Which City in TX is the Best to Start a New Apartment Business

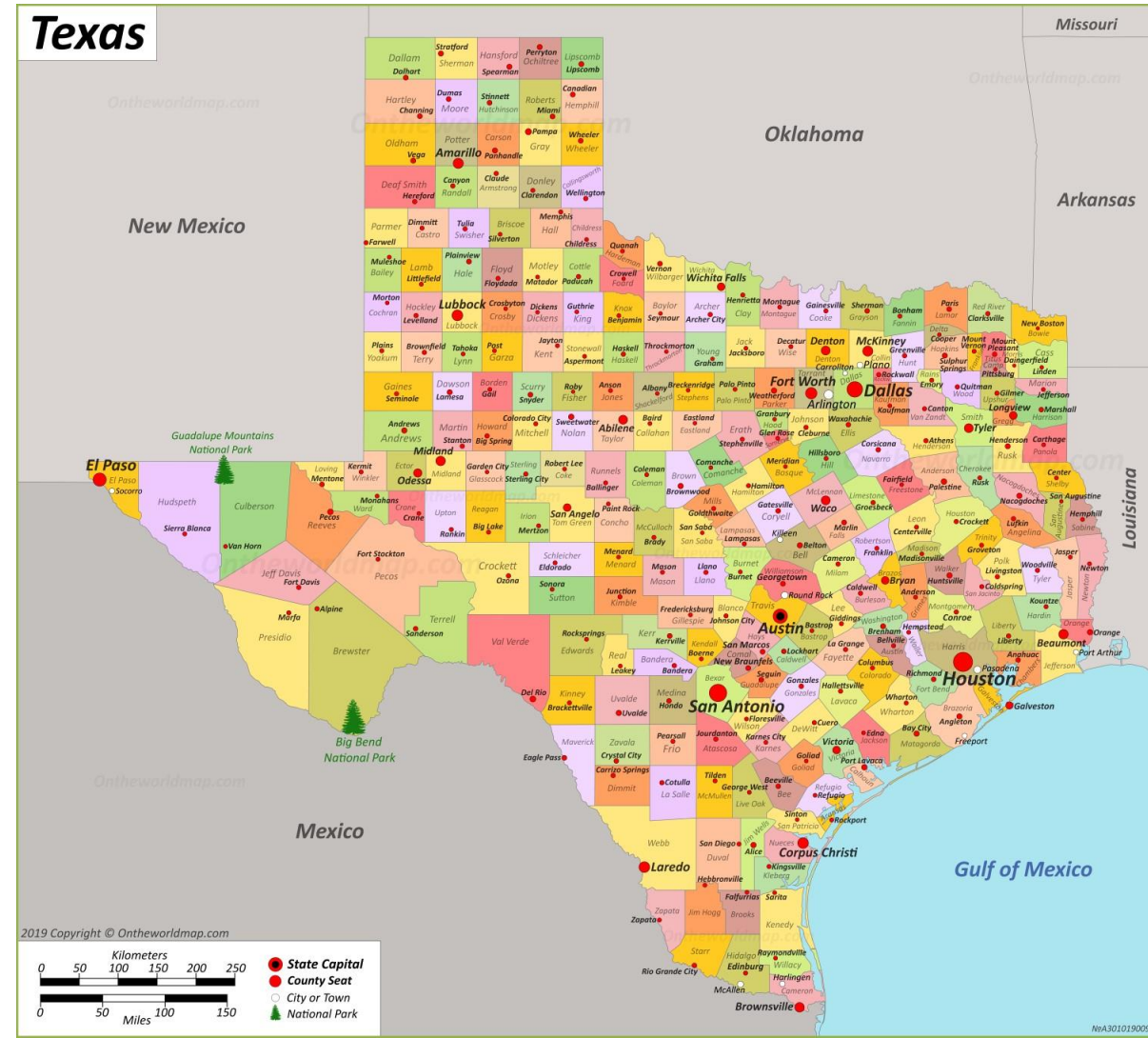Yuan

Coursera Course Report

Problem Statement

- To start a new apartment business, the choices of location are always the first step.

- Then, the future analysis can be based on this study to choose specific location after the city been determined.

- Therefore, to choose a city is the critical step to us.

- To determine which city is the best choice, population, household income, mean travel time to work, and criminal index are considered in our study.

Background

- Texas is the second largest U.S. state by both area and population.
- Texas has 254 counties and more than 1200 cities, the range in size from Houston, with more than 2.3 million residents, to over 400 towns with populations of fewer than 1000.
- The city and economic grows in Texas are fast right now.
- Therefore, to start up an apartment business in Texas will be profitable in future.

Data Collection

- Web sources:

- https://www.tsl.texas.gov/ref/abouttx/popcity32010.html

- https://www.indexmundi.com/facts/united-states/quick-facts/texas/median-household income/cities#table

- https://www.indexmundi.com/facts/united-states/quick-facts/texas/average-commute-time/cities#table

- http://www.usa.com/rank/texas-state--crime-index--city-rank.htm?hl=&hlst=&wist=&yr=&dis=&sb=ASC&plow=&phigh=&ps=

Population table

	City Name	Population
0	Houston	2099451
1	San Antonio	1327407
2	Dallas	1197816
3	Austin	790390
4	Fort Worth	741206

Household income value table

	City Name	Household Income Value ($)
0	Abilene	47689
1	Addison	73383
2	Alamo	39275
3	Alamo Heights	132313
4	Aldine	38964

Mean travel time table

	City Name	Mean Travel Time (min)
0	Abilene	15.6
1	Addison	22.1
2	Alamo	20.7
3	Alamo Heights	19.0
4	Aldine	31.4

Criminal index table

	Rank	Crime Index	City Name/ Population
0	1.	0	Kempner, TX / 1,133
1	2.	23	Brackettville, TX / 2,070
2	3.	52	Bloomburg, TX / 307
3	4.	135	Crowell, TX / 811
4	5.	160	O'donnell, TX / 982

Data Combination and Validation

- The data have been combined by population, household income value, mean travel time, and crime index, and sorted by population.

- The largest cities is Houston with population 2,099,451

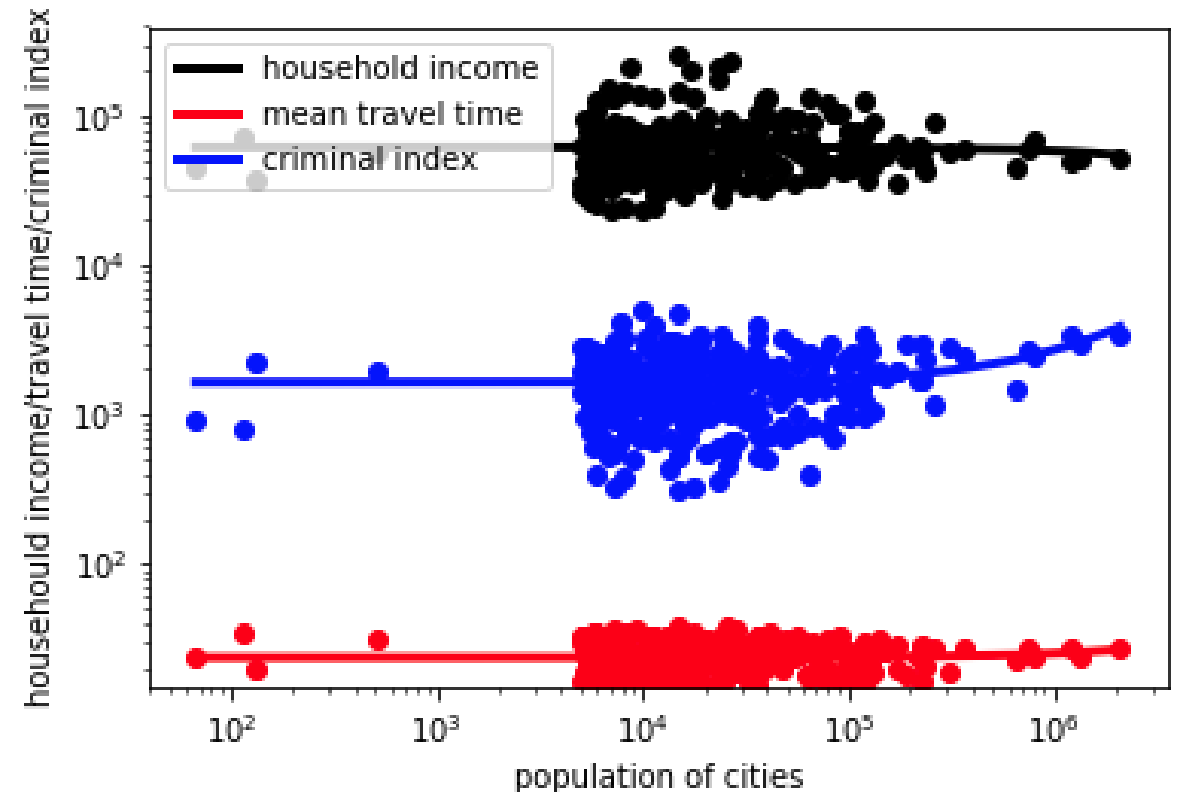| City Name	Population	Household Income Value ($)	Mean Travel Time (min)	Crime Index
Houston	2099451	51140.0	27.4	3419.0
San Antonio	1327407	50980.0	24.4	2921.0
Dallas	1197816	50100.0	27.0	3369.0
Austin	790390	67462.0	24.3	2455.0
Fort Worth	741206	59255.0	27.2	2688.0
El Paso	649121	45656.0	22.8	1496.0
Arlington	365438	58502.0	27.2	2454.0
Corpus Christi	305215	55709.0	19.2	2822.0
Plano	259841	92121.0	26.9	1168.0
Laredo	236091	43351.0	21.1	2375.0
Lubbock	229573	48701.0	16.4	2957.0
Garland	226876	58999.0	29.1	1715.0
Irving	216290	61937.0	24.2	1688.0
Amarillo	190695	52543.0	17.8	2932.0
Grand Prairie	175396	65249.0	28.7	1975.0
Brownsville	175023	36499.0	20.2	1989.0
Pasadena	149043	53331.0	26.4	1814.0
Mesquite	139824	56074.0	31.9	1974.0
Mckinney	131117	89964.0	29.4	1045.0
Mcallen	129877	47279.0	19.2	1869.0

Data Analysis

- As we know large population, high household income, low mean travel time, and low crime index will be good for new apartment business.

City Name	Population	Household Income Value ($)	Mean Travel Time (min)	Crime Index
Odessa	99,940	63,145	21.5	2,244
Round Rock	99,887	80,637	25.8	949
Richardson	99,223	80,953	24.4	1,310
Tyler	96,900	49,254	20.6	2,369
Lewisville	95,290	63,056	25.4	1,408

- The top 5 potential candidates are sorted out by population, household income, mean travel time, and crime index.

Data Analysis and Discussion

- The linear regression on population and household income, population and mean travel time, and population and crime index are generated.

- Basing on these relationships, Round Rock is the best candidate among others

Conclusion and Future Work

- Base on the data, Round Rock is the best city for us to start up a new apartment business.

- This study is a preliminary study on the location choosing for apartment. A more detailed and matured study need to be conducted to consider other factors, such as hospital amount, school distance, and entertainment locations.