

Where to Open Gyms in KC

By Anushka Gawand

June 16, 2019

Introduction

Background

Kansas as a state currently has an obesity rate of 32% for adults. The percentage has increased over 10% in just the last 20 years according to www.stateofobesity.org. Obesity is also has many harmful impacts on your health such as hypertension, diabetes, heart disease and many more. To help tackle this problem of increasing obesity in KC and all of the USA my idea is to build gyms. Not just build more gyms, but strategically place gyms so that people will be more likely to attend and actually go exercise. So I am going to take KC metropolitan area as my starting point to help visualize and analyze where it would be most effective to build gyms.

Problem

Not having a gym close by might be the reason people don't workout. Having a gym in close proximity to your work or home will encourage people to go to the gym more. I know plenty of people who don't go to their gym very often just because it's a far drive from where they live/work. If a gym is inconveniently too far to go to obviously less people will attend. And placing even more gyms in areas where there are already lots of gyms won't do much good for the people not attending.

Interest

Doctors, personal trainers, physicals, athletes and people who care about their health and other people's health will be interested in this business problem. But I personally think ALL people should be concerned about living a healthier and more active lifestyle.

Data

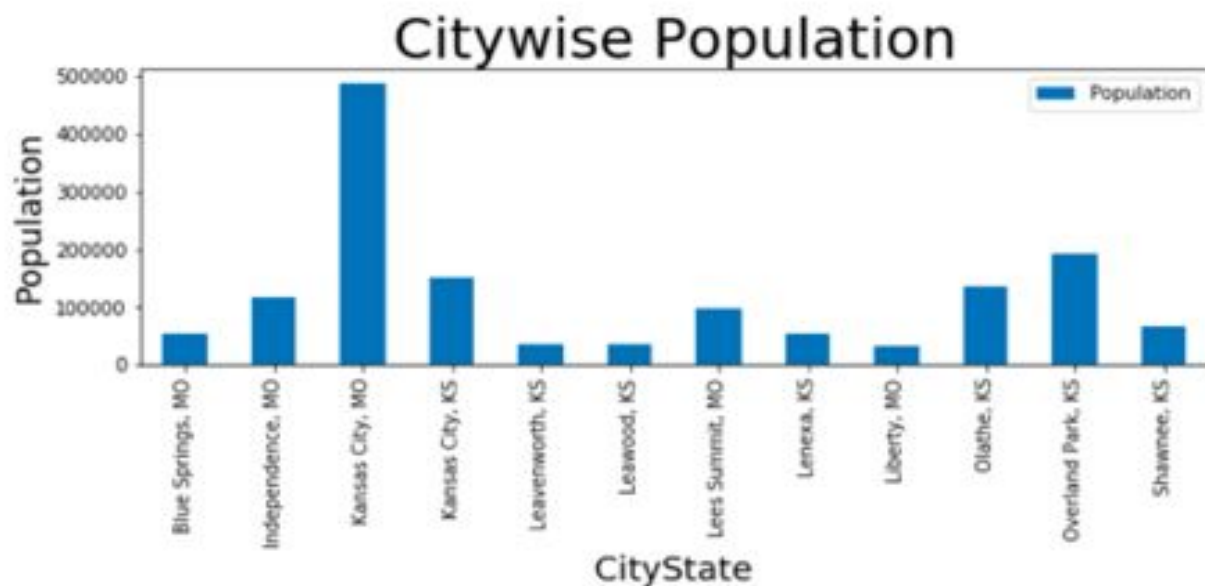
I collected various types of data like area and population from data.gov and using Google.

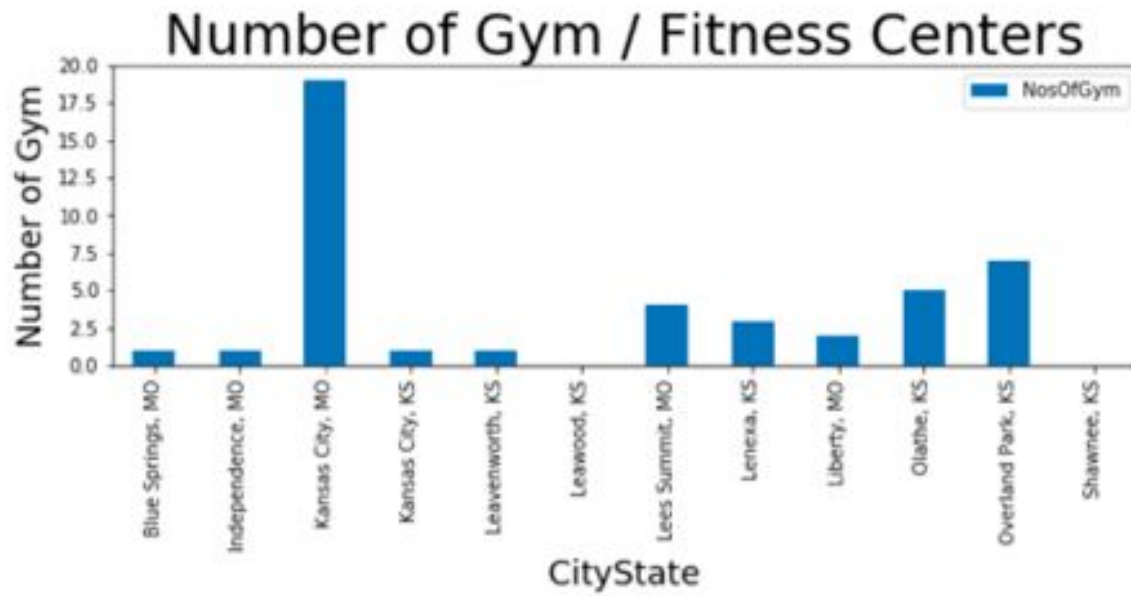
Number of Gym / Fitness Centers is collected using FourSquare API. Issue I faced with FourSquare API is it returned only 50 records maximum. So, it was not covering all the 12 Cities that fell under Kansas City Metropolitan Area. So, I collected this data by individually querying each City + State and getting number of Gym / Fitness Center in that City + State. I used City+State as index as Kansas City is part of both Kansas and Missouri state.

Kansas City Metropolitan area has a population of 2.4 million people. KC has an area of 7952 square miles and a population density of 260 people per square mile.

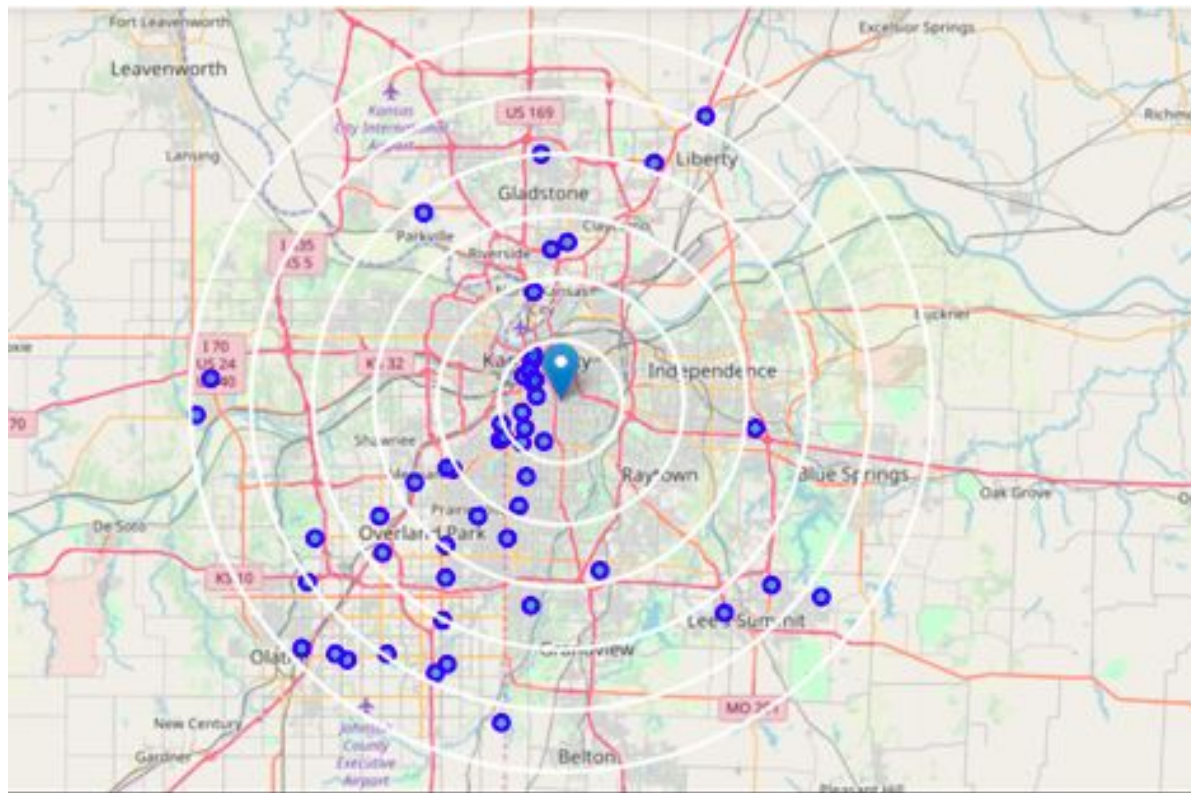
Methodology

The following 2 graphs show the populations of each of the cities and how many gyms there are in each of the 12 chosen cities.





The graph below shows gym distributions.



Gyms to Population Density

City	State	Area	Population	Density	Nos of Gym / Fitness Centers
Blue Springs	MO	22.44	54,945	2448.53	1
Independence	MO	78.25	117,306	1499.12	1
Kansas City	MO	319	488,943	1532.74	19
Kansas City	KS	128.4	152,938	1191.11	1
Leavenworth	KS	24.06	36,210	1504.99	1
Leawood	KS	15.16	34,659	2286.21	0
Lee's Summit	MO	65.39	97,290	1487.84	4
Lenexa	KS	34.45	53,553	1554.51	3
Liberty	MO	29.15	31,507	1080.86	2
Olathe	KS	60.42	137,472	2275.27	5
Overland Park	KS	75.37	191,278	2537.85	7
Shawnee	KS	42.86	65,513	1528.53	0
Notes:					
<i>Population is as per year 2017</i>					
<i>Density is number of people living in square mile</i>					
<i>Area are in square mile</i>					

As we can see from the above graphs Kansas City MO has the most gyms but all the other places have hardly any gyms despite some of the cities having population densities close to KCMO's. For example Leavensworth, Kansas has a population density of 1504, very close to KCMO's 1532 but Levansworth has only 1 gym where as KCMO has 19.

Results

By using the population density and the gym count for each city I calculated the Population Per Gym number. This number shows how many people will hypothetically be attending one gym. As you can see Kansas City Kansas has it the worst. With only 1 gym for every 152938 people. And Liveryity has it the best with 15752 at one gym. There is one only gym for every 152,938 people in Kansas City Kansas according to foursquare. That is a problem.

City	State	Population Per Gym
Kansas City	KS	152938
Independence	MO	117306
Blue Springs	MO	54945
Leavenworth	KS	36210
Olathe	KS	27494
Overland Park	KS	27325
Kansas City	MO	25734
Lee's Summit	MO	24323
Lenexa	KS	17851
Liberty	MO	15754

We used exploratory analysis and we concluded that the best business decision is to open gym/fitness centers in Leawood, KS and Shawnee, KS city since there are no gym/ fitness centers there. Open Gym/Fitness Center in Kansas City, KS as there is only one gym/fitness center compared to population and it will be good business decision. After that work your way down the above graph. Ideally every city should have a similar gym to population density ratio.

Discussion

I think some other things to consider would be the type of population that lives in the city. For example, if the population is mostly very elderly people then there might not be a need for as many gyms. So getting an age range of the population would be useful for further analysis.

Conclusion

In conclusion, we learned that the cities within KC metropolitan area have a disproportionate population density to gym number ratio. To help even out this ratio gyms must be built where the Population Per Gym number is high, and in cities where there are 0 gyms. Doing so will help the people of said cities by giving them easier access to gyms and will encourage them to go exercise more often.