

The secure place to open Restaurant in Nevada

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1. A description of the problem and a discussion of the background

1. Introduction

1.1 Background

To launch a new business particularly in restaurant industry can feel daunting. If u consider starting your own restaurant, u must have more information on which area of the country you are going to operate in. Therefore, it is advantageous for businessmen to have enough information on the targeted place to move in for starting to do business. Some of that information can be the population of the targeted place, to be sure they will get clients. The security of that place must be the first information to get before deciding to move for business.

The security is the most important and without security no business or any activity can not be done. In the United States, some crimes have been identified in different states and they are present in different types. There are two types of crimes Violent crimes and property crime. When u want to do any business, u must consider the place where the security is guaranteed or where the rate of crimes is very low. The safe place is the most important factor that determines the rentability of any business.

1.2 Problem

Data might contribute to determine the best location to do business by comparing different states based on the different crime rate and what type of business to do. This project aim to help stakeholders who want to do restaurant business in Nevada state.

1.3 Interest

To start a business, it is a must to consider strategic points including competitiveness, location and security which is most important for a businessman who wants a profitable business. The innovation of a new activity or business is also very important to attract the population to the diversity of activities, at the cultural level. In a country that has immigrants it is sure that diversity is welcomed in different communities in many cities. It is in this sense that the restaurant is a good business to do in a big city where there are different communities. This project aims to determine a good place to open a restaurant and setup his office in the state of Nevada.

2. Data acquisition and cleaning

The data to use in this project, is data based on United States Cities by crime rate based on crime report statistics from 2017 for the top most populous cities in America. The data is found on the following link: https://en.wikipedia.org/wiki/List_of_United_States_cities_by_crime_rate. In the United States, some crimes have been identified in different states and they are present in different types. There are 3 types of crimes Violent crimes, property crimes and Arson crimes. The data provided is based on Crime rates per 100,000 people per year and the population numbers are based on U.S. Census estimates for the year end. The file contains data for 36 states, their population and different crimes in different cities. The safe place must be a place with less rate number of crimes. Based of the information in the file, we will explore the states cities and the crimes recorded which is most important in choosing the safe place to do the business.

Foursquare API will help to collect data to locate different places and get coordinates of states, cities, neighborhoods and get knowledge on the venues in different cities. With the data related to the venues, we can now the existence of competitors of the business and also to know other options of business that can be done in a city. The Nevada state is the state of interest and details information must be analysed in order to decide the right place for restaurant business. Nevada state has 121 cities and the information about the population is available on the following link: https://www.nevada-demographics.com/cities_by_population. The population data helps as to know where there are a large population so that we can get clients. The data for neighborhoods that will be used is at the link: <http://www.city-data.com/nbmaps/neigh-Henderson-Nevada.html>.

3. Methodology

In this report we have used crimes data based on statistic report in 2017. The report is based on 36 states in United State and the data was put in excel and download the data in dataframe to facilitate processing. Each state shows the population in each city where the crime was committed and reported. The data has eight crimes types divided into 3 major groups: Murder and Nonnegligent manslaughter, rape, robbery, aggravated assault for the group 1 called violent crime. The group 2 called property crime contains burglary, Larceny_theft, motor_vehicle_theft. The third group is arson. The figure bellow shows the data:

	State	City	Population	Violent crime Total	Murder and Nonnegligent manslaughter	Rape1	Robbery	Aggravated assault	Totalll	Burglary	Larceny_theft	Motor_vehicle_theft	Arson
0	Alabama	Mobile3	248431	740.25	20.13	58.16	177.11	485.85	5453.83	1216.84	3730.21	506.78	22.94
1	Alaska	Anchorage	296188	1203.29	9.12	132.01	262.67	799.49	5415.82	748.17	3619.66	1047.98	20.93
2	Arizona	Chandler	249355	259.47	2.01	52.13	56.95	148.38	2329.61	314.41	1866.01	149.18	NaN
3	Arizona	Gilbert	242090	85.51	2.07	16.11	21.07	46.26	1385.85	192.49	1137.59	55.76	12.39
4	Arizona	Glendale	249273	488.22	4.81	38.91	192.96	251.53	4530.37	637.45	3426.36	466.56	19.26

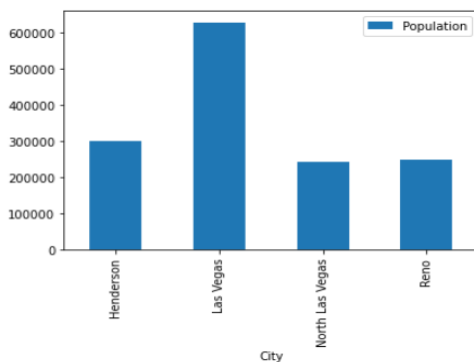
I have exploring all states and get all data for each city in the state based on the crimes types as it is shown on the figure:

State	Violent crime Total	Property crime Total	Arson
California	10685.49	54086.78	504.10
Texas	6165.72	36934.39	175.22
Missouri	3806.60	10585.03	106.23
Florida	3457.74	21265.32	72.67
Tennessee	3141.49	10115.79	66.29
Ohio	3017.29	17914.60	109.10
Arizona	2968.97	21512.24	86.32
Nevada	2492.26	10248.18	24.39
Louisiana	2148.22	9837.87	83.32
Michigan	2056.67	4540.60	129.55

Nevada state is the state of interest to set the business project. The crimes reported in four cities which are most populous: Henderson, Las Vegas, North Las Vegas, and Reno.

State	City	Population	Violent crime Total	Murder and Nonnegligent manslaughter	Rape1	Robbery	Aggravated assault	Property crime Total	Burglary	Larceny_theft	Motor_vehicle_theft	Arson
Nevada	Henderson	299285	185.11	3.34	28.74	80.19	72.84	1833.04	363.87	1254.99	214.18	7.02
Nevada	Las Vegas	627244	618.90	12.60	79.64	211.15	315.50	2943.38	805.17	1635.16	503.06	5.59
Nevada	North Las Vegas	242537	1014.69	9.07	47.83	232.95	724.84	2386.03	804.00	1037.37	544.66	4.54
Nevada	Reno	248531	673.56	7.64	57.14	153.70	455.07	3085.73	541.98	1967.56	576.19	7.24

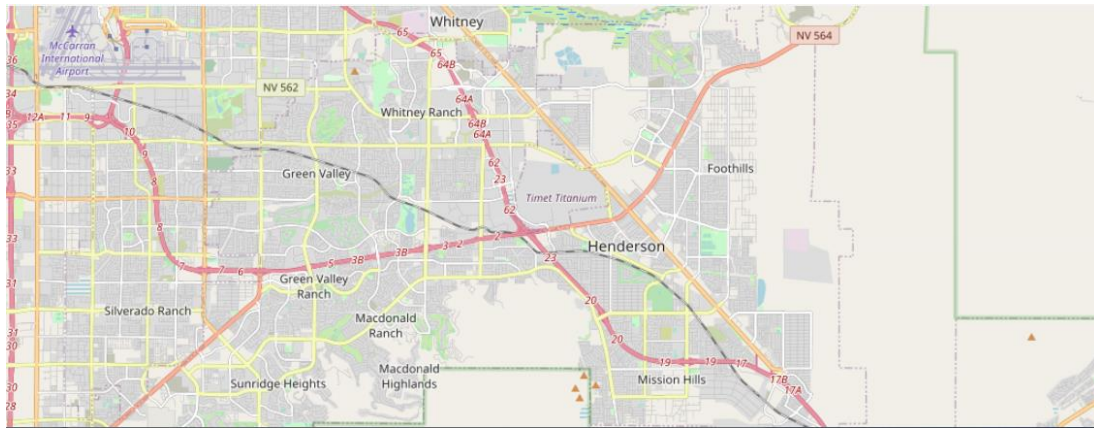
Those cities are the most populous in Nevada state as illustrated:



To continues the explorations of the Nevada states cities geocoder with OpenCage Geocoder are used to get coordinates of Nevada State

City	Population	State	Latitude	Longitude
Las Vegas	634,773	Nevada	36.167256	-115.148516
Henderson	300,116	Nevada	36.030113	-114.982619
Reno	246,500	Nevada	39.526121	-119.812658
North Las Vegas	241,369	Nevada	36.200584	-115.121584
Paradise	235,087	Nevada	36.115086	-115.173414
...
Paradise Valley	51	Nevada	41.493638	-117.534319
Bennett Springs	46	Nevada	37.370411	-80.037542
Oasis	38	Nevada	41.032618	-114.472131
Logan Creek	37	Nevada	37.611885	-115.392385
Gerlach and Nelson	34	Nevada	39.386330	-119.317007

The Foursquare have been used to the coordinates of neighborhood and venues available in different cities. The coordinates of interested city in this project; Henderson are the following: the Latitude and Longitude of Henderson is 36.0301134 and -114.9826194 respectively. From that data we can show the map of the Henderson city:



4. Results

After exploring the data, we got the different results that are considered to choose a good place to do business. According to the data provided, there are states that are security risky with high crimes rate.

4.1 Top 10 with high number of violent crimes

State	Violent crime Total
California	10685.49
Texas	6165.72
Missouri	3806.6
Florida	3457.74
Tennessee	3141.49
Ohio	3017.29
Arizona	2968.97
Nevada	2492.26
Louisiana	2148.22
Michigan	2056.67

4.2 Top 10 with high number of property crimes

State	Property crime Total
California	54086.78
Texas	36934.39
Arizona	21512.24
Florida	21265.32
Ohio	17914.6
Washington	12490.08
North Carolina	11203.57
Missouri	10585.03
Nevada	10248.18
Tennessee	10115.79

4.3 Top 10 with high number of arson crimes

State	Arson crime
California	504.1
Texas	175.22
Michigan	129.55
Ohio	109.1
Missouri	106.23
Arizona	86.32
Louisiana	83.32
New York	74.95
Florida	72.67
North Carolina	72.38

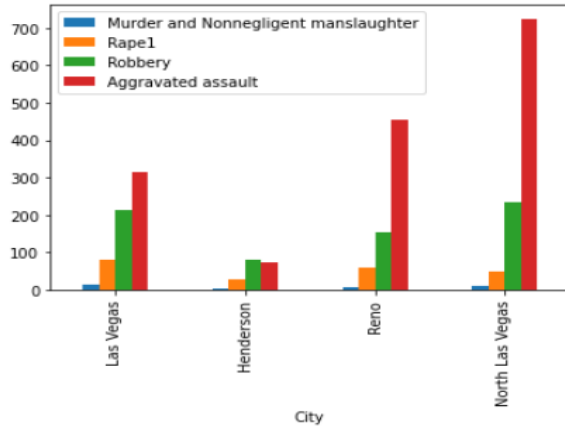
4.5 Security analysis in Nevada state

We can see that Nevada doesn't appear on 5 most states with violent and property neither arson crimes. That is the reason we are interested in this state as there low number of crimes. Let see the crime data in Nevada.

4.5.1 Violent crimes in Nevada city

City	Population	Murder and Nonnegligent manslaughter	Rape1	Robbery	Aggravated assault
Henderson	299285	3.34	28.74	80.19	72.84
Las Vegas	627244	12.60	79.64	211.15	315.50
North Las Vegas	242537	9.07	47.83	232.95	724.84
Reno	248531	7.64	57.14	153.70	455.07

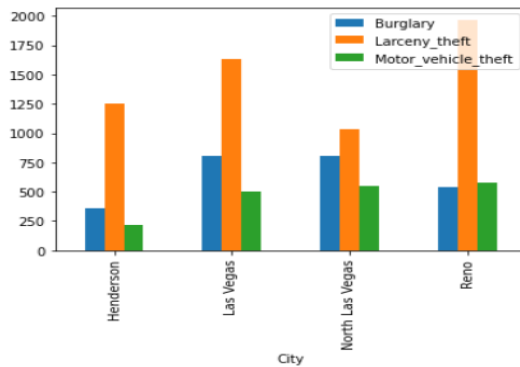
The figure bellow shows the comparison of presence of violent crimes in different cities.



4.5.2 Property crimes in Nevada

City	Population	Burglary	Larceny_theft	Motor_vehicle_theft
Henderson	299285	363.87	1254.99	214.18
Las Vegas	627244	805.17	1635.16	503.06
North Las Vegas	242537	804.00	1037.37	544.66
Reno	248531	541.98	1967.56	576.19

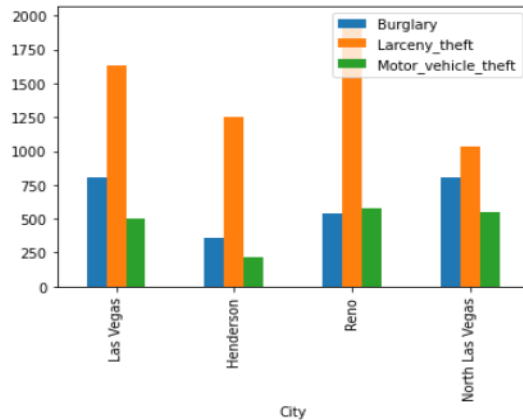
Different types of property crimes are shown in the figure bellow:



4.5.3 Arson crime

From the table bellow you can see that Henderson is also the best city with the lowest arson crime rate

City	Population	Arson
Las Vegas	627244	5.59
Henderson	299285	7.02
Reno	248531	7.24
North Las Vegas	242537	4.54



The Security is the most important point to consider when doing business is set. In Nevada, the best city to do business is the city where the violent crime is too low. The Henderson city is the best city which minimum number of all types of violent crime as it is shown in the figure concerning the violent crime. The Henderson city is the second populous city in Nevada after Las Vegas with population of 299285 population. Burglary and Motor_vehicle_theft crimes are the lowest in that city compare to the other city. The Henderson has 41 neighborhoods, and the coordinates of those neighborhoods are:

4.6 Venues analysis in Henderson city

The Henderson city has 41 neighborhoods, and the coordinates of those neighborhoods are:

Henderson_Neighborhood	City	Latitude	Longitude
Anthem	Henderson	35.949582	-115.102098
Black Hills	Henderson	35.996879	-114.984676
Black Mountain	Henderson	35.402889	-82.687071
Calico Ridge	Henderson	36.081107	-114.950406
Canyons At Macdonald Ranch	Henderson	35.990972	-115.079561
Clark County	Henderson	36.010216	-114.945596
Cornerstone	Henderson	36.037199	-115.053003
Del Webb Anthem	Henderson	36.039700	-114.981940
Del Webb Macdonald Ranch	Henderson	36.039700	-114.981940
Foothills	Henderson	36.050286	-114.949043
Gibson Springs	Henderson	36.054564	-115.033188
Golf Village South	Henderson	36.308200	-78.406660
Green Valley	Henderson	36.049033	-115.082438

In Henderson city, the Whitney neighborhood is among the first populous neighborhood with 46.503 population. It is necessary to do business in the area where there is high number of populations in order to target different clients.

The restaurant project will be in Whitney neighborhood. The Whitney neighborhood latitude and longitude values are 36.0758075, -115.0702736. We need to know the venues that are in Whitney neighborhood to confirm the raison of the project in that place. There are 12 venues in the Whitney neighborhood.

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Whitney	36.075808	-115.070274	Ethel M Chocolate Factory & Cactus Garden	36.073898	-115.071755	Chocolate Shop
Whitney	36.075808	-115.070274	The Chicken Shack	36.072438	-115.073292	Fried Chicken Joint
Whitney	36.075808	-115.070274	Smith's	36.072539	-115.073512	Grocery Store
Whitney	36.075808	-115.070274	Lucky Joe's Saloon	36.075873	-115.073162	Bar
Whitney	36.075808	-115.070274	Baskin-Robbins	36.072025	-115.072288	Ice Cream Shop
Whitney	36.075808	-115.070274	Cactus Garden	36.073927	-115.071496	Garden
Whitney	36.075808	-115.070274	Bangkok Orchid	36.071661	-115.072040	Thai Restaurant
Whitney	36.075808	-115.070274	Silver State Archery	36.075808	-115.072513	Sporting Goods Shop
Whitney	36.075808	-115.070274	Big Gun Enterprises LLC	36.075808	-115.072513	Sporting Goods Shop
Whitney	36.075808	-115.070274	Save On Cannabis	36.077583	-115.068504	Business Service
Whitney	36.075808	-115.070274	Monkey Gym	36.077631	-115.072520	Gym
Whitney	36.075808	-115.070274	CosmoProf	36.072451	-115.067805	Cosmetics Shop

5. Result discussion

Based on the result, in the most population are in the cities where there is a presence of low criminality number. In Nevada city, Henderson is the city in Nevada that is more secure. Considering our result, the violent crimes are less comparing to the other cities. In that city most of neighborhoods has less than 12 venues category. We have analysed the restaurants available in 9 venues such as Whitney Ranch, Whitney, Southfork Water Street District Green Valley Ranch, Del Webb Anthem, Midway, Henderson and Valley View.

Whitney Ranch	Whitney	Southfork	Water Street District	Green Valley Ranch	Del Webb Anthem	Midway	Henderson	Valley View
Thai Restaurant	Thai Restaurant	Mexican Restaurant	Mexican Restaurant	Italian Restaurant	Mexican Restaurant	American Restaurant	Mexican Restaurant	Italian Restaurant
Fast Food Restaurant		Chinese Restaurant	American Restaurant	Seafood Restaurant	Chinese Restaurant	Asian Restaurant	Fast Food Restaurant	
American Restaurant		Fast Food Restaurant	Chinese Restaurant	American Restaurant	Fast Food Restaurant	Japanese Restaurant	Fast Food Restaurant	
		Mexican Restaurant	American Restaurant	American Restaurant	Mexican Restaurant	Asian Restaurant	American Restaurant	
		Chinese Restaurant	Mexican Restaurant	Italian Restaurant	Chinese Restaurant	Seafood Restaurant	Fast Food Restaurant	
		Fast Food Restaurant	American Restaurant	American Restaurant	Fast Food Restaurant			
		Fast Food Restaurant	Italian Restaurant	Restaurant	Fast Food Restaurant			
			Restaurant	Seafood Restaurant				

In those neighborhoods we explored we have seen that even if some neighborhoods have less population but have more than five restaurants. Example Whitney Ranch has 3 restaurants with 7.808 population, Whitney has 1 Tai restaurant category with 46.503 population, Southfork has 7 restaurants with 1,147 population, Water Street District has 8 restaurants with 4300 population, Green Valley Ranch has 8 restaurants with 17.758 population, Del Webb Anthem has 7 restaurants with 3.323 population, Midway has 5 restaurants with 2.775 population, Henderson has 5 restaurants with 469.229 population.

Our attention was focused on Whitney. The restaurant project in Whitney is highly possible and profitable as there is only one restaurant in the Whitney neighborhood which is most populous. Compare to the other neighborhoods, some neighborhoods have many different restaurants, yet they have small number of population.

We discovered that Henderson neighborhood, which is more populous in Henderson city, can be also a good place because of a smaller number of restaurant presence.

6. Conclusions

In this study, I analyzed the states in different cities in Nevada based on the data provided in report. I managed to check for security in different cities in Nevada based on population, types of crimes that can be obstacle for business like restaurant. Based on the data provided by foursquare I located different venues in different cities and that gave me image of the place and type of business that can be proposed and more interestingly to restaurant business. Nevada is a good place for business as it is more secure compare to the other city in United States considering the crimes rates presented. Restaurants are rare in Henderson especially in Whitney neighborhood where it is only Tai restaurant. I recommend Whitney because no problem of competitors, any type of restaurant is profitable. Henderson neighborhood is also a key point to set the business because is more populous, but it has small number of restaurants. I also recommend Henderson city for businessmen who want to do business in the place which is secure.