

Choosing Restaurant Location in Canton of Geneva

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1 Introduction

1.1 Background

Switzerland is one of the world's most stable economies. Its policy of long-term monetary security and political stability has made Switzerland a safe haven for investors. This small but prosperous country has 26 cantons, among which the Canton of Geneva is relatively international canton with many international organizations and foreign companies, enjoying the third-largest GDP per capita of the country. So it could be an ideal place for investment.

1.2 Business Problem

The Canton of Geneva has 45 municipalities, with general population varying widely from one to another. The areas of municipalities may not be of huge difference, but the population of one municipality could be 10 times of another. Therefore, for investors who plan to open restaurants in one or more municipalities of Geneva, population is a factor needs to be considered.

This project is going to study the general relationship between the number of restaurants and the population in 45 municipalities of Canton Geneva, aiming to identify municipalities already having enough restaurants compared to their respective population size and municipalities having insufficient restaurants. The municipalities with insufficient restaurants in terms of population could be potential places to open new restaurants.

2 Data Acquisition and Cleaning

2.1 Data sources

Current restaurant data will be obtained by using the Foursquare API.

The location data, namely latitudes and longitudes of 45 municipalities will be obtained from the Geopy.

The population data will be fetched from the website:

<https://www.citypopulation.de/en/switzerland/geneve/>, which contains population number of each municipality from 1980 to 2019.

2.2 Data cleaning and processing

First, I use Pandas to read the population table from the above-mentioned website. Since the table contains population data of several decades from 1980, I only extract the data of 2019-12-31, the latest, and the name of each municipality, then create a dataframe as below.

.5]:

	Municipality	Population
0	Aire-la-Ville	1169
1	Anières	2387
2	Avully	1712
3	Avusy	1401
4	Bardonnex	2277
5	Bellevue	3380
6	Bernex	10244
7	Carouge	22621
8	Cartigny	986
9	Céligny	791
10	Chancy	1698
11	Chêne-Bougeries	12504
12	Chêne-Bourg	8674
13	Choulex	1188
14	Collex-Bossy	1709
15	Collonge-Bellerive	8299
16	Cologny	5598
17	Confignon	4631
18	Corsier (GE)	2186
19	Dardagny	1867
20	Genève [Geneva]	203951

Some names are not written in a standardized way, therefore need to be modified a little bit, in order to be used to get location data, as below.

	Municipality	Population	Latitude	Longitude
0	Genève	203951	46.201756	6.146601
1	Vernier	34958	46.213184	6.081576
2	Lancy	33377	46.183916	6.122405
3	Meyrin	25745	46.228323	6.071202
4	Carouge	22621	46.184637	6.144081
5	Onex	19058	46.183687	6.100108
6	Thônex	14182	46.188430	6.198386
7	Versoix	13411	46.276757	6.168958
8	Chêne-Bougeries	12504	46.196364	6.185407
9	Le Grand-Saconnex	12275	46.236332	6.126532
10	Veyrier	11887	46.166816	6.185681

Then the latitude and logitude data will be used in the Foursquare requests to get relevant venue information.