Household income VS Median Household Income

How strongly are median house prices correlated with median household income?
The scatter plot shows a positive relationship between Median Household Income and Median House Prices. Areas with higher household incomes generally tend to have higher house prices, which aligns with the expectation that wealthier areas can sustain higher housing market values.

Do areas with higher household incomes generally have higher house prices?
The points are spread upwards as income increases, indicating a positive correlation. There may be some areas where house prices deviate from the general trend, suggesting other influencing factors like location desirability or market conditions.

Is there a relationship between income and house prices linear, or are there diminishing returns (e.g., luxury housing markets)?
The red regression line represents the linear relationship between income and house prices. The data points generally align with the line, indicating a positive correlation where house prices increase as household income rises. The R2 value (indicated in the legend) quantifies how well the line explains the variability in house prices based on income

Slope (5.15): For every $1 increase in median household income, the median house price increases by approximately $5.15 on average.

Employment Rate vs House Prices

Do regions with higher employment rates also have higher house prices?
There is a weak positive correlation (0.26) between employment rates and house prices, suggesting that regions with higher employment rates tend to have slightly higher house prices. However, the relationship is not strong, indicating that other factors, such as demand driven by external investments or local economic conditions, may also play significant roles.

Observation: The heatmap shows that regions with the highest employment rates (above 90%) tend to have clusters of higher house prices. However, the increase in house prices with the employment rate is not linear.

Explanation: While higher employment generally correlates with higher purchasing power and demand, local factors like housing supply constraints or economic conditions can also play a significant role.

How does the employment rate influence housing demand and prices over time?
The employment rate can influence housing demand and prices by affecting people's purchasing power and the overall economic stability of a region:

  - Higher employment rates: Indicate better economic activity, increased purchasing power, and higher housing demand, potentially driving up prices.
  - Lower employment rates: Can suppress demand and stagnate or lower house prices unless counterbalanced by external demand factors (e.g., tourism or investment).

Over time, areas with consistently high employment rates tend to see stable or increasing house prices. Conversely, regions dependent on cyclical industries might experience volatility.

- **Observation from Heatmap**:
  - Most of the density is concentrated in mid to high employment rate ranges (85–95%), where house prices remain moderate.
  - Over time, areas with higher employment rates may attract more residents, driving up housing demand and prices.
  - However, areas with low employment rates (very low or very high) show mixed patterns, as other economic or geographic factors likely dominate.
- **Inference**:
  - Employment rates have a modest influence on housing demand. Sustained high employment rates may lead to increased demand and higher prices, but the relationship is not universally strong.

Are there areas where high house prices exist despite low employment rates, and what could explain this?
Yes, regions with high house prices despite low employment rates have been identified. These areas often fall into one or more of the following categories:

  - Tourism hotspots: Regions with attractions or vacation homes that appeal to wealthy out-of-town buyers, leading to inflated housing demand.
  - Investment-driven markets: Areas with real estate seen as an investment opportunity, regardless of local economic conditions.
  - Retirement or luxury markets: Places appealing to retirees or high-income earners not reliant on local employment.
  - Urban housing pressure: Proximity to high-demand urban areas can drive prices up, even if employment opportunities are sparse locally.

Examples of such regions have been highlighted in the dataset for further exploration. Let me know if you'd like a deeper dive into specific cases!

- **Observation**:
    - The heatmap indicates relatively few regions with both low employment rates (below 80%) and high house prices.
    - These regions may exist but are outliers, as the majority of high house prices are clustered with high employment rates.
- **Possible Explanations for Outliers**:
    - **Tourism Hotspots**: Areas with high vacation home demand might inflate prices despite lower local employment rates.
    - **Investment Markets**: Real estate speculation or external investments could push prices higher in regions with low employment.
    - **Retirement or Luxury Destinations**: Affluent individuals purchasing homes in scenic or high-demand retirement areas may skew prices upward.

Temporal Analysis

How have median house prices changed relative to medina household income and employment rates over time?

Median house prices have generally increased over the years, showing higher growth compared to employment rates. Median household income growth also shows a steady rise, but at a slightly slower pace than house prices. Employment rates have improved steadily bur show the least percentage growth among the three metrics

Were there significant shifts in house prices during periods of economic changes (e.g, recession or booms)? Periods of economic changes, such as recovery after 2008-2009 recession, might explain the slower growth in house prices around 2012-2013, with a stronger upward trend from 2014 onwards

Is the growth rate of house prices outpacing the growth in household income or employment rates?

The growth in house prices outpaces the growth in median household income, indicating potential affordability issues over time. Employment growth, while steady, does not directly correlate with the sharper rise in house prices, suggesting other factors, like housing demand or market pressures, influence prices.