

The North Texas Migration

by Imran Kader

Introduction

Dallas Fort Worth Metroplex (DFW) has seen influx of migration from East and West coast of United states. This is due to cost of living, availability and affordability of housing and job growth. My analysis will be targeting two major cities Plano and Richardson of North Texas. I will analyze their demographic, restaurant, crime and real estate so people migrating to North Texas can decide where they want to migrate to or open their business.

Data sets & Results

The data sets consist of data from National Center of Education, FBI Crime report, Four Square for restaurant data, Zillow residential data, Texas zip code Geojson data from Github. The data was downloaded and cropped for ease of use and code efficiency.

National Center for Education Statistics:

- National Center for Education collects school district level data. So, Plano Independent school district (PISD) and Richardson Independent school district (RISD) data were downloaded individually from <https://nces.ed.gov/>.
- DP03_611242190_PISD.xlsx (PISD employment data)

- DP03_61124258859_RISD.xlsx (RISD employment data)

Figure 1 shows the Employment distribution of Plano and Richardson. The distribution is very similar with Plano and Richardson having 67% of population employed.

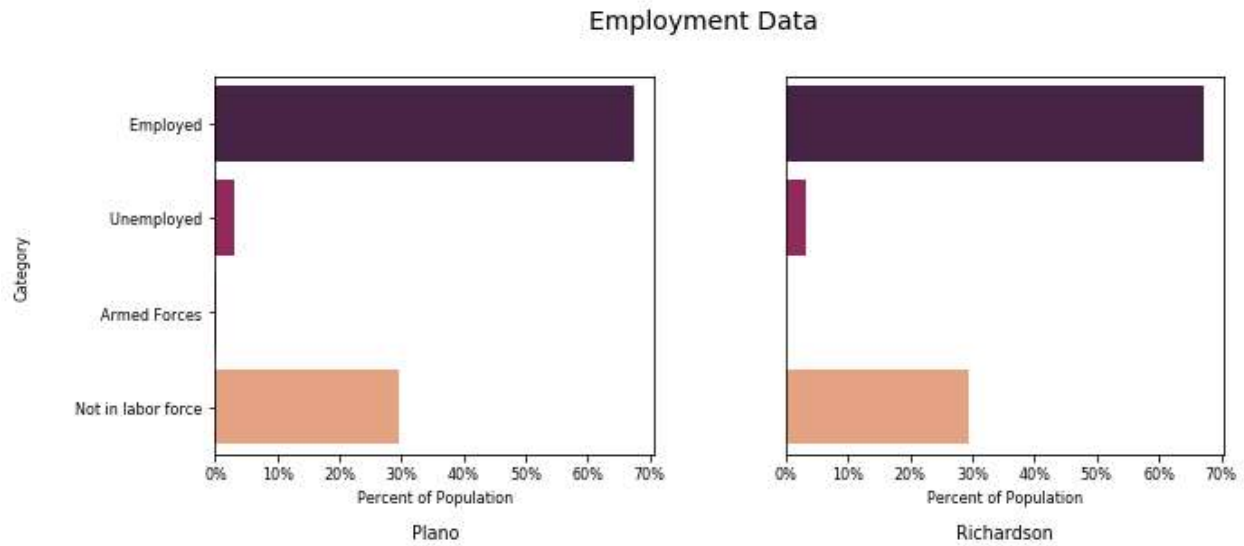


Figure 1 Employment Data

Figure 2 shows the for both Plano and Richardson almost 80% of population own vehicle and use it and less than 5% of population use public transportation (Plano 2% and Richardson 3%).

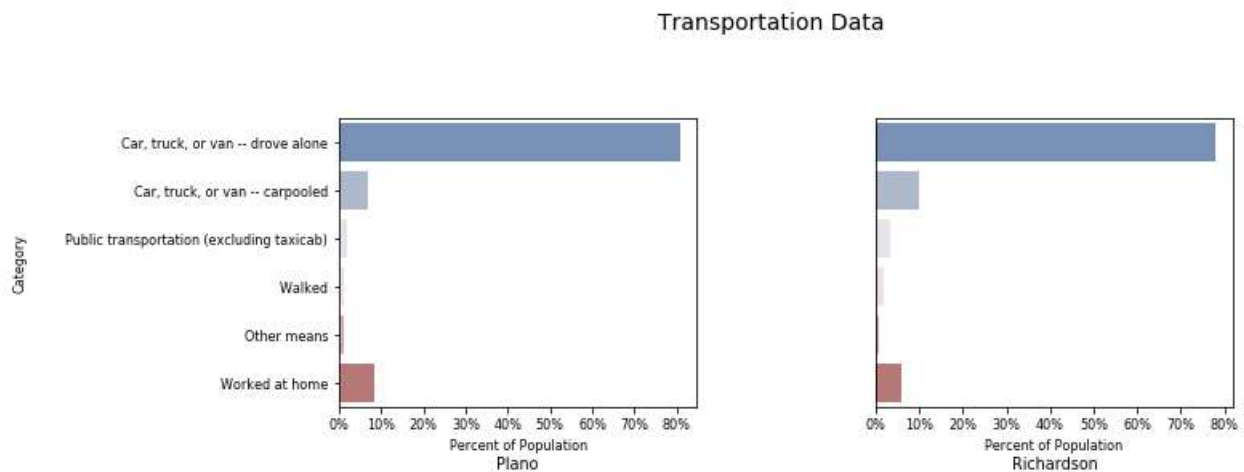


Figure 2 Transportation Data

Figure 3 shows the distribution of industry data for Plano and Richardson.

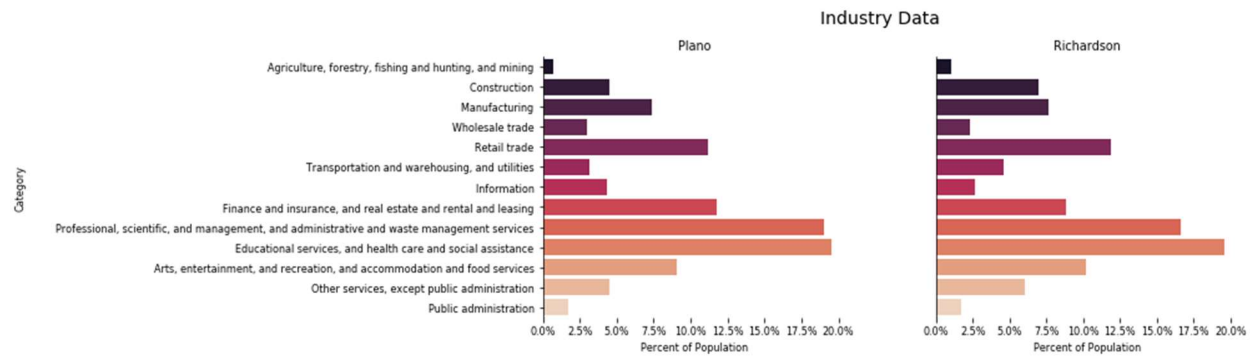


Figure 3 Industry Data

Based on Figure 4 the income distribution between Plano and Richardson it looks like Plano has 44% of it's population over \$100k while Richardson has 31%.

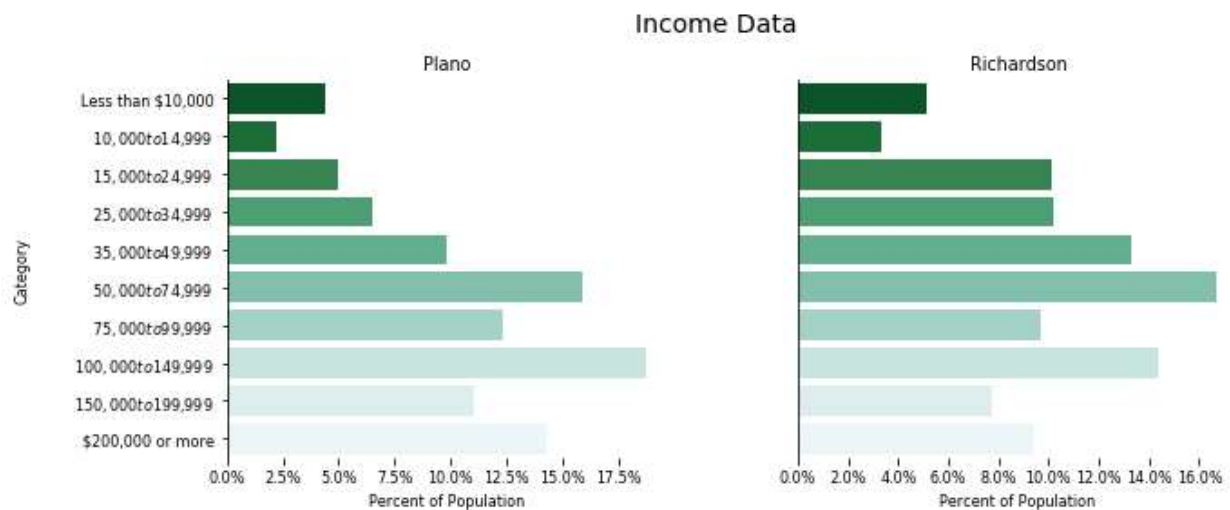


Figure 4 Income data

- DP04_61124142266_Housing_PISD.xlsx (PISD housing data)
- DP04_6112410532_Housing_RISD.xlsx (RISD housing data)

Housing occupancy is over 92% for both cities based on Figure 5 while Plano having 142k housing units and Richardson 103k. Figure 6 shows 60% of Plano housing units are one unit detached (single family home) and 25% are apartments (more than 10 units). Richardson has 47% single family homes and 35% apartments.

Housing Occupy Data

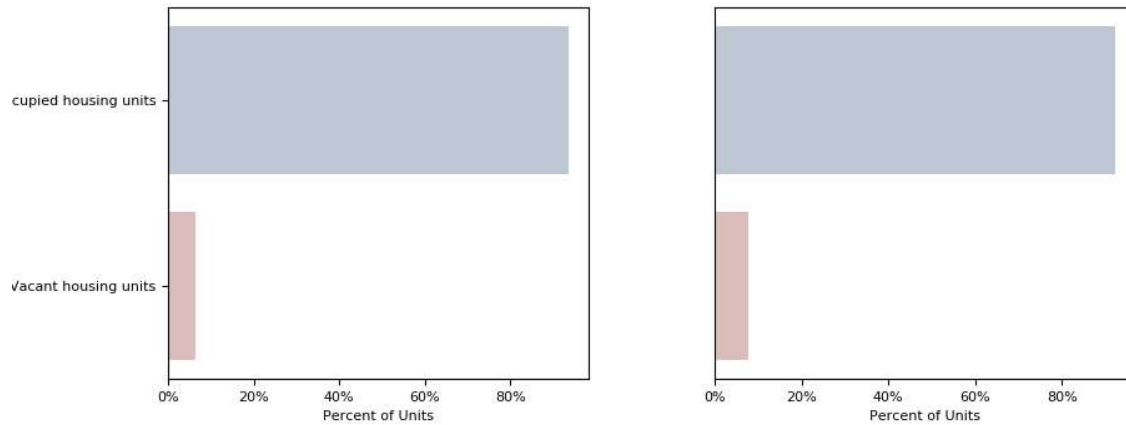


Figure 5 Housing Occupancy

Housing Unit Data

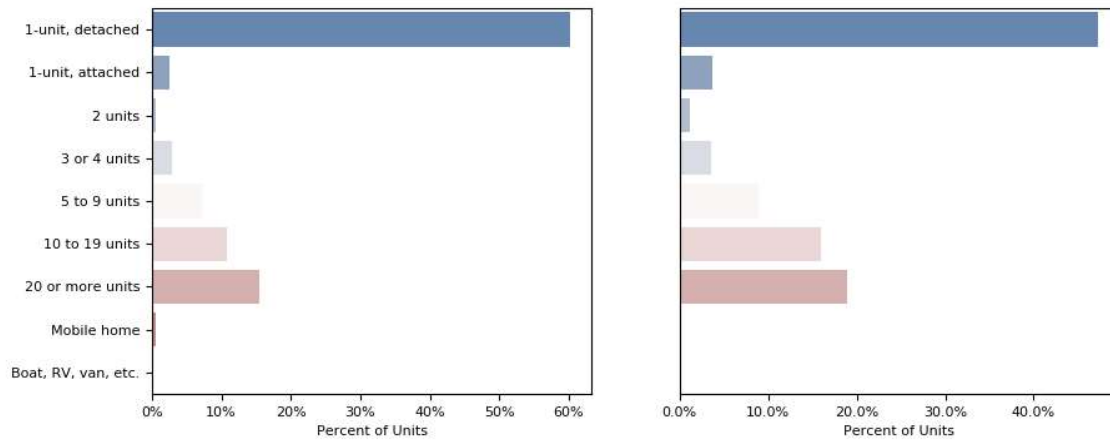


Figure 6 Housing Unit

Figure 7 shows the age of the properties in both cities. Richardson is an earlier suburb of Dallas Fort-Worth metroplex. It shows in the dataset Richardson housing units are 10-15 years older than Plano. Mortgage rate in Figure 8 does not show much disparities between the cities.

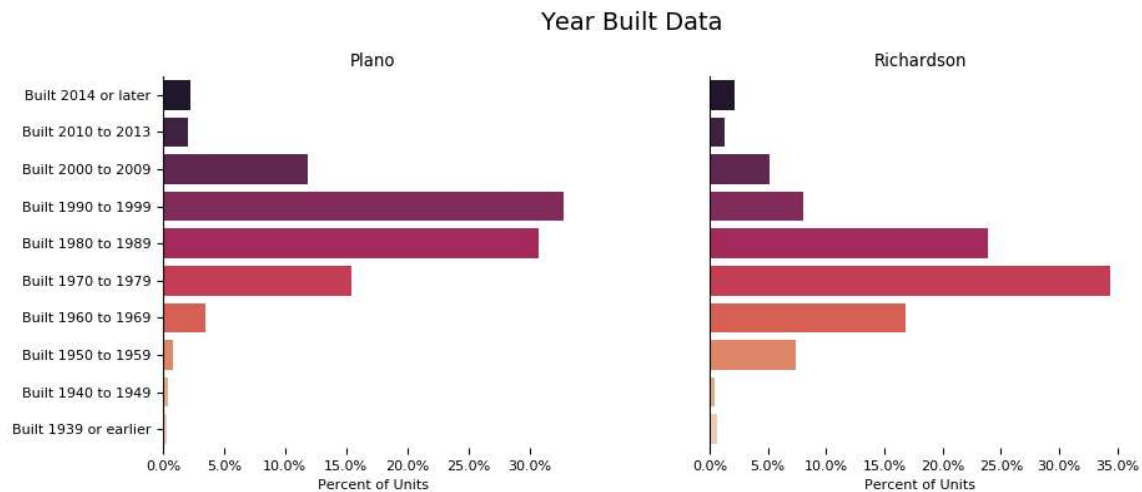


Figure 7 Year built

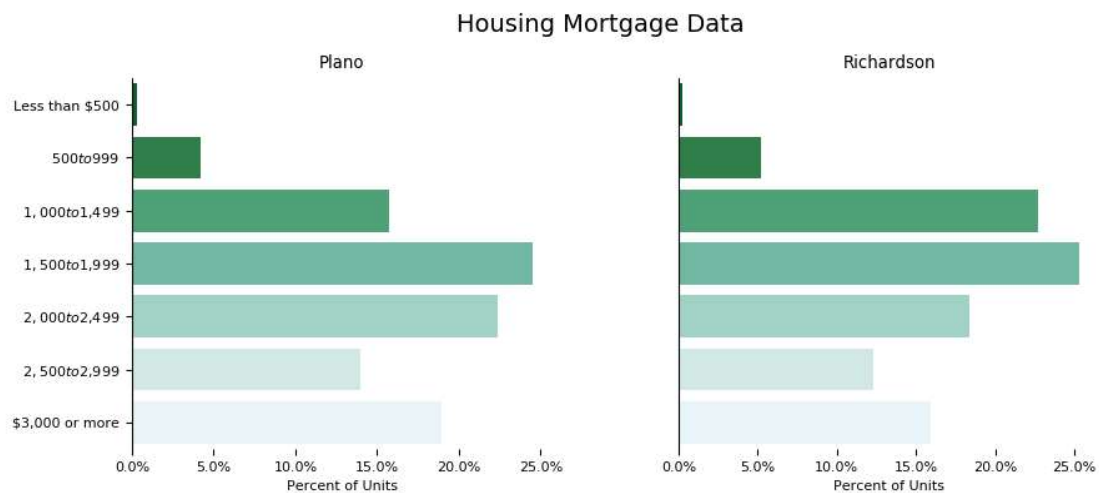


Figure 8 Mortgage Data

- DP05_61123844391_DEMO_PISD.xlsx (PISD demographic data)
- DP05_61123942407_DEMO_RISD.xlsx (RISD demographic data)

While Plano population is over 352k and Richardson is over 248k both cities have over 50% female population based on Figure 10.

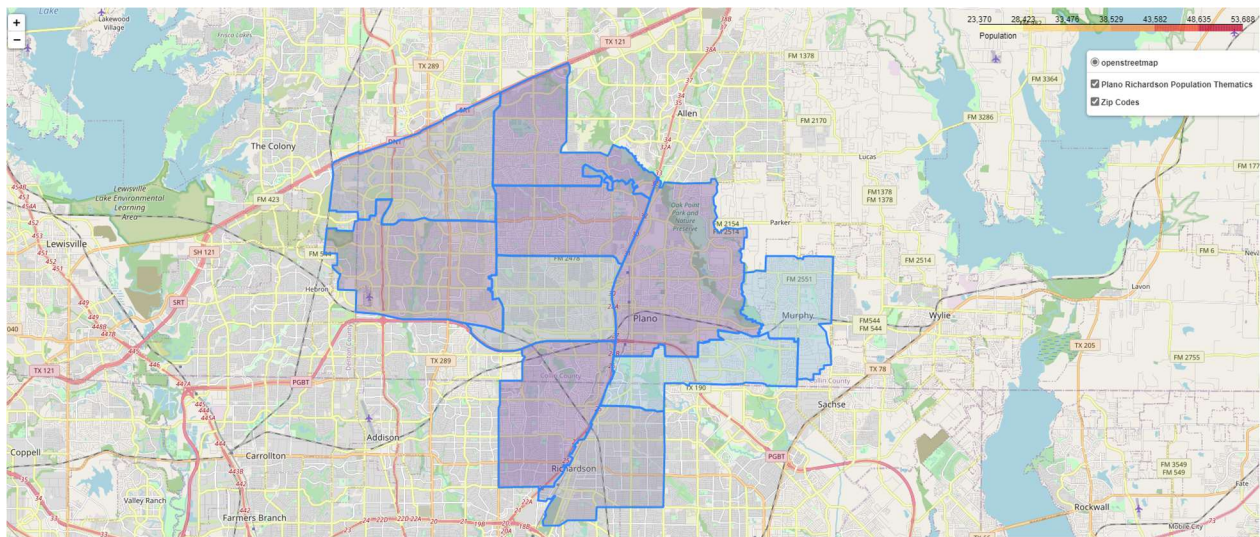


Figure 9 Population by Zip Code

Gender Data

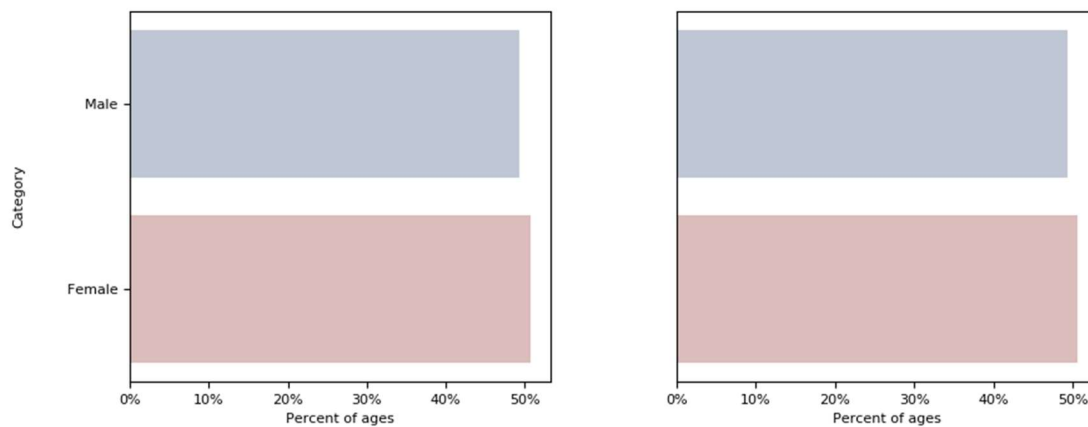


Figure 10 Gender Data

Richardson has 65% of its population below the age of 45 while Plano has only 60% Figure 11. Median age of Plano is 38 and Richardson is 34.

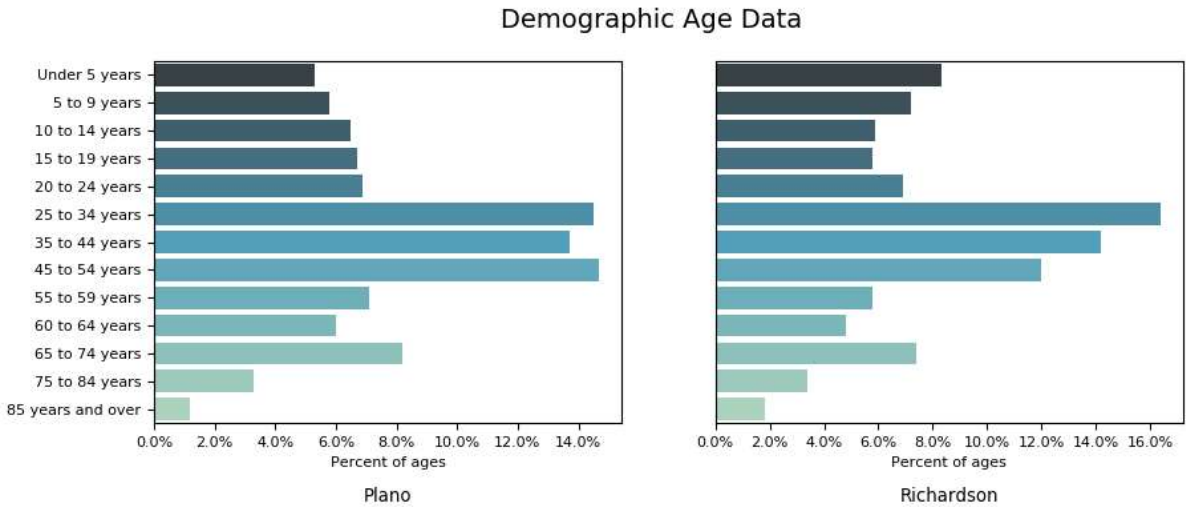


Figure 11 Demographic Age

In Figure 12 shows Plano has 65% white and Richardson has 54% as their corresponding highest percentage of population. Richardson has 50% less population of Asians while Plano has 50% less population of African Americans.

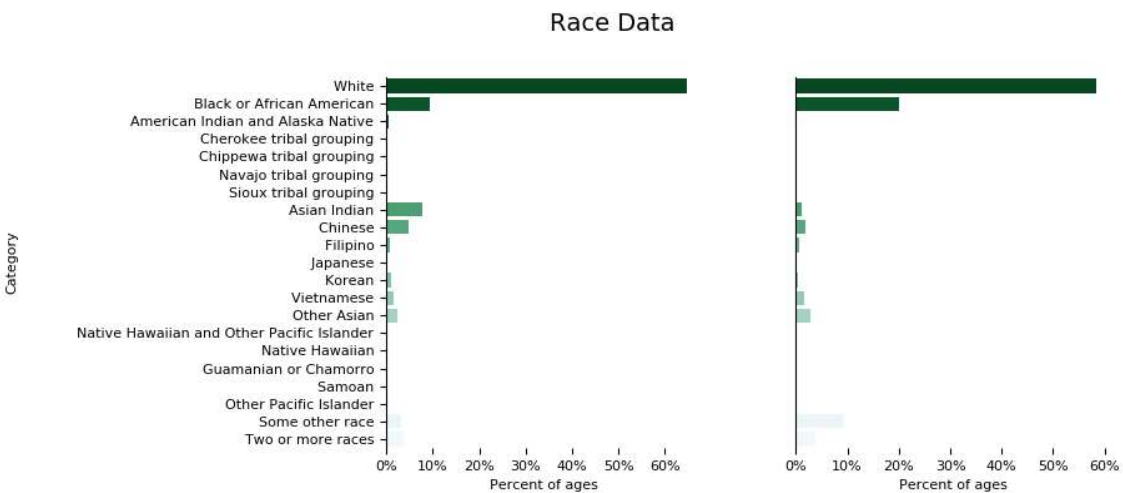


Figure 12 Race Data

Crime report:

- Crime data was downloaded for city of Plano and Richardson from FBI data sets from <https://www.fbi.gov/services/cjis/ucr>
- texas_Crime_report_FBI_Filtered.xlsx

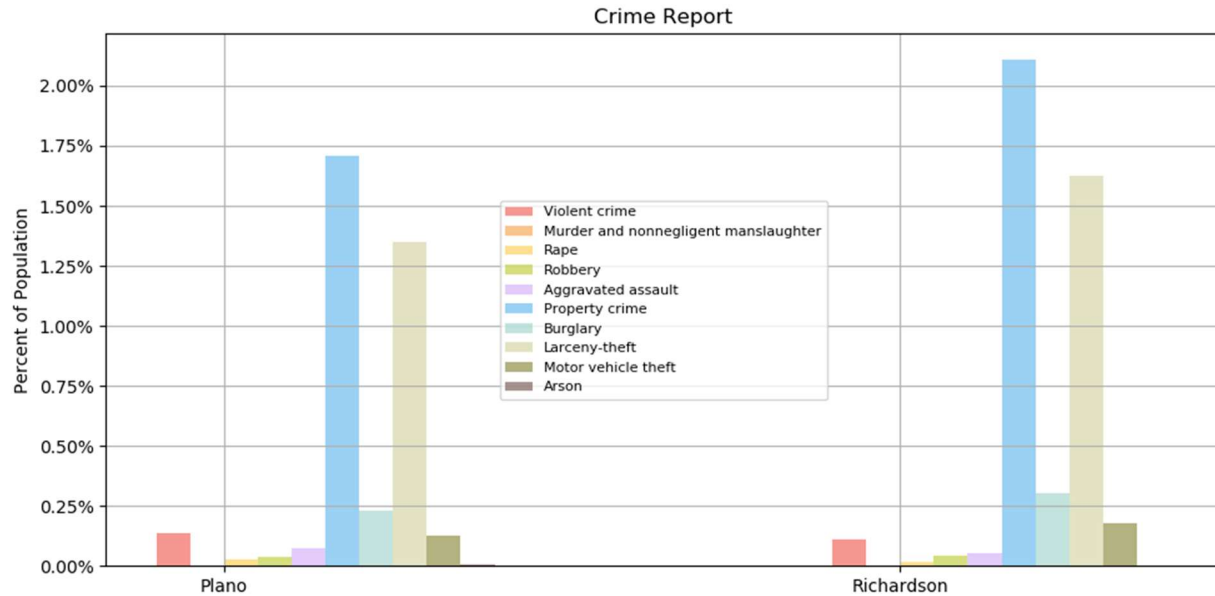


Figure 13 Crime Data

Data shows there are not many violent crimes in both cities, but percentage wise Richardson shows slightly higher rate than Plano Figure 13.

Real Estate data:

- Real estate data was downloaded for city of Plano and Richardson from Zillow data sets from <https://www.zillow.com/research/data/>
- Available_MonthlyListings_NSA_AllHomes_Zip.csv (Plano & Richardson Available single-family homes)
- Neighborhood_Zhvi_SingleFamilyResidence.csv (Plano & Richardson Price of single-family homes)

Zillow data shows Richardson has higher average price per single family home than Plano. Both cities average home value prices are trending upwards Figure 14. Figure 15 shows Plano has higher unit availability than Richardson. The plot also shows the seasonality trend for both cities.

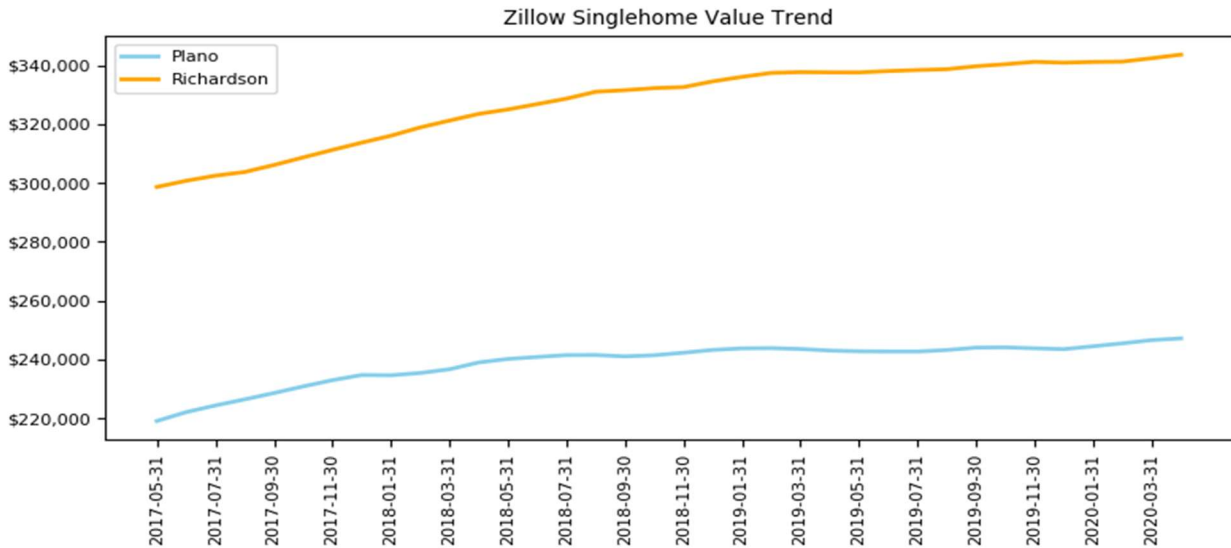


Figure 14 Single Home Value Trend

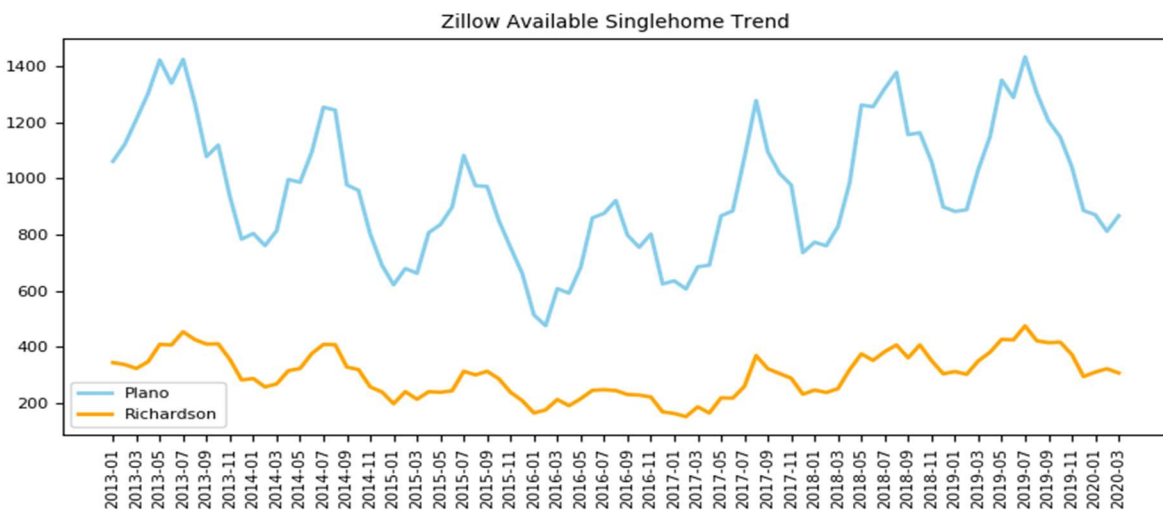


Figure 15 Single home availability

Restaurant data:

- Restaurant data was downloaded for city of Plano and Richardson from <https://foursquare.com/>
- Restaurant.csv (Restaurants in Plano and Richardson with location and categories)

Four Square data shows Plano has more variety of restaurant than Richardson Figure 17. The count of Chinese restaurant is high on both cities ranking 1 and 2 in Plano and Richardson.

Discussion and Observation:

- While Richardson lacking Mexican restaurant when it Ranks as number 1 in Plano.
- Plano does not show Middle Eastern/Mediterranean enough while it is high in count in Plano.

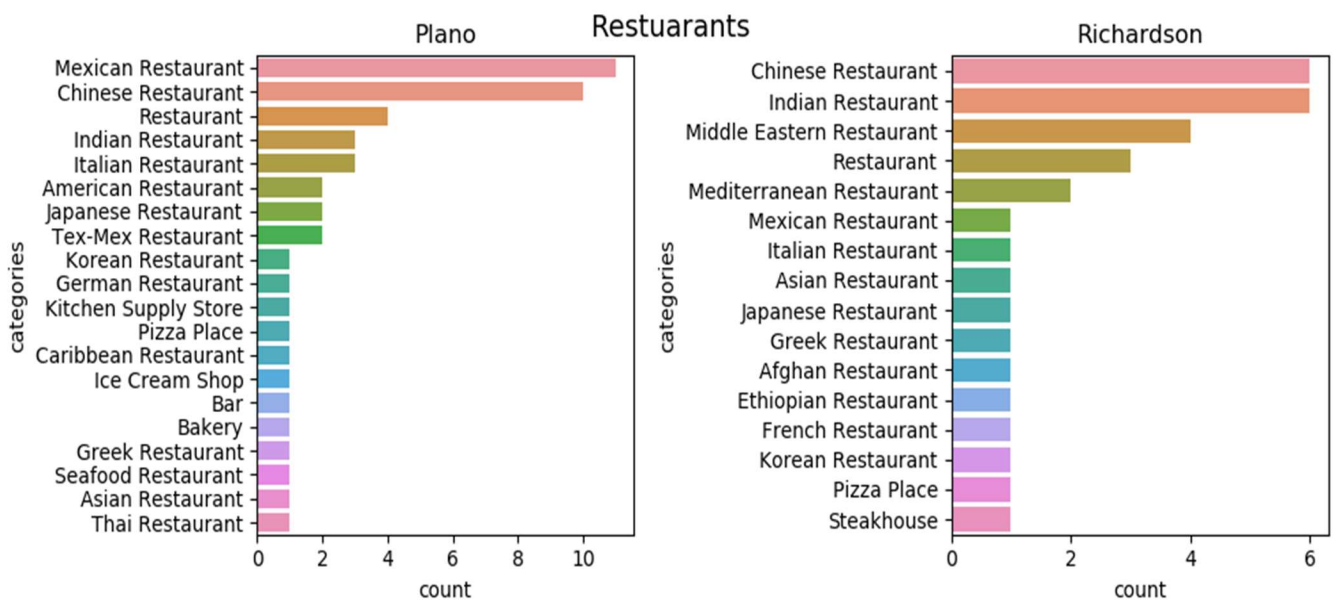


Figure 16 Four Square Restaurant Data

- Figure 17 shows the map of restaurants in Plano and Richardson.
- While Plano shows more spread out restaurants Richardson does not
- Number of restaurants suggest population is Plano intend to eat out more than Richardson

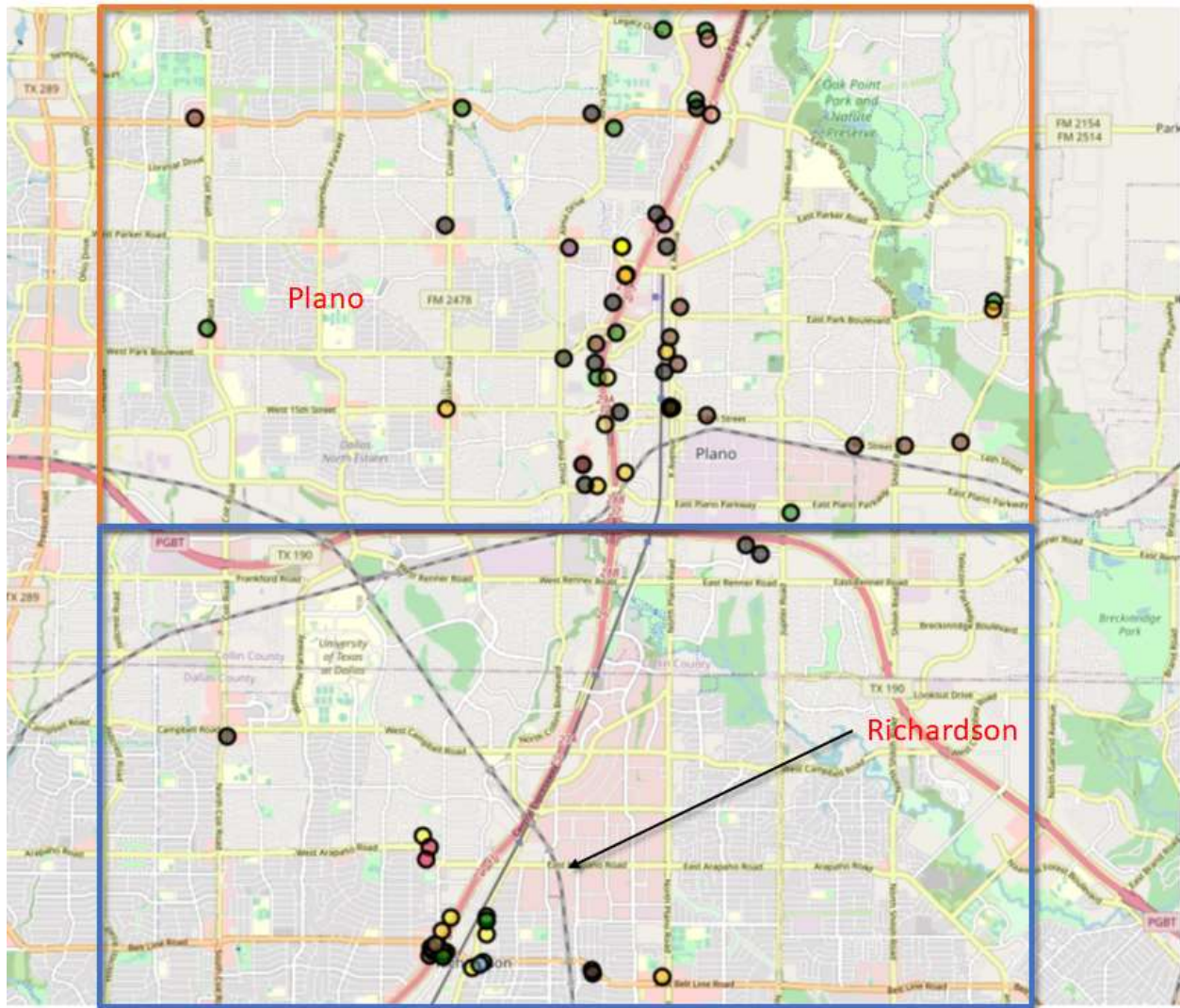


Figure 17 Map of Restaurants

Conclusion:

My objective was to show the North Texas migrant data of two cities (Plano and Richardson) and show the observation so they can make their decision on where to live and where to open their restaurant business.

With fives sets of data independent data set in the report with multiple charts and graphs hope reader can decide based on their criteria where to live or open their business.