

Most Proper Neighborhood to Operate a New Restaurant in San Francisco

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I. Introduction:

In this project, we want to choose the most proper neighborhood to open a new restaurant in San Francisco based on the venue volumes and crime rate of specific neighborhood.

II. Description and Background of the Problem:

The purpose of this project is to find the most proper neighborhood to open a new restaurant. The 'proper' here refers to a neighborhood with more restaurants round and less crime rate among all neighborhoods. The consideration here is:

- a) neighborhood with more restaurants means there're more clients and normally a recognized location for the Food & Beverage consumption in the city;
- b) neighborhood with less crime rate means that is safe place to operate business sustainably and better for owner.

Though in most cases the good neighborhood normally consists both of above two characteristics, we would like to substantiate it from quantative perspective in this project.

III. Description of the Data:

For assessment purpose, we download the data from website linkage (https://cocl.us/sanfran_crime_dataset) for further analysis. The database set consists following information:

- a) Neighborhood location; b) Crime category; c) Crime address;

We will use above data to analyze: i) Volume of venues in each neighborhood based on the data from foursquare.com database; ii) Crime volume rank of each neighborhood; iii)Choose most proper neighborhood for new restaurant.

IV. Detailed Process:

- a) We download statistic data from open database of San Francisco.

- b) Then sort out the crime cases volume rate ranked by neighborhoods to find out the safety rank of different neighborhood in San Francisco;

	Neighborhood	Count
1	SOUTHERN	28,445
2	NORTHERN	20,100
3	MISSION	19,503
4	CENTRAL	17,666
5	BAYVIEW	14,303
6	INGLESIDE	11,594
7	TARAVAL	11,325
8	TENDERLOIN	9,942
9	RICHMOND	8,922
10	PARK	8,699

- c) Based on info in the database, we utilize Foursquare.com to find out venue situation based on latitude/longitude of all neighborhoods;
- d) Then sort out above venue info to get most common venue types of each neighborhood to get full picture of restaurants status in each neighborhood.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	BAYVIEW	Farmers Market	Pizza Place	Deli / Bodega	Bakery	Coffee Shop	Mexican Restaurant	Furniture / Home Store	Flower Shop	Light Rail Station	Latin American Restaurant
1	CENTRAL	Italian Restaurant	Bakery	Pizza Place	Chinese Restaurant	Coffee Shop	Café	Dive Bar	Dim Sum Restaurant	Park	Deli / Bodega
2	INGLESIDE	Donut Shop	Italian Restaurant	Gas Station	Convenience Store	Coffee Shop	Park	Chinese Restaurant	Filipino Restaurant	Sports Bar	Supermarket
3	MISSION	Mexican Restaurant	Bakery	Bar	Coffee Shop	Ice Cream Shop	Music Venue	Cocktail Bar	Gift Shop	Café	Gym
4	NORTHERN	Sushi Restaurant	Grocery Store	Gift Shop	Wine Shop	Creperie	Shopping Mall	Ramen Restaurant	Thai Restaurant	Plaza	Escape Room
5	PARK	Thrift / Vintage Store	Boutique	Café	Shoe Store	Coffee Shop	Accessories Store	Gym	Gift Shop	Gastropub	Bookstore
6	RICHMOND	Chinese Restaurant	Bakery	Korean Restaurant	Grocery Store	Café	Ramen Restaurant	Japanese Curry Restaurant	Coffee Shop	Asian Restaurant	Sushi Restaurant
7	SOUTHERN	Coffee Shop	Vietnamese Restaurant	Pizza Place	Bakery	Bar	Marijuana Dispensary	Gym / Fitness Center	Wine Bar	Sandwich Place	Japanese Restaurant
8	TARAVAL	Chinese Restaurant	Park	Playground	Garden Center	Pool	Bus Station	Food Truck	Deli / Bodega	Music Venue	Pharmacy
9	TENDERLOIN	Coffee Shop	Theater	Vietnamese Restaurant	Cocktail Bar	Burger Joint	Hotel	Thai Restaurant	Sandwich Place	Music Venue	Art Gallery

V. Result

From above process we may notice that: a) the neighborhood with restaurants as 1st most common venue are: Richmond, Taraval, Northern, Mission and Central; b) the neighborhood safe ranking from worst to best (i.e. with least crime cases) is: 1 SOUTHERN; 2 NORTHERN; 3 MISSION; 4 CENTRAL; 5 BAYVIEW; 6 INGLESIDE; 7 TARAVAL; 8 TENDERLOIN; 9 RICHMOND; 10 PARK.

VI. Discussion

From above process we may know that: a) the 1st to 3rd most common venues for neighborhood of Richmond, Southern Central & Mission are restaurants or food related; b) among a) above, the neighborhood with higher crime cases ranking are Southern, Mission and Central (rank within top 5).

VII. Conclusion of the Project:

From above process we may notice that the neighborhood of 'Richmond' is of most proper location for a new restaurant based on the assumption of our exercise in this project considering it's with restaurants as most common venues and meanwhile with least crime rate.