# Summary of City-Wide Regression Analysis

The regression analysis evaluated the relationship between racial demographics and flood risk (FSHRI) across New York City. This summary highlights the key findings from the analysis.

## 1. Model Overview

- Dependent Variable: Flood Social Hazard Risk Index (FSHRI).

- R-squared = 0.298: About 29.8% of the variation in flood risk is explained by the racial demographic variables included in the model.

- Adjusted R-squared = 0.296: The slight reduction accounts for model complexity.

## 2. Statistically Significant Variables

- White Alone (coef = -1.0644, p = 0.003):

- Areas with a higher proportion of White residents are associated with lower flood risk.

- Asian Alone (coef = 3.0629, p < 0.001):

- Areas with a higher proportion of Asian residents are strongly associated with higher flood risk.

- Some Other Race Alone (coef = 2.6895, p < 0.001):

- Positively associated with higher flood risk.

## 3. Non-Statistically Significant Variables

- Black or African American Alone (coef = 0.2583, p = 0.478):

- While included in the model, the relationship with flood risk was not statistically significant, suggesting a weaker or inconsistent effect.

- American Indian and Alaska Native Alone (coef = 0.9742, p = 0.555):

- Similar to Black or African American, the impact on flood risk was not significant.

## 4. Potential Issues and Considerations

- Severe multicollinearity (Cond. No. = 4.82e+15):

- High correlations among racial demographic variables may reduce the reliability of individual coefficients.

- Model simplicity:

- Adding variables like income, housing type, or flood defense infrastructure could improve the model's explanatory power.