Capstone Project: The Battle of Neighbourhoods

Introduction: Business Understanding

In this project our aim is to find the best location to open a new restaurant in Istanbul. Our main stakeholder is the management of an international restaurant chain which is planning to open its first venue in the Turkish metropolis. The restaurant will target the high-income segment. Its menu will showcase some of the best examples of world’s gastronomy, including popular meals from French, Italian, Japanese, Chinese and Mexican cuisines.

Istanbul is Turkey’s largest city with a population of 15 million. It is the centre of economic activity with 31% of the country’s GDP coming from the city. Istanbul’s per capita income is US$ 18,000. It has a highly skewed distribution with a Gini index of 0.443. Istanbul has active nightlife and historic taverns, a signature characteristic of the city for centuries. Many of the city's most popular and upscale restaurants line the shores of the Bosphorus. Administratively, Istanbul consists of 39 boroughs (*ilçe*) and 782 neighbourhoods (*mahalle*).

The aim of the project is to propose best location (borough and neighbourhood) to be chosen by the international restaurant chain in a way that it will maximise the chances of commercial success.

Data

To address the business problem we will need the list of Istanbul’s boroughs and neighbourhoods along with their geographical coordinates. We will also need household income data and location data concerning the restaurants in Istanbul. Following data sources are used to extract the required information:

* List of Istanbul’s boroughs and their geographical coordinates is obtained from Ismail Baskın’s Github [repository](https://gist.github.com/ismailbaskin/2492196)
* The average household income data is acquired by using a daily [newspaper website](https://www.posta.com.tr/iste-istanbul-un-en-zengin-ilceleri-istanbul-da-ilcelere-gore-gelir-dagilimi-haber-fotograf-1359815)
* The number of restaurants and their type and location is received using Foursquare API
* The population data of the top candidate borough is obtained using a public [website](https://www.nufusu.com/ilce/besiktas_istanbul-nufusu), and the latitude and longitude values of the neighbourhoods are acquired by using the “Nominatim” geolocation library.