Analysis of Austin, Texas Area for Family Living

Summary

There are many great cities around the United States that people choose to call home. One popular city many people are moving to is Austin Texas. However, there are many factors that should be considered before making a decision on where to live such as cost of living, crime, school districts, etc. An analysis was performed on Austin Texas's Zillow listing to rate the best zip codes for living in.

After the analysis, we determined that the following zip codes 78750, 78751, 78739, and 78737 have the lowest crime rates with good academic school districts and homes at an affordable price point. Therefore we recommend zip codes 78750, 78751, 78739, and 78737 as the best choice for families with children. For young professionals without children who may not be as interested in areas with strong school districts, zip codes 78641, 78610, 78681, and 78664 may be an alternative since they also have low crime rates and affordable housing.

Analysis

With the data selection, the analysis will be conducted from four aspects, neighborhood safety, school rating, housing prices, and future trend.
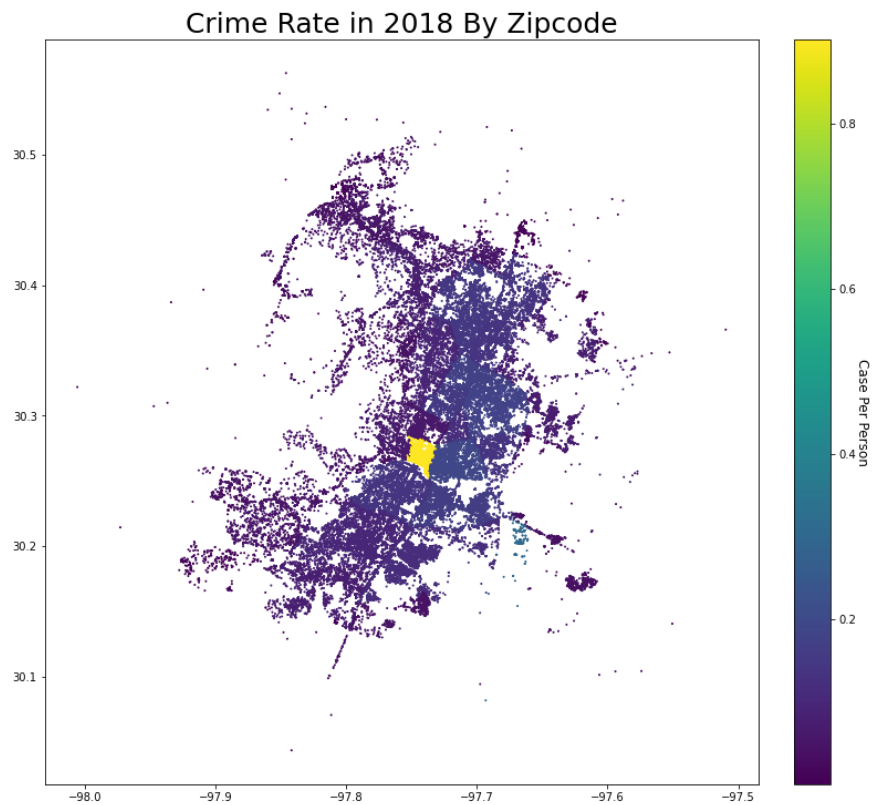
Safety
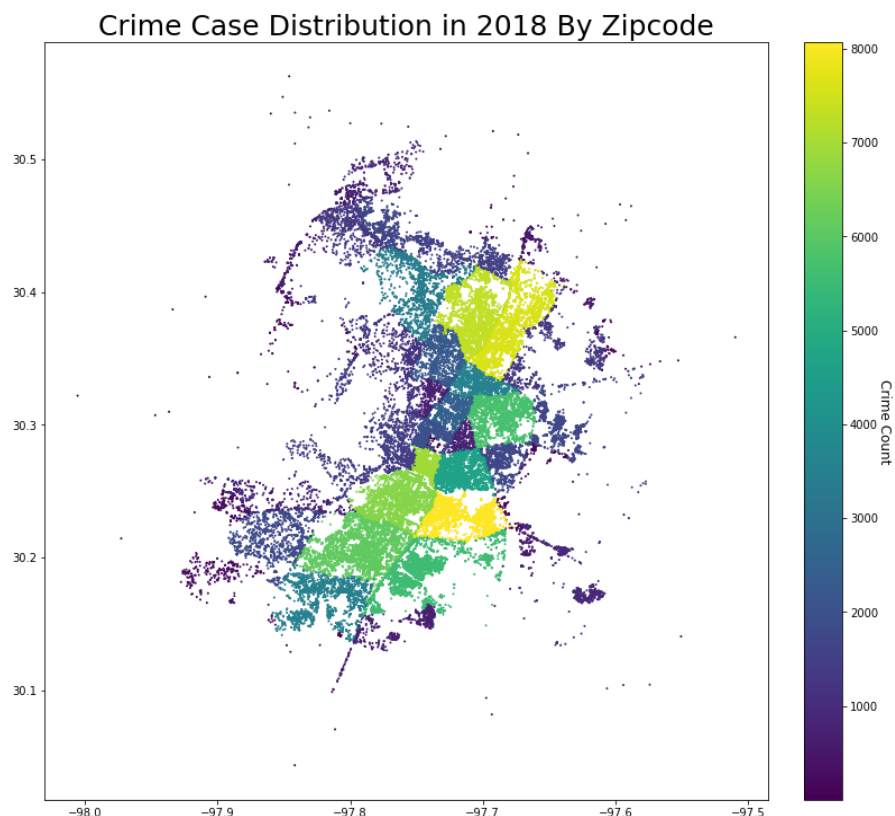
Graph 1

The first factor analyzed was crime count. The crime rate in an area can greatly influence housing prices and a family's decision to move there. Graph 1 illustrates the number of

criminal cases in different zip codes in Austin, TX. The following zip codes 78741, 78753, 78758, and 78701 had the highest crime distribution.

Graph 2

A second analysis was performed on the crime rate. As we can see from Graph 2, the 78701 area (downtown Austin) 's crime rate is close to one case per person, the highest in the Austin area. The yellow and green areas in Graph 1 have turned into dark blue in Graph 2, indicating they are more densely populated areas.

Crime Rate from 2018 to 2021 by ZipCode
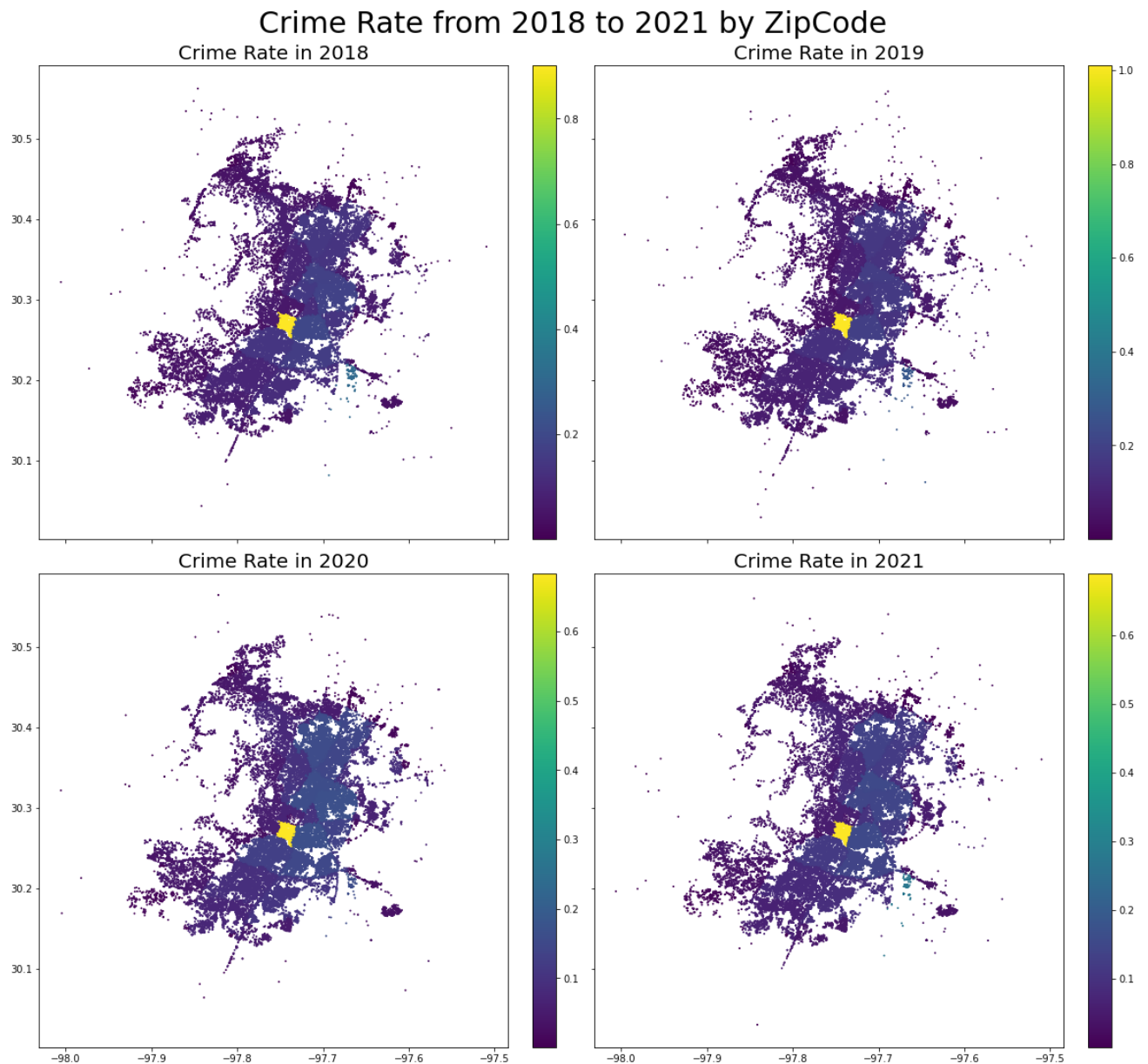
Graph 3

An analysis was performed over a time frame to gain a better understanding of the crime patterns of the area. Graph 3 shows the crime rate distribution from 2018 to 2021. It establishes the pattern that 78701 is the area with the highest crime count. Homeowners and home investors should take this into consideration when deciding on purchasing a home in that area.

The following list of zip codes is ranked from lowest to highest for crime in Austin Texas for at least three consecutive years. Families who consider home safety a priority may be interested in searching in these areas first. Those areas are listed as below: 78641, 78610, 78681, 78664, 78734, 78733, 78738, 78737, 78732, 78728, 78653, 78613, 78652, 78660, 78739, 78725, 78736, 78717, 78617, 78730, 78749, 78747, 78750, 78712, 78746.

School rating

Average School Rating for Houses in the Area
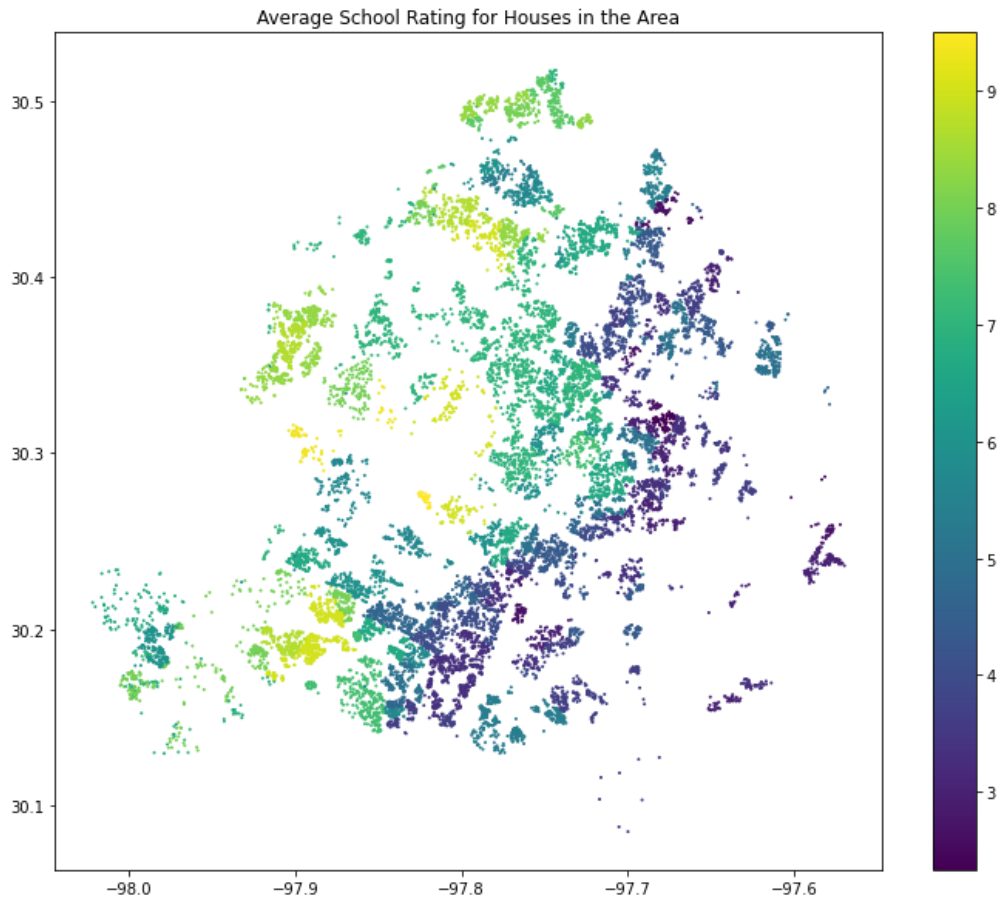
Graph 4

As shown in the graph and in the table, the following zip codes have a school rating of 7 and above: 78759, 78750, 78746, 78739, 78737, 78733, 78727, 78717, and 78751. They are considered to be an excellent school district and great for families with children to reside. Among these zip code districts, 78750, 78746, 78739, 78737, 78733, and 78751 are also considered as safest areas.

Housing Price
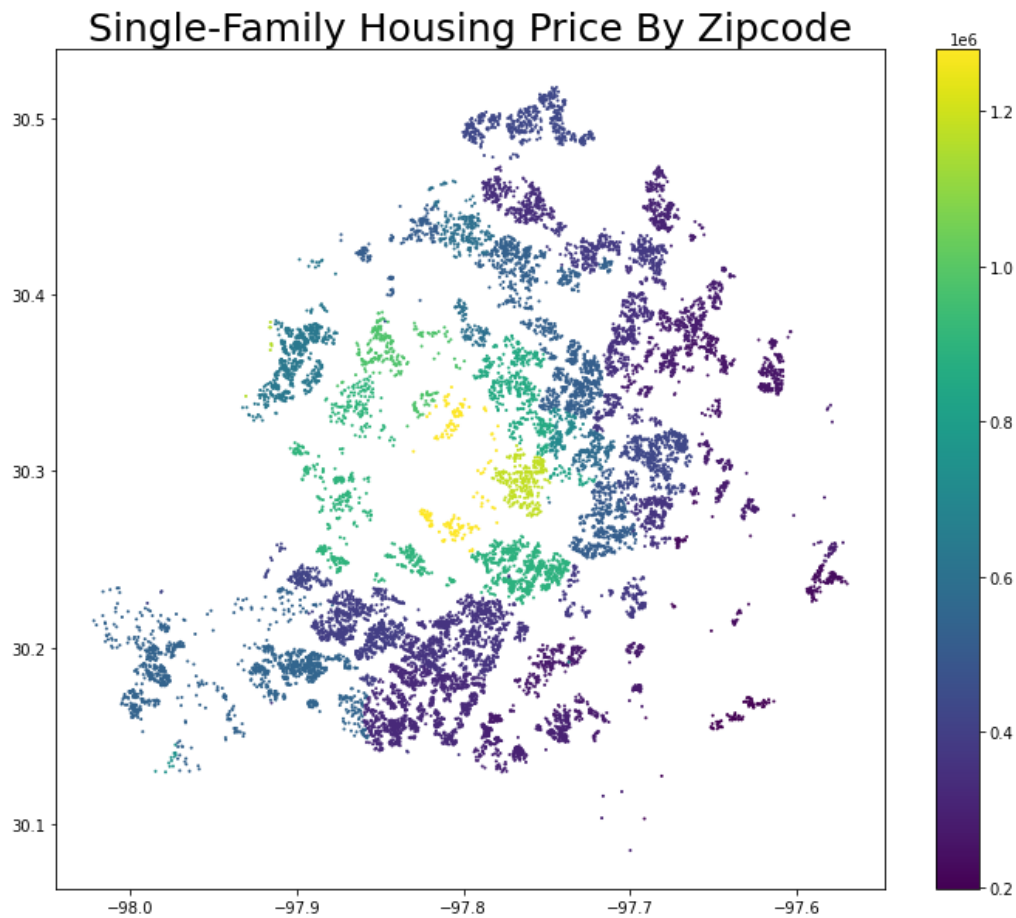
Graph 5

Housing in zip codes 78746 and 78703, has the highest average single-family home price. These high prices are influenced by the low crime rate and strong school districts. From the list generated from the criteria above, 78750, 78751, 78739, and 78737 are ranked 13th, 14th, 16th, and 17th correspondingly, which indicates that they have relatively higher but affordable housing prices in the area.

Future trend

zip code	pop_2010	pop_2022	growth_rate	pop_rank	growth_rank
78610	23502	38525	1.042045027	13	2
78626	25996	36556	1.028815926	15	10
78634	22791	34447	1.03502062	18	4
78640	42954	58790	1.026498504	4	12
78660	68789	91300	1.023872743	1	15

78665	35985	49074	1.026189333	9	13
78717	22538	30657	1.025969672	20	14
78748	40651	51653	1.020160944	7	19

Chart 6

Comparing the population distribution in 2010 and in 2022, 78626, 78640, 78660, 78665, and 78748 have the above-average annual growth rates as well as the highest populations in the Austin area.

Population growth and housing price have a positive correlation. A study by Cambridge University (Data Source 3) showed that if population growth increases by one percentage point, housing price growth increases by 1.4 percentage points.

Therefore these areas that have a positive inflow of population through migration will have an increasing housing demand, which in turn will drive up the housing price and indicate a good resale price for houses in the future. The fact that they have high growth and a large population at the same time suggests long-term momentum for housing opportunities.

Recommendations

There are many factors that should be considered when choosing where to reside. Families with children may prioritize neighborhood safety, school district, and housing affordability. Zip codes 78750, 78751, 78739, and 78737 are the recommended choices for families to reside in. The decision to buy a house is a long term commitment. It is important to consider the future trend to help make good financial decisions.

Appendix

Zip Code
Since different datasets have a different range of zip codes defined as Austin, I selected the list of zip codes from Zip Data Map (Data Source 2) and defined them as Austin to keep the compared districts consistent.

Housing Price Data Processing
In the initial examination of the data, the 'homeType' field has types other than 'Single Family' houses, such as 'Vacant Land', 'Condo' and 'Multifamily', that are not within our consideration in the context of the analysis. The dataset also has some **outlier prices** that are below market value that need to be removed. To make the data more consistent, **price per lot size square feet** was also added.

Crime Data Processing
Crime data from 2018 to 2021 are selected for analysis since it's more recent and relevant and enough to establish a pattern for analysis.

Using crime counts derived from the gov_crime table alone will provide a misleading understanding of different areas' crime risks. As the probability of being victimized is higher with a smaller local population and the same crime counts, the **crime rate** is a better

measurement to compare the safety in the different neighborhoods. The crime rate is calculated by dividing crime counts by the local population in the zip code area.

Population Data Processing
Since I only have access to the population data from the US 2010 Census and the current population data from World Population Review (Data Source 1), I decided to use **calculated average annual growth rates** to simulate the population from 2018 and 2021. This was done under the assumption that the population is growing at a consistent rate each year. After different migration trends are discovered in different zip code areas, it makes more sense to calculate the growth rate for individual zip code districts for a more accurate simulation. In the end, I ranked them and selected the areas ranking above 20 as areas with above-average growth rates.

Data Sources
1. https://worldpopulationreview.com/zips/texas
2. https://www.zipdatamaps.com/zipcodes-austin-tx
3. https://www.cambridge.org/core/journals/journal-of-demographic-economics/article/abs/do-demographic-changes-affect-house-prices/EDCD6AA8D40A41F19D9D24B4AD4F053A