**Property Pricing Visualization**

**SobhaReddy Pittu – S555600**

**Northwest Missouri State University**

**Introduction:**

The Property pricing visualization project provides information about property pricing across various cities in the USA in various charts and maps. The property pricing dataset contains details of price to rent ratio values based on the location, Gross Rental Yield values based on the location, Mortgage value, Affordability Index, and price to the income ratio for various cities across the USA. Depending upon this data, I created seven different goals. Each goal is represented in a unique way. Charts for these seven goals are generated using both Excel and Tableau. Tableau generated charts are later represented in dashboards and storyboards to provide a detailed report on the chosen dataset.

**The domain of the data set.**

The domain of my dataset is Real estate.

**Data file.**



**Data source.**

<https://www.kaggle.com/datasets/themrityunjaypathak/property-prices-in-united-states>

**Number of records and columns:** Records count: 94 and column count: 10

**Visualization tools selected:** Tableau and Excel

**Data cleaning strategies:** One of the columns in the dataset needed pre-processing i.e., splitting the column. For splitting the column, I used the excel data splitting. After splitting, I removed the original column from the excel sheet.

**Cleaned dataset:**

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**Goals:**

* **Goal 1:** What is the distribution of the average affordability index across various states to identify the states with highest and lowest average affordability index?

**Generated Tableau Chart:**

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Description automatically generated

* **Goal 2:** What is the distribution of Mortgage across various cities in USA to identify the city with the highest mortgage among the top 10 ranked cities?

**Generated Tableau Chart:**

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Description automatically generated with medium confidence

* **Goal 3:** What is the distribution of price to income ratio across various cities in USA to identify the city with the highest price to income ratio among the top 10 ranked cities?  
    
  **Generated Tableau Chart:**

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Description automatically generated

* **Goal 4:** What is the distribution of Gross Rental Yield City Center across the various cities in USA to identify the city with highest Gross Rental Yield City Center among the top 10 ranked cities?

**Generated Tableau Chart:**

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Description automatically generated

* **Goal 5:** What is the distribution of Price to Rent Ratio City Center across the various cities in USA. To identify the city with the highest Price to Rent Ratio City Center among the top 10 ranked cities?

**Generated Tableau Chart**:

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Description automatically generated with medium confidence

* **Goal 6:** What is the distribution of Gross Rental Yield Outside of City across the various states in USA to identify the states with the highest and lowest Gross Rental Yield Outside of City?

**Generated Tableau Chart**:

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Description automatically generated with medium confidence

* **Goal 7:** What is the distribution of average Price to Rent Ratio Outside of City across the various states in USA to identify the states with the highest and lowest average Price to Rent Ratio Outside of City?

**Generated Excel Chart:**

**A picture containing text, screenshot, diagram, font

Description automatically generated**

**Stories for the above generated charts:**

* **Story 1:** I have used a **Filled Map** formy goal1 to identify the State with the highest and lowest average affordability index. For the visualization, I used the average affordability index. The above chart indicates that **Maryland** has the **highest affordability index** of **12.8** and the state **Hawaii** has the **lowest affordability index** of **1.30.** And states like Kansas, Alaska, and Missouri have affordability indexes of 7.70, 4.44, and 3.30 respectively.
* **Story 2:** I have used a **Line Chart** for my goal 2 to identify the city with the highest Mortgage. For the visualization, I used the Mortgage of the top 10 ranked cities. The above generated chart indicates that the city Santa Barbara has the highest Mortgage of 103.70. Followed by the city Queens with a Mortgage of 91.30. Similarly, the city Brooklyn has an 89.90 mortgage. And the cities New York, Honolulu, Oakland, Sunnyvale, San Francisco, Sarasota, and Long Beach have the mortgage values of 85.90, 79.20, 77.50, 76.50, 73.20,69.60 and 69.60 respectively.
* **Story 3:** I have used a **Bar Chart** for my goal 3 to identify the city with the highest price to income ratio. For the visualization, I used price to income ratio of the top 10 ranked cities. The above generated chart indicates that the city Santa Barbara has the highest Mortgage of 13.30. Followed by the city, Brooklyn with a price to income ratio of 11.20. Similarly, Queens city has an 11.10 price to income ratio. And the cities New York, Oakland, Sunnyvale, San Francisco, Honolulu, Sarasota, and Long Beach have the price to income ratio values of 10.40, 9.40, 9.30, 9.20, 9.20,8.50 and 8.50 respectively.
* **Story 4:** I have used a **Packed Bubble Chart** for my goal 4 to identify the city with the highest Gross Rental Yield City Center. For the visualization, I used the Gross Rental Yield City Center of the top 10 ranked cities. The above generated chart indicates that the city Sarasota has the highest Gross Rental Yield City Center value of 7.30. Followed by the city Oakland with a Gross Rental Yield City Center value of 6.60. Similarly, San Francisco city has a Gross Rental Yield City Center value of 6.10. And the cities New York, Honolulu, Brooklyn, Long Beach, Santa Barbara, Sunnyvale, and Queens have the Gross Rental Yield City Center values of 5.60, 5.50, 4.70, 4.40, 4.40, 3.80 and 2.80 respectively.
* **Story 5:** I have used an **Area Chart** for my goal 5 to identify the city with the highest Price to Rent Ratio City Center. For the visualization, I used the Price to Rent Ratio City Center of the top 10 ranked cities. The above generated chart indicates that Queens city has the highest Price to Rent Ratio City Center value of 35.50. Followed by the city Sunnyvale with a Price to Rent Ratio City Center value of 26.00. Similarly, Santa Barbara city has a 23.00 Price to Rent Ratio City Center. And the cities Long Beach, Brooklyn, Honolulu, New York, San Francisco, Oakland, and Sarasota have the Price to Rent Ratio City Center values of 22.70, 21.50, 18.30, 17.70, 16.50, 15.20 and 13.60 respectively.
* **Story 6:** I have used a **Lollipop chart** for my goal 6 to identify the State with the highest and lowest Gross Rental Yield Outside of City. For the visualization, I used average Gross Rental Yield Outside of City. The above generated chart indicates that Maryland has the highest average Gross Rental Yield Outside of City of 30.80 and the state New York has the lowest average Gross Rental Yield Outside of City of 5.23. And states like Kansas, Alaska, and Missouri have Gross Rental Yield Outside of City of 12.80, 14.40, and 9.90 respectively.
* **Story 7:** I have used a **Histogram** for my goal 7 to identify the State with the highest and lowest average Price to Rent Ratio Outside of City. For the visualization, I used average Price to Rent Ratio Outside of City. The above chart indicates that New York has the highest average Price to Rent Ratio Outside of City of 19.35 and the state Maryland has the lowest average Price to Rent Ratio Outside of City of 3.30. And states like Kansas, Alaska, and Missouri have affordability indexes of 7.80, 8.00, and 10.10 respectively.

**Dashboards & storyboards:**

* **Dashboard 1:**

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* **Dashboard 2:**

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**Storyboard:**

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**Conclusion:**

From all the above goals, dashboards and storyboards we can conclude that the Santa Barbara city has the highest values in mortgage, price to income ratio and the Sarasota city have the highest value in Gross Rental Yield City Center and the Queens City have highest value in price to rent ratio in city center. The state Maryland has the highest affordability index and the highest Gross Rental Yield Outside of city. But in average price to rent ratio outside of city the state New York have the highest value. We can conclude that these kinds of visualization techniques provide valuable information to individuals and investors for decision-making in the real estate market.