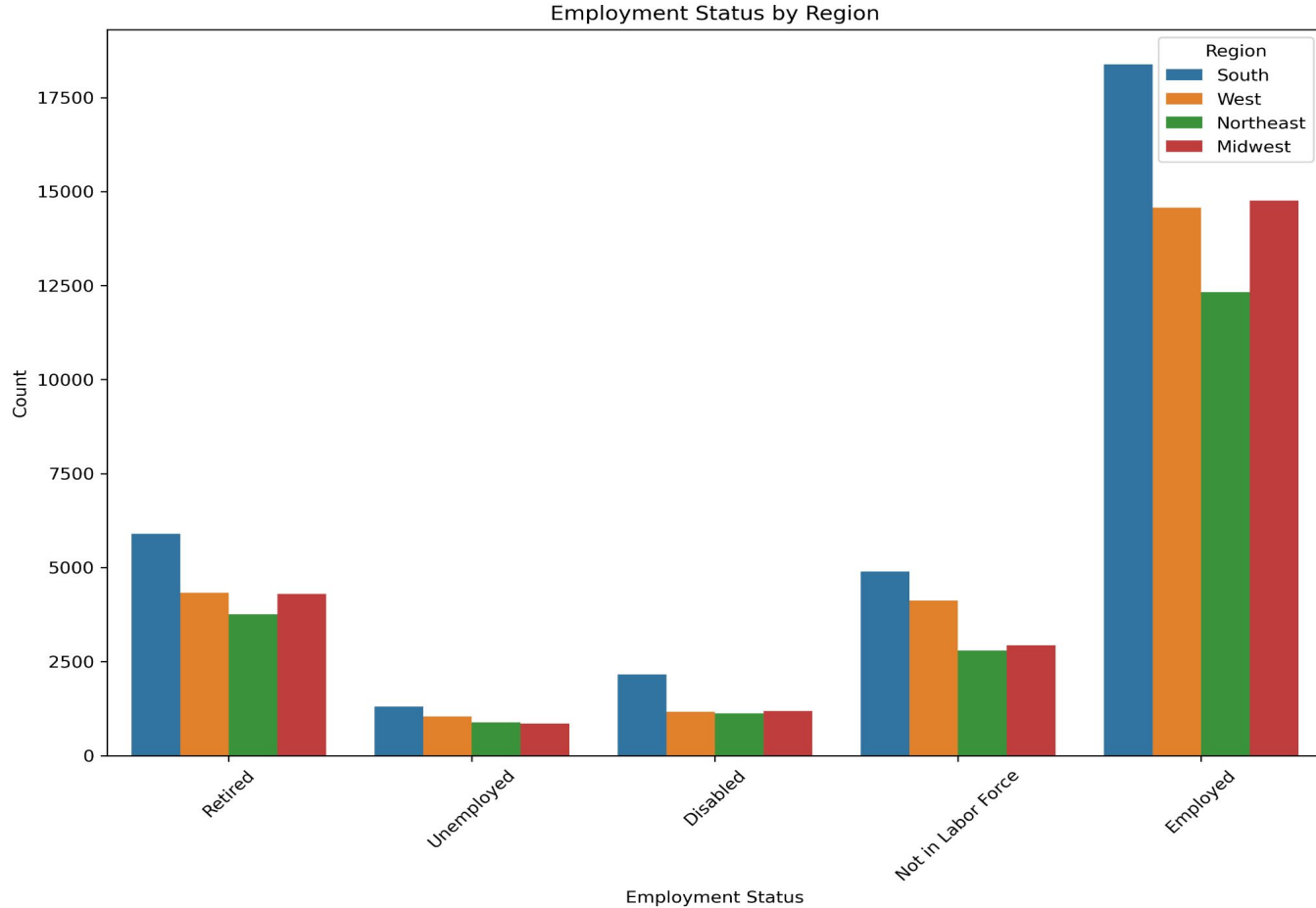
Demographic and Regional Insights



Overview of Data:

- Final cohort: 131,302 surveys
- South is overrepresented
- Limited age to 15+, as that is the age of legal employment in some states
- Trade training note represented

Demographic and Regional Insights



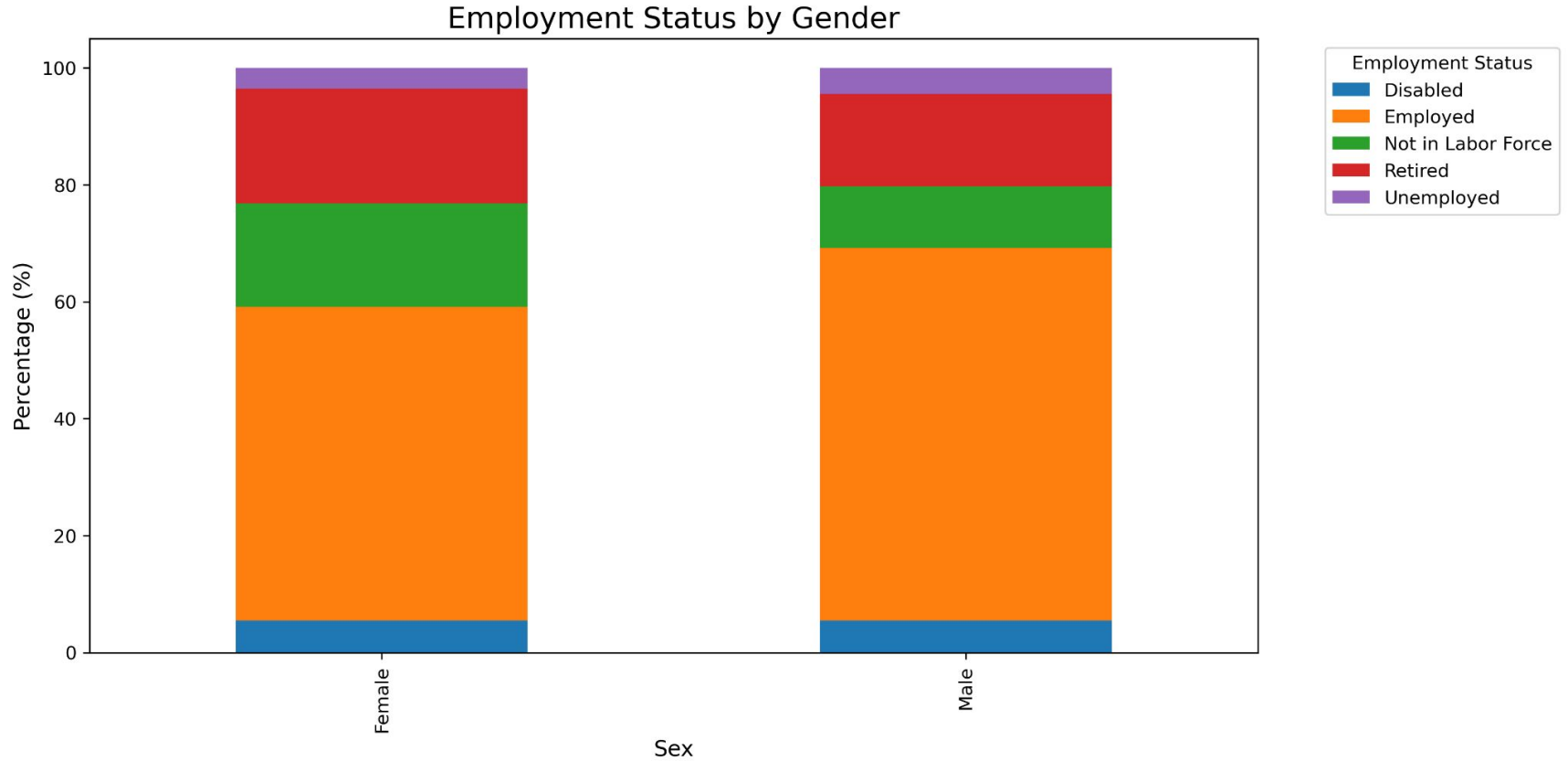
Employment Status Trends

An analysis of how employment status varies across groups

Employment patterns reveal clear differences based on gender, age, and employment status, often highlighting systemic barriers and disparities.

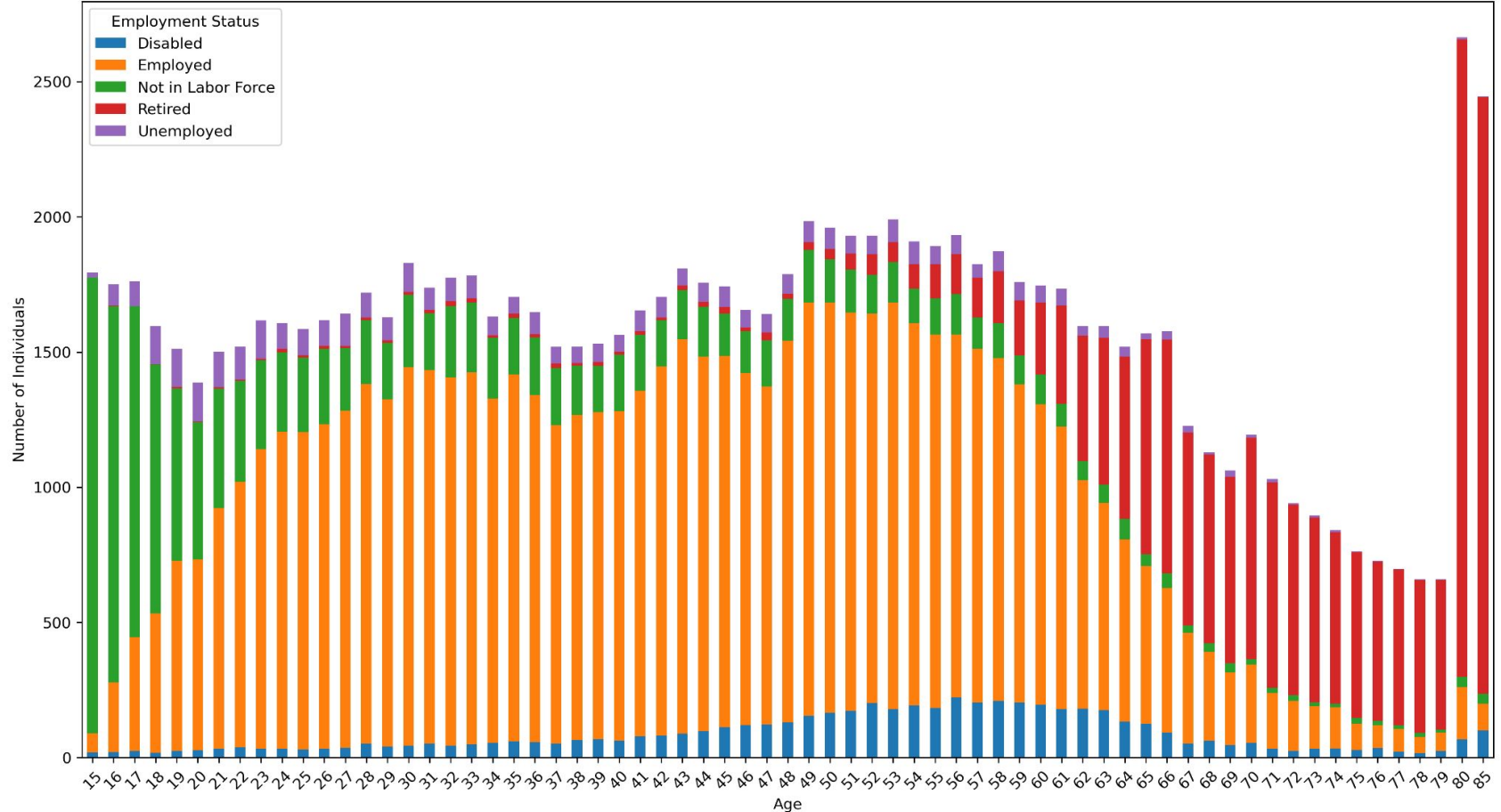
For example, men tend to have higher employment rates than women in many fields, while younger workers, despite higher education levels, often struggle to secure stable jobs.

Employment Status Trends

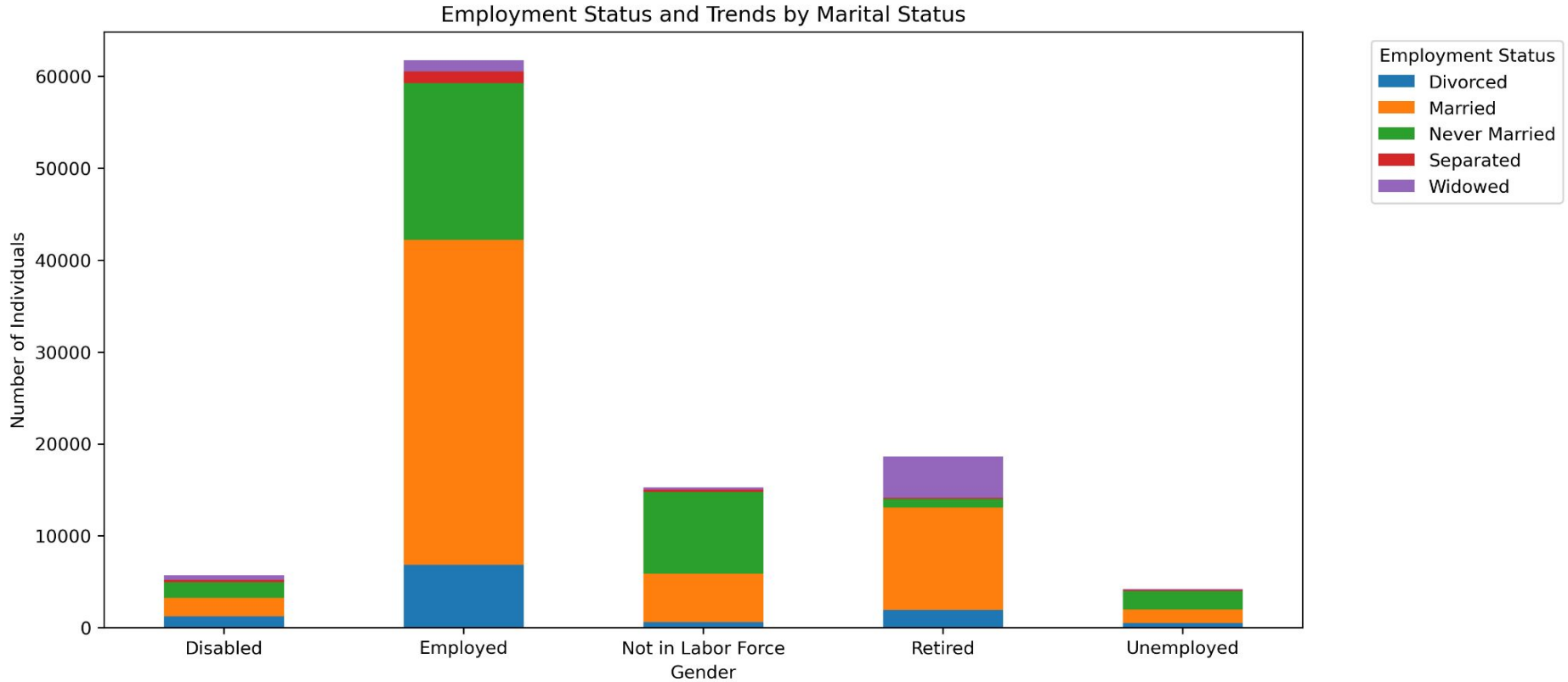


Employment Status Trends

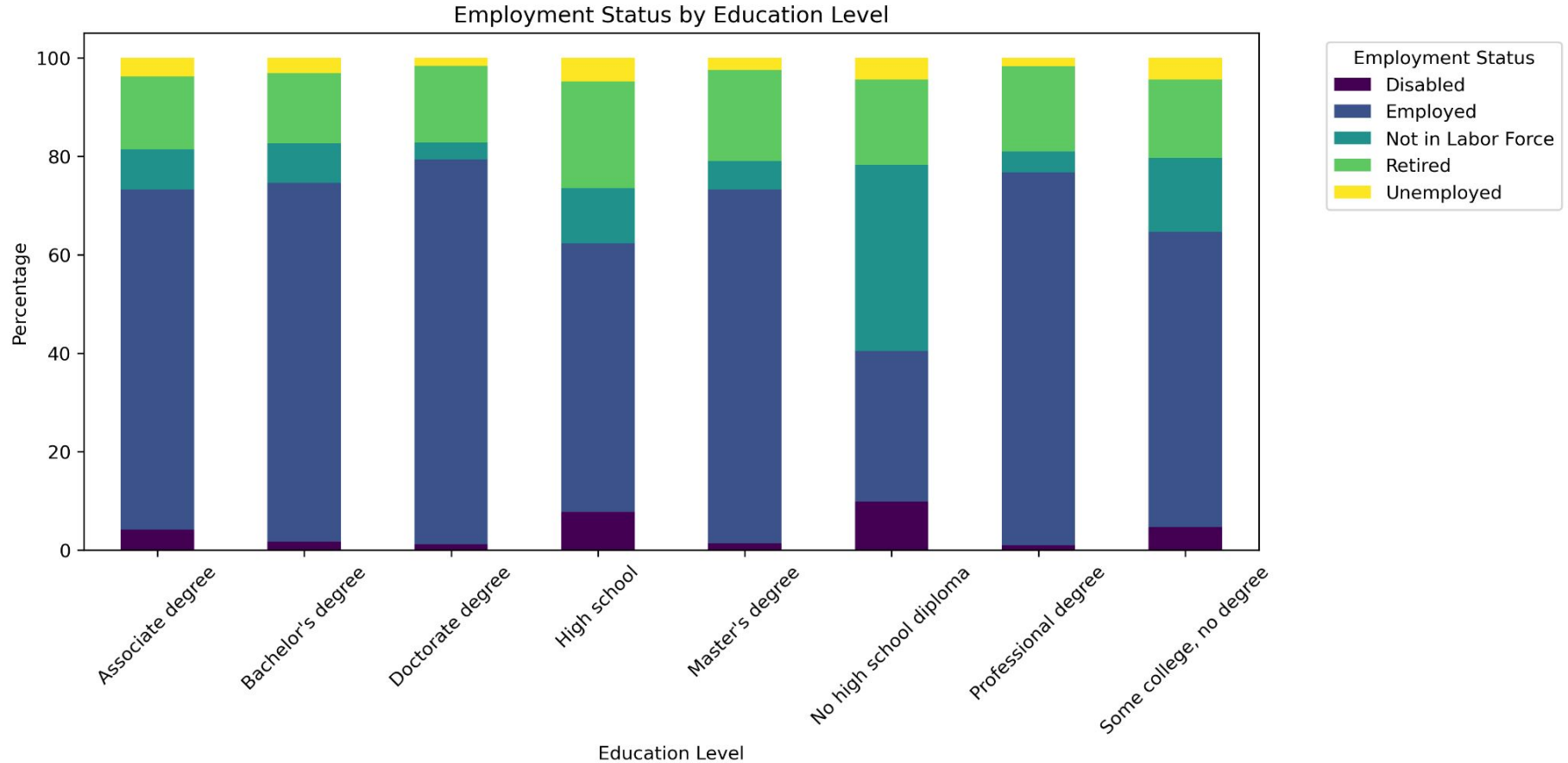
Employment Status and Trends Across Age Groups



Employment Status Trends



Employment Status Trends



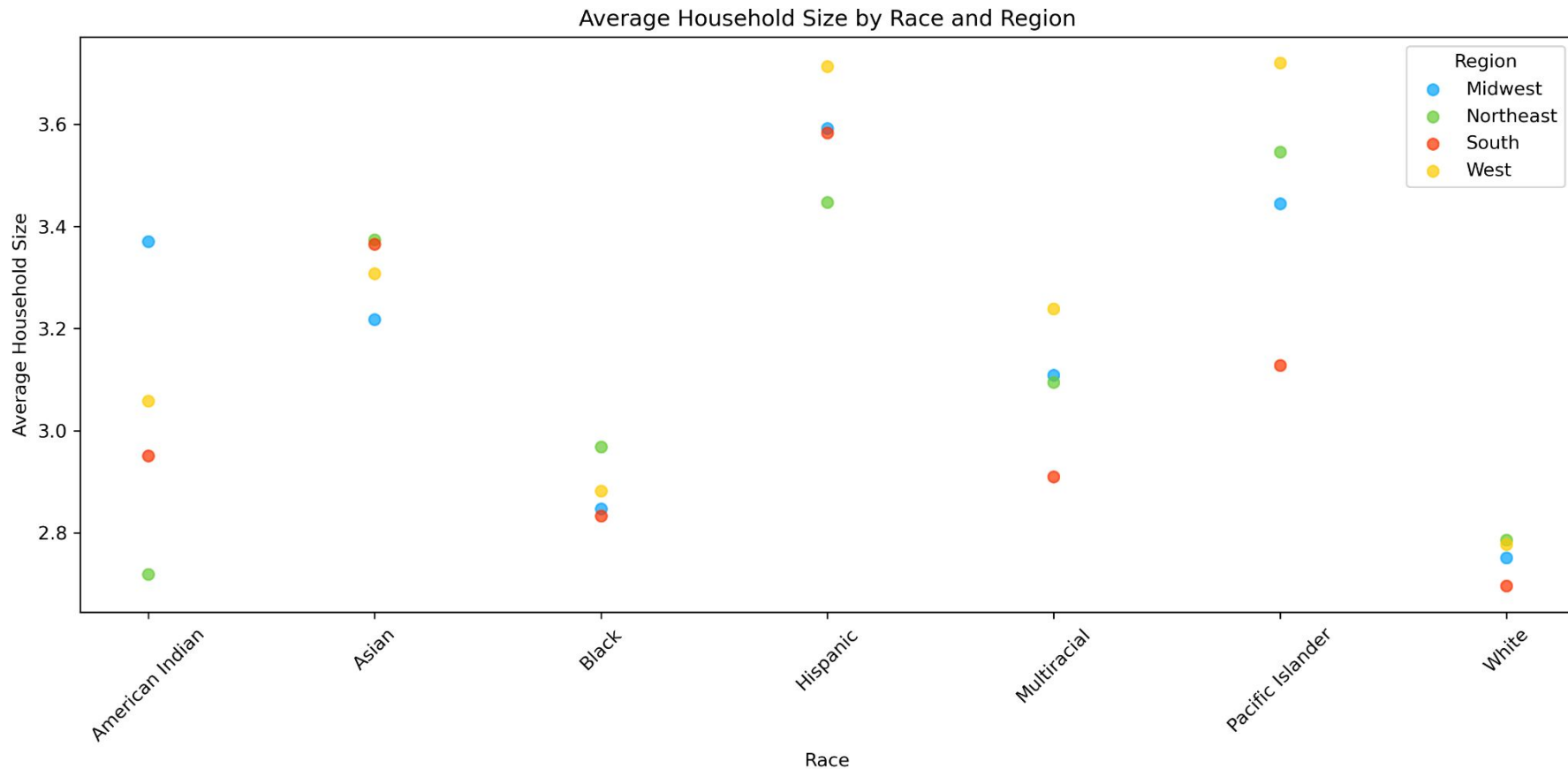
Socioeconomic Factors and Household Dynamics

An analysis of how a household size can correlate to socioeconomic demographics

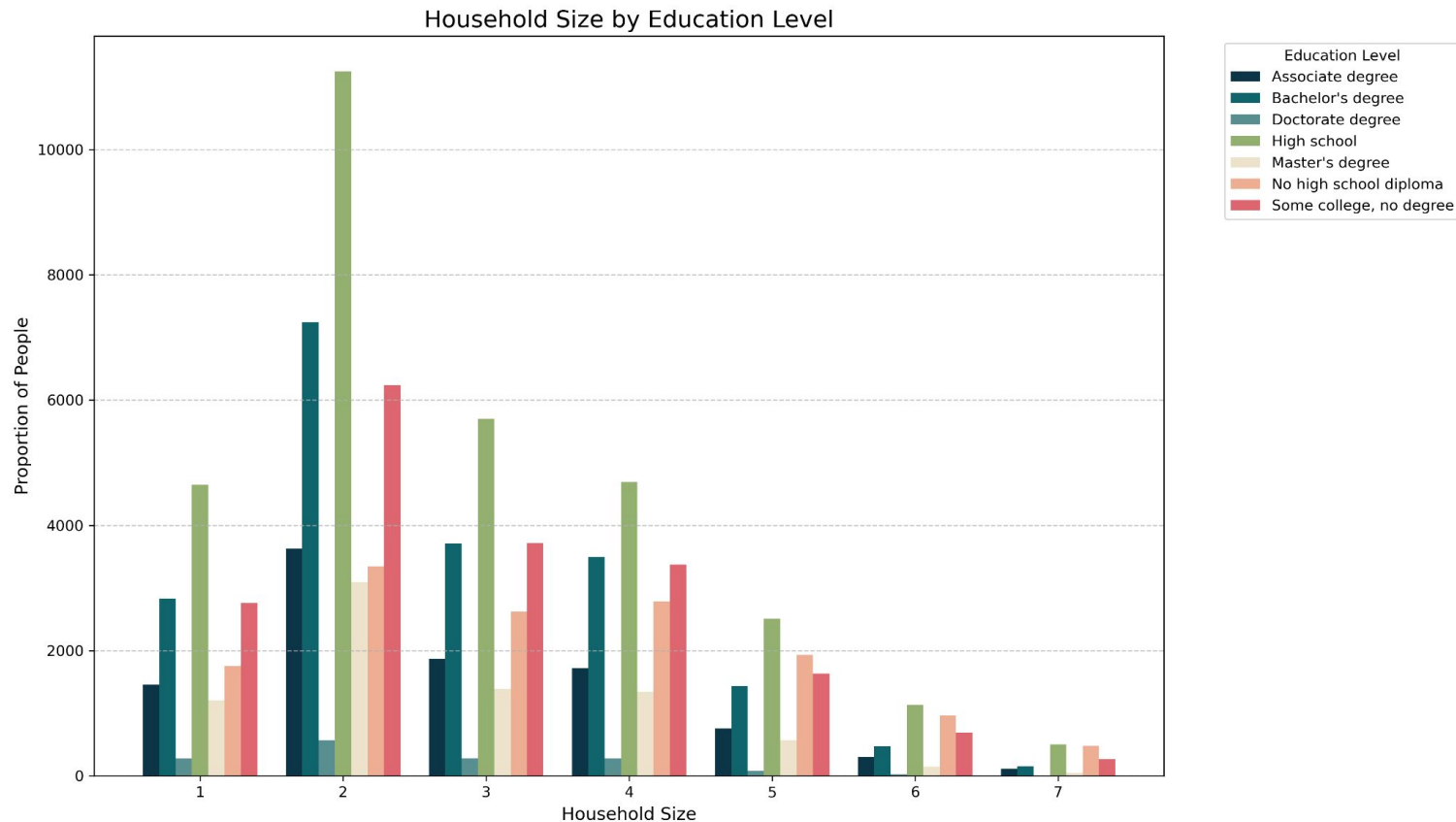
The relationship between household size and education highlights how higher educational attainment can correlate with smaller household structures, reflecting broader socioeconomic trends.

Household size shifts a lot across racial groups and regions, showing how culture and regional economics play a big role in shaping who lives together and how resources are shared.

Socioeconomic Factors and Household Dynamics



Socioeconomic Factors and Household Dynamics



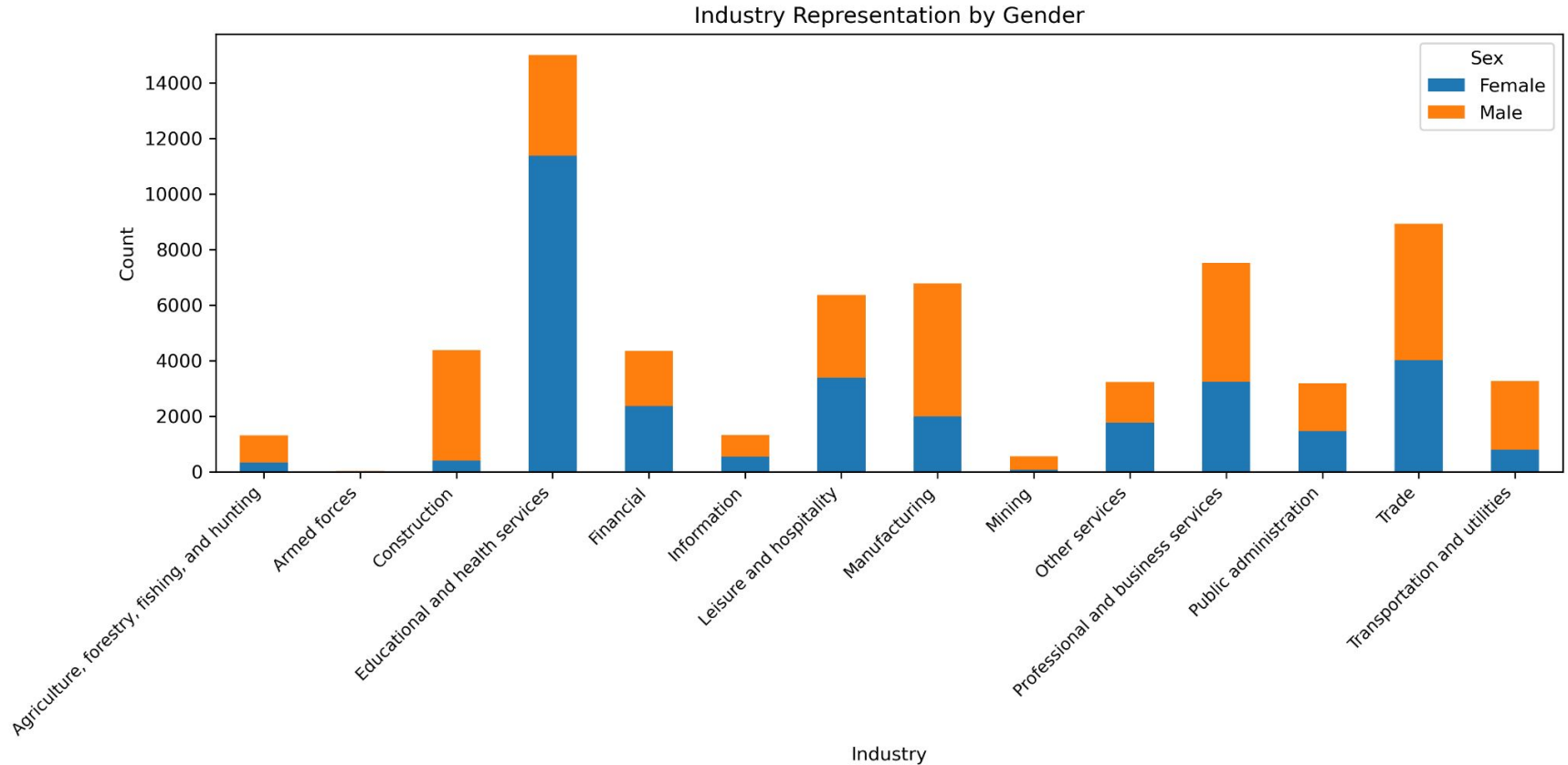
Industry Representation and Employment

An analysis of how different groups are represented and employed across industries

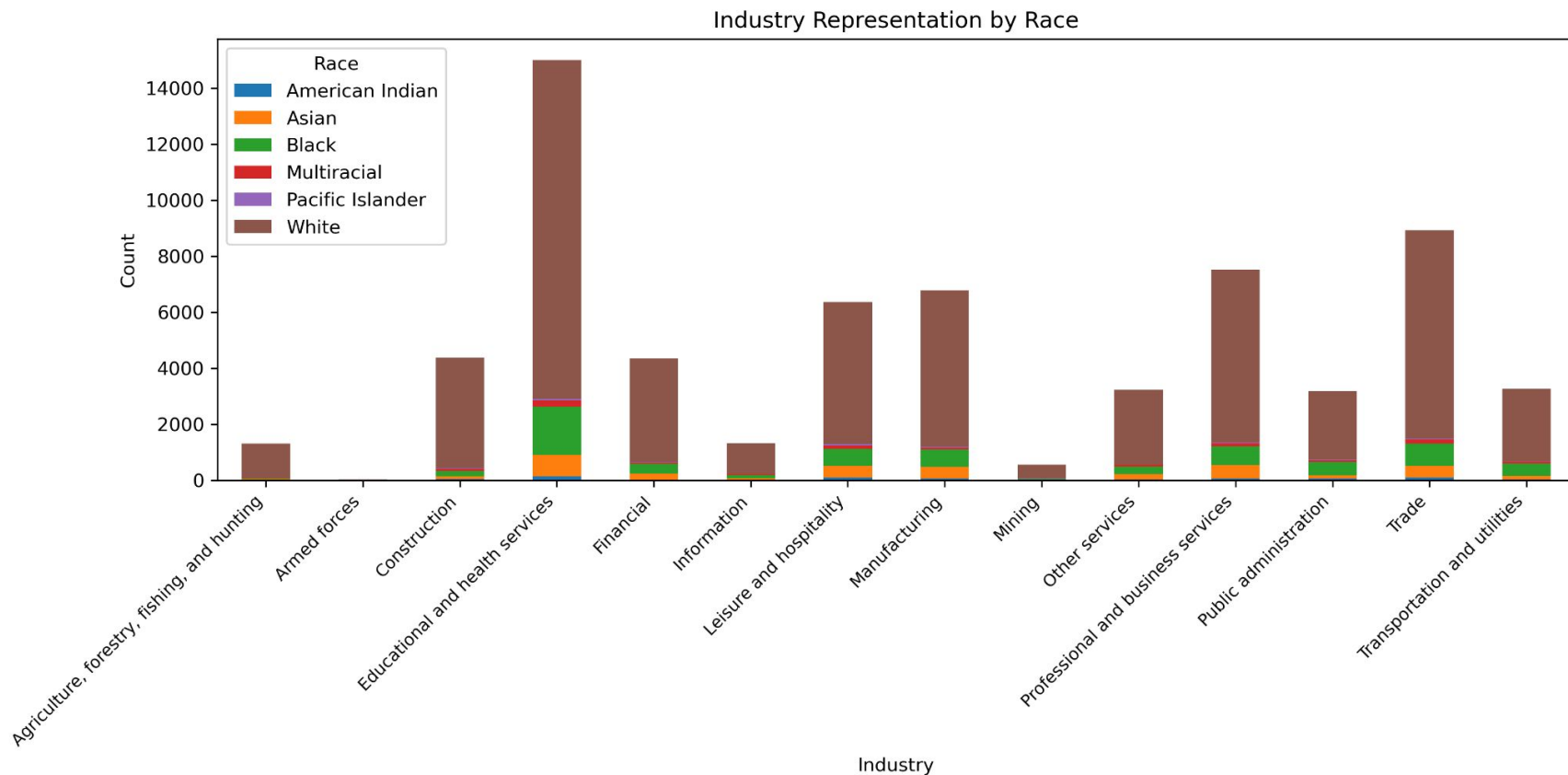
Employment across industries reveals significant disparities among demographic groups, with certain sectors dominated by specific populations while others remain underrepresented.

Analyzing how different groups are represented across industries helps us understand workforce disparities and identify underrepresented populations. This insight is key to creating targeted strategies for equitable access and inclusion in various sectors.

Industry Representation and Employment



Industry Representation and Employment



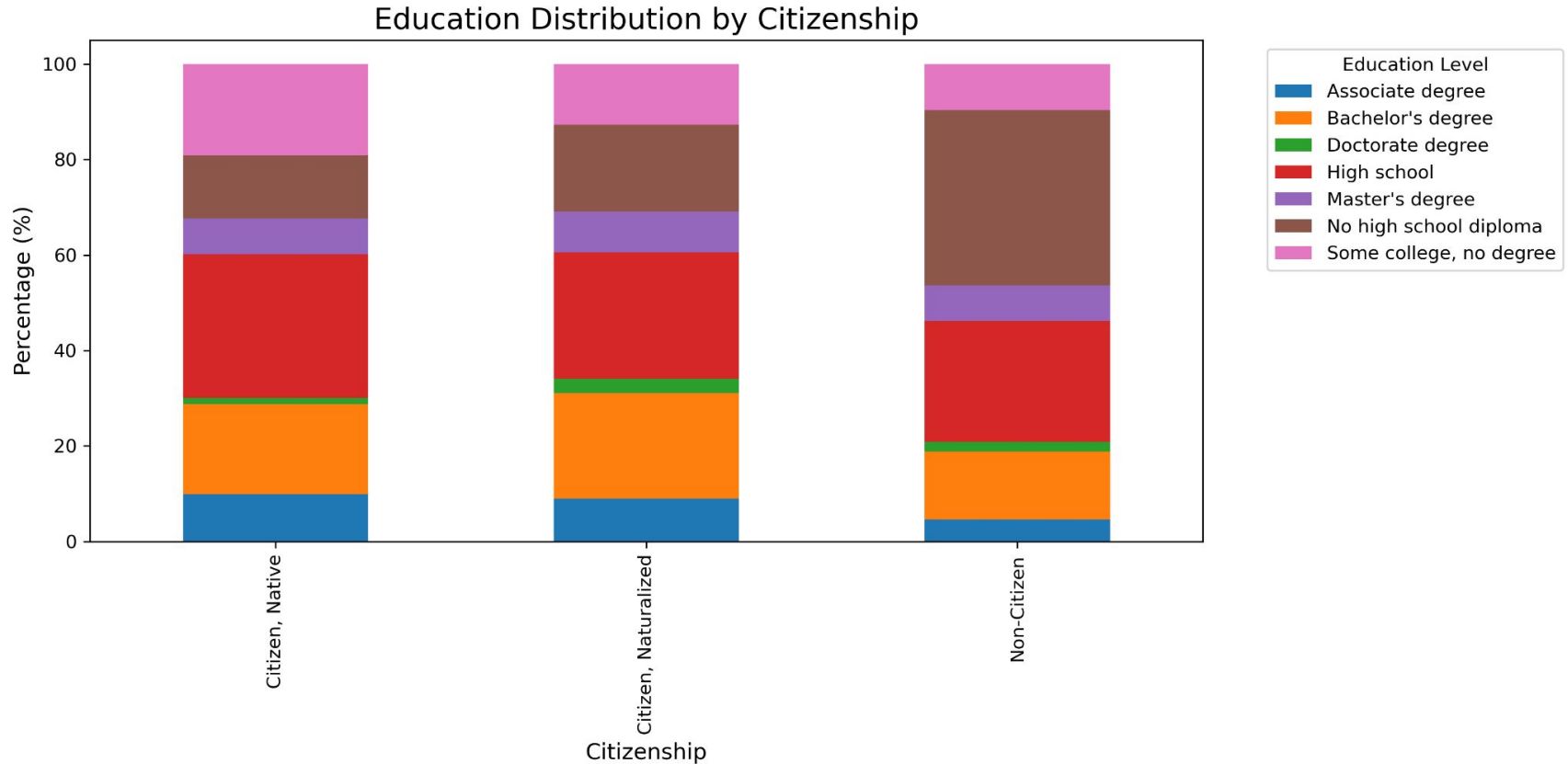
Barriers and Opportunities

An analysis of Demographic Patterns in Education and Workforce Representation

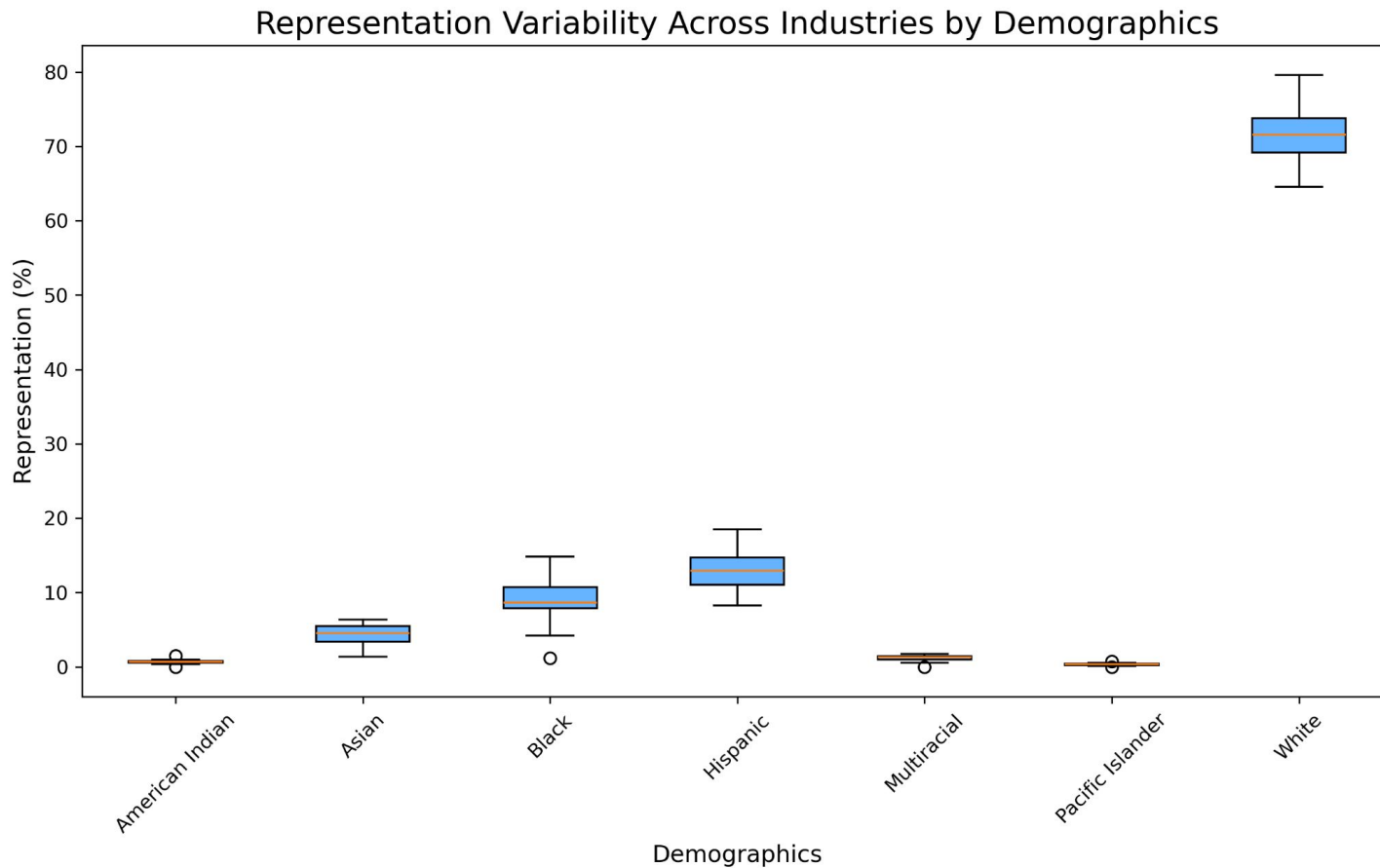
Education across different citizenship statuses, highlighting variations in educational attainment.

Demographic differences in workforce representation across industries, highlighting diversity, inclusion, and disparities in employment distribution.

Barriers and Opportunities



Barriers and Opportunities

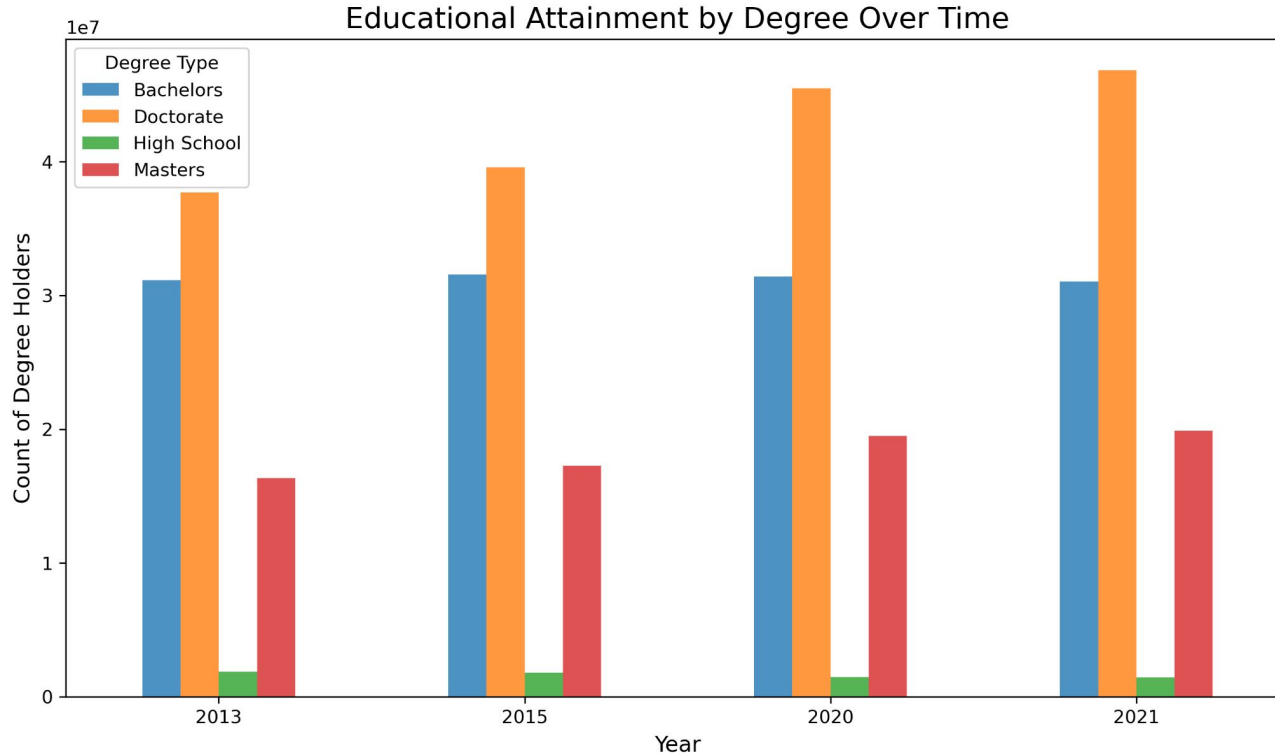


API

Using the API from Census.gov, data from various census years was pulled to analyze education trends across multiple years.

Analyzing data from past censuses provided insights into educational attainment trends over time. The focus was on how High School, Bachelor's, Master's, and Doctorate degrees measured during significant periods, including the industry-specific downturn in 2015 and the pandemic and post-pandemic years of 2020–2021.

API Database - Educational Attainment Over Time



Conclusions

- A gap of up to 15% between male and female employment rates in several industries.
- For younger workers, a comparison of education levels versus employment showed only 60% were able to secure stable jobs despite higher qualifications
- Correlation analysis showed a negative relationship between education levels and household size.
- An average household size of 2.8 for individuals with a bachelor's degree or higher, compared to 4.2 for those with only a high school diploma.
- Women constituted only 24% of technology-sector jobs, while making up 72% of healthcare roles.
- Certain racial groups showed underrepresentation in leadership positions across various industries
- Minorities and those who identify as female are underrepresented across most industries
- Increase in higher education over time for both Master's and Doctorate degrees

Lessons Learned & Further Analysis That Can Be Made

- Add more robust data set to complement this primarily basic data set
- How do these employment trends continue into 2024?
 - Note: Census does not populate until the year after
- Compare median income to these demographic factors and compare against:
 - Industry
 - Residential zip code
 - Gender
 - Education
- Let the data tell the story instead of making it fit