This project examines whether housing prices are related to fertility rates across U.S. states. Housing affordability has become one of the most widely discussed economic issues in the country, and it is reasonable to think that the cost of buying a home could influence major life decisions, such as when to have children. I was interested in this topic because discussions about affordability usually focus on migration or renting trends, but the potential link to fertility choices receives less attention. The guiding question of this project is whether states with more expensive housing markets tend to have lower fertility rates. This question is narrow enough to answer with publicly available data while still relating to meaningful economic behavior surrounding households and long-term planning.

The data comes from two major sources. Fertility rates were taken from the CDC's National Vital Statistics Reports, which provide annual birth rates per 1,000 women aged 15–44 for each state. Housing prices were drawn from the Zillow Home Value Index (ZHVI), specifically the December 2023 "typical home value" measure. Because Zillow reports values at the metropolitan level, I extracted state identifiers from each MSA and averaged the values within each state to create a single state-level housing measure. After merging the datasets, each state's most recent fertility rate was paired with its corresponding 2023 housing value. Some light cleaning was required to harmonize formats, remove missing observations, and convert all home price values into a consistent numeric structure. Summary statistics showed wide variation in both variables: fertility rates ranged from the low 40s to the mid-60s depending on the state, while typical home values ranged from under $200,000 to well above $800,000. A scatterplot of fertility rates against home values immediately suggested a downward relationship, with high-price states clustering toward lower fertility levels.

To analyze this relationship more formally, I estimated a simple Ordinary Least Squares regression using fertility rate as the dependent variable and median home value as the predictor. This linear model essentially measures the average slope between the two variables—whether fertility tends to rise or fall as home prices increase. Because this

model includes only one explanatory variable, it is intentionally simple and has clear limitations. It does not control for other relevant factors such as household income, educational attainment, childcare costs, or demographic differences across states. Instead, the goal is to quantify the basic correlation visible in the scatterplot, not to establish causation.

The results of the regression showed a negative coefficient on home value, meaning fertility rates tend to decline as housing prices rise. This aligns with the visual trend found in the exploratory plots. The coefficient itself indicates how many fertility-rate points decline, on average, for each additional dollar increase in typical home value. The model's residual plot did not reveal any major violations of linear model assumptions, although residuals were somewhat more spread out among high-cost states, which suggests increased variability that the simple model does not capture. Overall, while the model fit is modest—as expected for a one-variable regression—the negative association appears consistent across states. It is important to emphasize that this model does not prove that high housing costs cause lower fertility. Instead, it shows that the two variables move together in a way that is economically plausible and visually evident in the data.

Taken together, these findings show that in the United States, higher housing prices are associated with lower fertility rates at the state level. This result supports the idea that affordability may play a meaningful role in family-planning decisions, even though many other factors obviously contribute to fertility patterns. A more complete analysis could incorporate additional variables such as median income, unemployment rates, childcare expenses, or age distribution to see whether the negative relationship holds after accounting for broader economic conditions. Nonetheless, this simple first pass provides a clear and interpretable result: states with more expensive housing markets tend to have lower fertility rates, and this relationship is visible both in descriptive plots and in a formal regression model.

References for this project include CDC fertility reports and Zillow's ZHVI housing data, which provide transparent, publicly accessible sources that allow the analysis to be replicated.