

DEMOGRAPHIC AND CHARACTERISTICS OF PERSONS IN OR AT RISK OF POVERTY IN THE U.S

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Introduction

The US Census Bureau considers persons earning less than \$33,148/year as being in poverty.

The dataset used for this project contains data of people earning below <=\$50k/year and >50k/year. Persons earning <=\$50k/year are at risk or already in poverty.

The goal of the project is to find out the traits of a community who are in poverty or at risk of poverty. For this, it is essential to determine the influence of certain factors, such as age, sex, education level, etc., on the salary of an individual in the USA.

Government agencies can use the inferences from the project to formulate policies to improve the lives of this segment of persons experiencing poverty or at risk of poverty.

Materials and Methods

The dataset for this project was chosen from the open-source UC Irvine Machine Learning Repository and contained 48,842 rows of census data, including information about the per annum salary of the individual, which can be >\$50k or <=\$50k

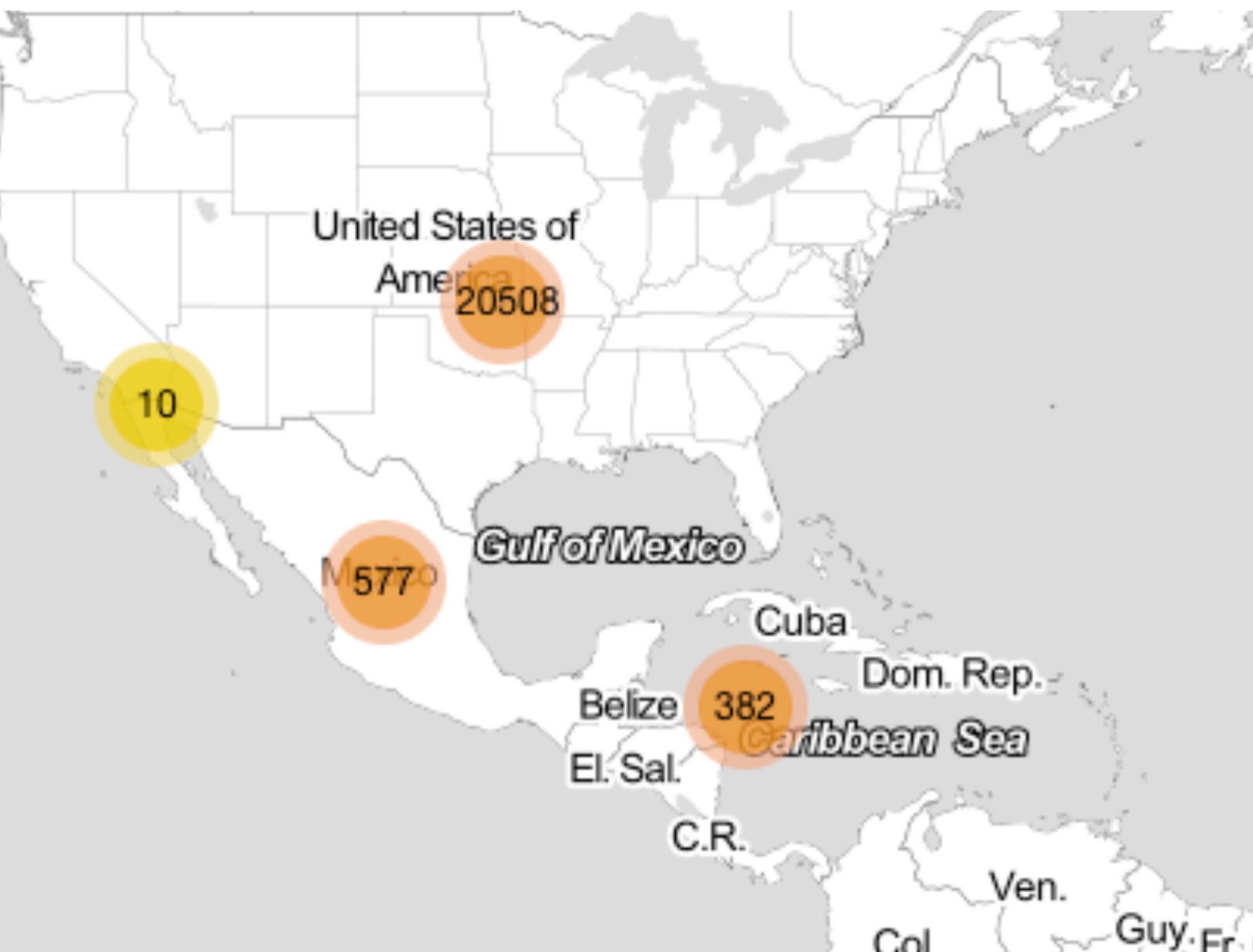
The Extraction of this data was done initially by Barry Becker from the 1994 Census database.

The analysis of this data was done using R programming on the R Studio Desktop IDE

Data Analysis

1. First, the nature of the data was understood. The meaning of column names and their corresponding data types were uncovered
2. Dataset was cleaned, and any rows with Null/NA values were removed. Columns were renamed correctly, and columns which are unnecessary for the analysis were deleted
3. Since the salary of <=50K/year salary of the individual is dependent on multiple characteristics, analysis was done to drill down and find the characteristics of this exact population

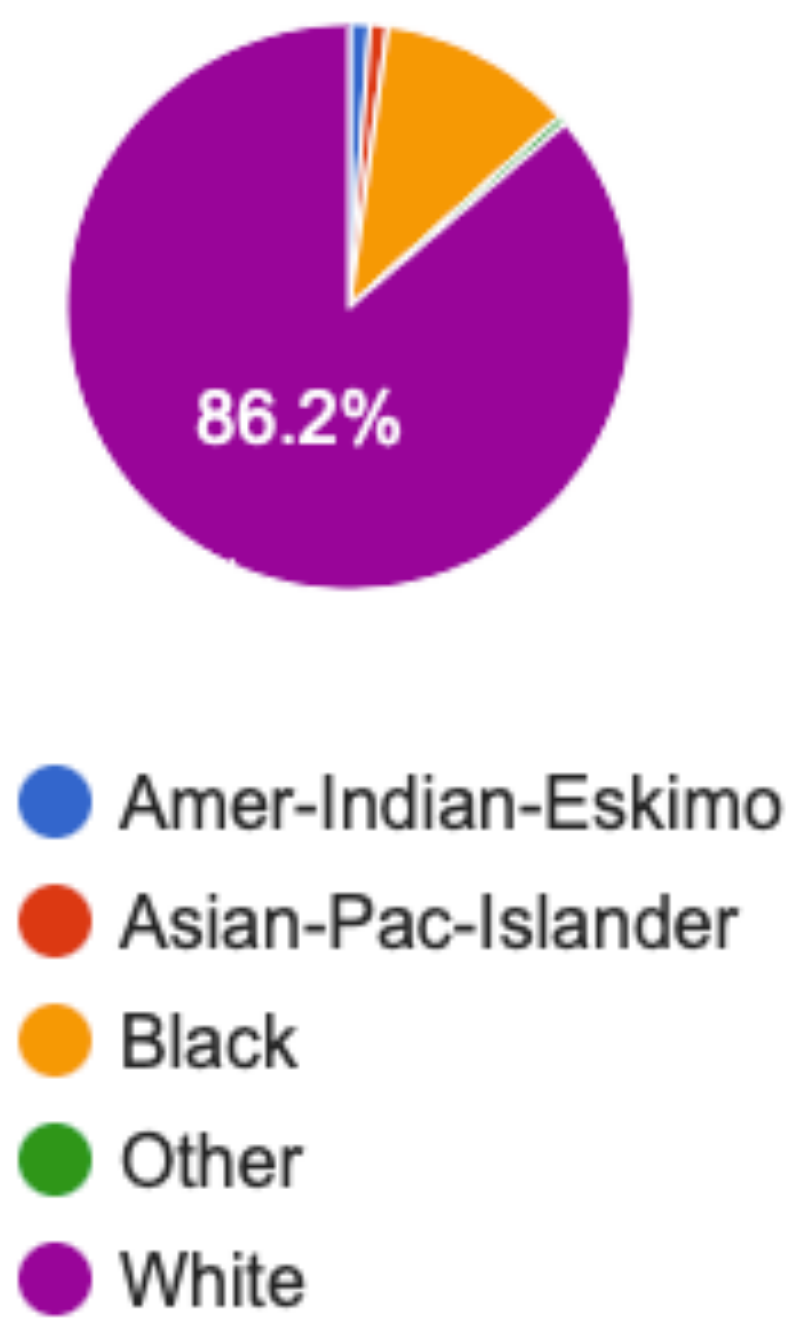
(A)



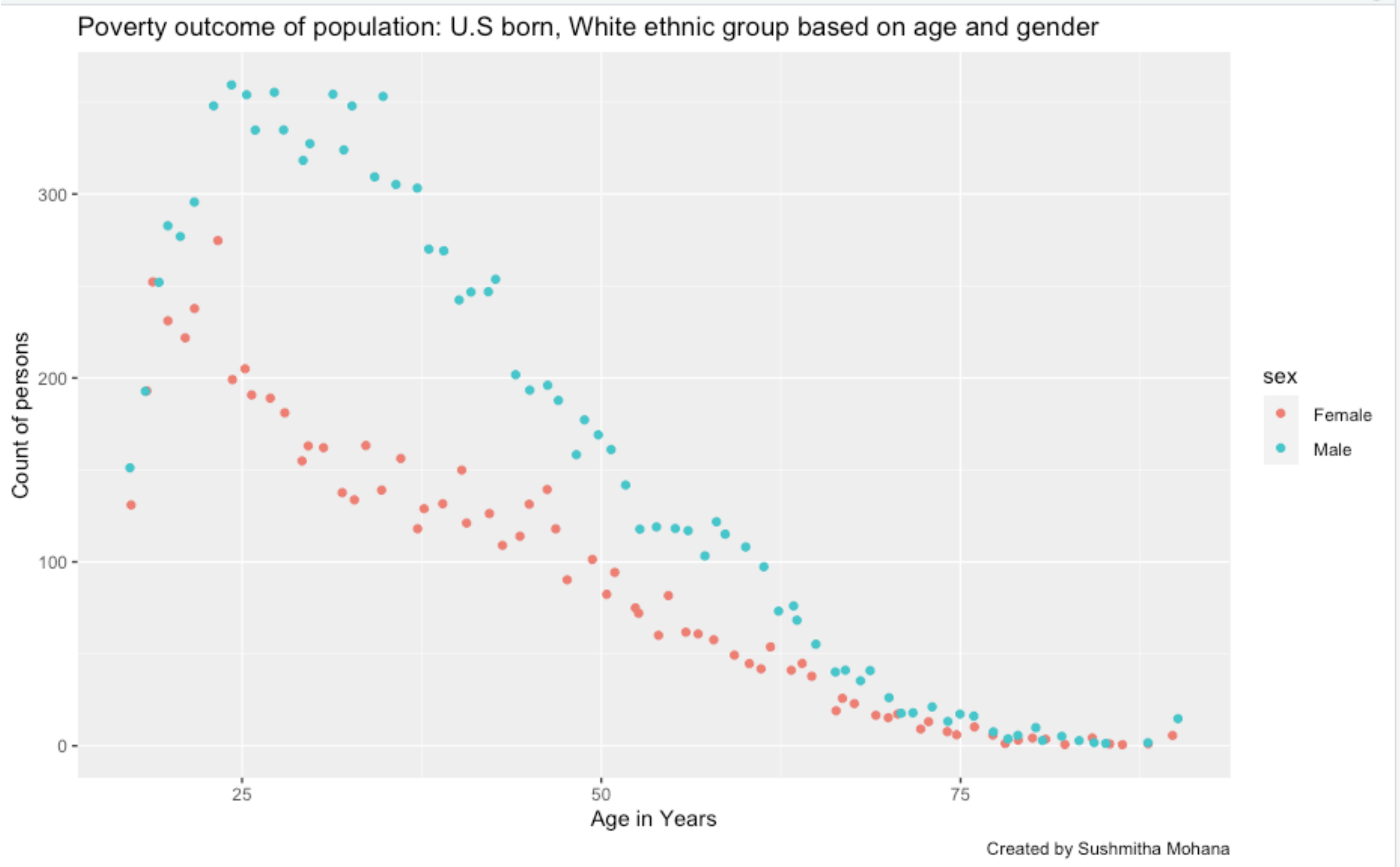
Filtering out persons from the United States earning <=\$50K yielded a dataset where we could examine the ethnicity of this segment of the population. As shown in (B), most persons are from the **White** Ethnic group.

It is to be noted that a person can have an ethnicity that is unrelated to his place of birth.

(B)



(C)



From the population Identified in (B), I tried to identify a correlation between a person's age and sex on their salary. It can be seen in (C) that:

Count of persons in poverty or at risk of poverty decreases with age, irrespective of gender.

White U.S born **Men** are more prone to poverty/ risk of poverty than Women of the same age, irrespective of age range

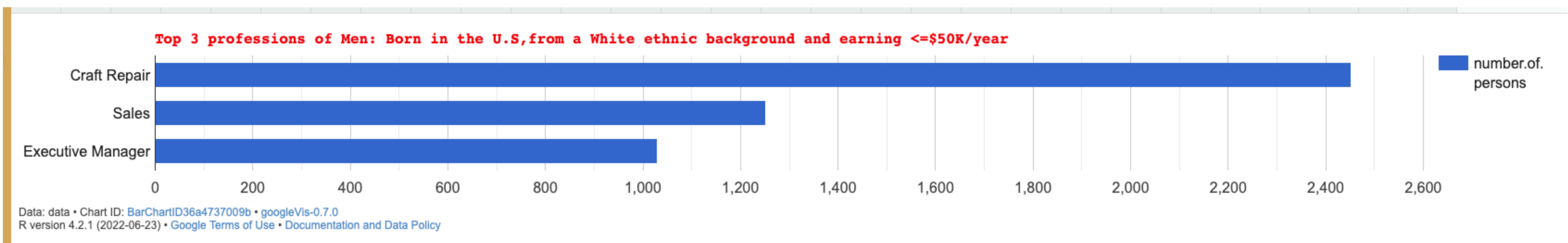
The population identified in (C) is further drilled down to identify the correlation between the profession and the salary of a person, as shown in (D).

It was found that the count of Men in Craft Repair, Sales, and Managerial executive occupations was the highest in this population.

It is uncanny that Executive managers are in the top 3 of this list because the salary range for Higher Executive Manager positions is ~75K/year and upwards[1]. Lower lever Executive managers make <50K/year. We do not have enough information from the data to decide to which Level these Executive Managers belong. The same applies to Sales professionals as well.

Therefore we can exclude occupation while understanding the features of the population segment

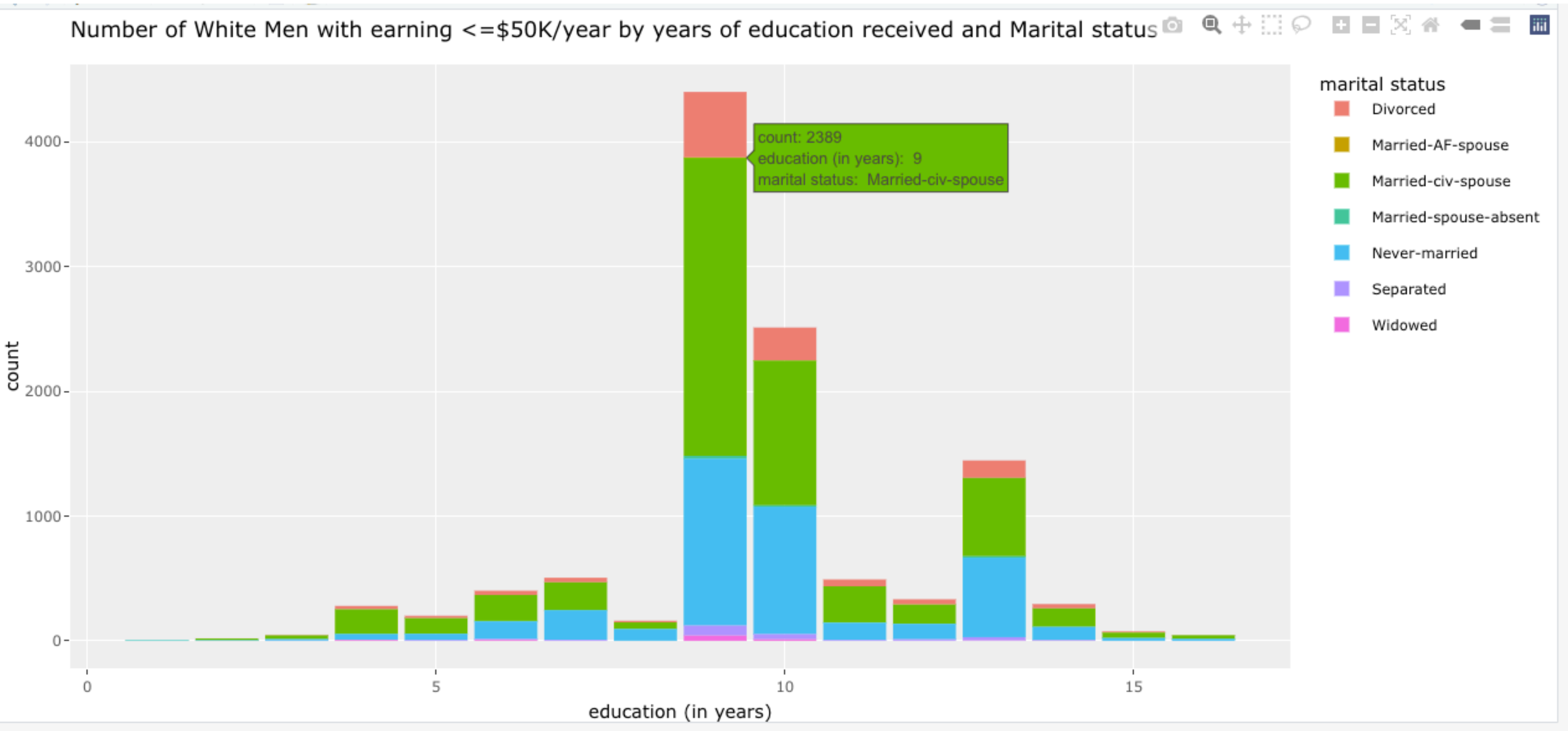
D



Next, the impact of marital status and the number of years of education was found on the person's salary.

It was observed, as shown in (F), that U.S born white men possessing between 5-10 years of formal education, excluding preschool to grade 3 and repetition of a grade, and who are married to a Civilian spouse are at the highest risk of being in / are already in poverty. This concludes that U.S born White men, whose maximum education level is a High School diploma and who is married to a Civilian Spouse, are at the highest risk of being in /already in poverty

F



Results

This project concludes that U.S born White men, whose maximum education level is a High School diploma and who are married to a Civilian Spouse, are at the highest risk of being in /already in poverty

Conclusion

Drawing lessons from the inferences of this project. The government of the United States should focus on:

1. Educational Initiatives to boost the White Male population to pursue a college education
2. Design Schemes to benefit Men with civilian spouses especially for White Men

Future Work

- 1.The income of families worldwide can be examined to get an idea about the characteristics of low-income families irrespective of nationality.
2. In this way a holistic method can be devised to mitigate poverty across the world
- 3.Identify Sates in the US with the demographic and characteristics identified by this project

References

1] https://www.glassdoor.com/Salaries/executive-manager-salary-SRCH_KO0,17.htm