1. Introduction Most states in the USA provide services and support to individuals with developmental disabilities (e.g., intellectual disability, cerebral palsy, autism, etc.) and their families. Imagine you are working for the Georgia Department of Behavioral Health and Developmental Disabilities.

Your task is to analyze the provided dataset and determine whether there is evidence of discrimination in the allocation of expenditures to Hispanic and White non-Hispanic consumers.

2. Data Preprocessing Familiarize yourself with the dataset dat.csv before proceeding with the analysis. Then start with introducing a new categorical variable, “Age Cohort”, using the following six groups:

• 0–5 years • 6–12 years • 13–17 years • 18–21 years • 22–50 years • 51+ years

3. Analysis and Research Questions Your analysis should address the following key questions:

**A. Data Quality:**

• Are there any missing or erroneous values in the dataset? Action: Remove all rows with missing or erroneous values. How many rows did your delete?

• Are there any outliers in the expenditure data? (Assess using the interquartile range). Action: Exclude all such rows from further consideration. How many rows did your delete?

**B. Expenditure Analysis:**

• Compute the average expenditure for the following groups:

– All males – All Hispanics – All White non-Hispanic males

• Determine the median annual expenditure for each age cohort.

• Identify which gender has the highest average annual expenditure and calculate the expenditure difference between males and females.

• Calculate the total annual expenditures for each ethnic group.

**C. Demographic Analysis:**

• Identify the ethnic group with the highest number of consumers in the 22–50-year age cohort.

• Determine the most populous age cohort for each gender.

**D. Main Question:** Is There Discrimination/Bias?

• What percentage of all customers are Hispanic and White non-Hispanic?

• Compare expenditures between Hispanic and White non-Hispanic consumers in total and across different age cohorts.

• Assess if there is evidence of racial bias in the allocation of expenditures