The Battle of Neighborhoods -IBM Capstone Project

Opening a new wine bar in Rome, Italy

Student:

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Course:

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# Background Discussion

Rome is the capital city and a special comune of Italy. With 2,879,728 residents, it is also the country's most populated commune. Vatican City (the smallest country in the world) is an independent country inside the city boundaries of Rome, the only existing example of a country within a city. Rome's history spans 28 centuries. While Roman mythology dates the founding of Rome at around 753 BC, the city successively became the capital of the Roman Kingdom, the Roman Republic and the Roman Empire, and is regarded by many as the first ever Imperial City and metropolis. After the fall of the Empire in the west, Rome slowly fell under the political control of the Papacy, which lasted until 1870. Beginning with the Renaissance, pursued a coherent architectural and urban renovation over four hundred years, aimed at making the city the artistic and cultural center of the world. For this reason, Rome became first one of the major centers of the Italian Renaissance, and then the birthplace of both the Baroque style and Neoclassicism. Famous artists, painters, sculptors and architects made Rome the center of their activity, creating masterpieces throughout the city.

In 2019, Rome was the 11th most visited city in the world, third most visited in the European Union, and the most popular tourist destination in Italy. Rome is also the seat of several specialized agencies of the United Nations, such as the Food and Agriculture Organization (FAO), the World Food Program (WFP) and the International Fund for Agricultural Development (IFAD). The city also hosts the headquarters of many international business companies such as telecommications, aerospace, energy, pharmaceutical, and finance. The presence of renowned international brands in the city have made Rome an important center of fashion and design, and the Cinecittà Studios have been the set of many Academy Award–winning movies.

# Business Problem Description

In this assignment, I will explore, segment, and cluster the neighborhoods in the city of Rome to solve a business problem. I am interested in finding out what is the best location to open a modern wine bar.

The project will benefit any business personnel or freelancer that is interested in opening or investing in a wine bar in Rome. This analysis will be the first step to point out the best area of the city with the biggest potential for success in opening that business activity.

# Methodology

## Data sources

For the Rome neighborhood data, a Wikipedia page exists that has all the information we need to explore and cluster the neighborhoods (in Italian Municipi) in Rome, the capital of Italy (https://it.wikipedia.org/wiki/Municipi\_di\_Roma).

I will scrape the Wikipedia page and wrangle the data, clean it, and then read it into a pandas dataframe so that it is in a structured format.

I will convert addresses into their equivalent latitude and longitude values using the geocoder library. I will use the Foursquare API (https://developer.foursquare.com/docs) to explore neighborhoods in Rome. I will use the explore function to get the most common venue categories in each neighborhood, check out their ratings, and the overall count of venues to understand the traffic.

I will then use this feature to group the neighborhoods into clusters. I will use the k-means clustering algorithm to complete this task.

Finally, I will use the Folium library to visualize the neighborhoods in Rome and their emerging clusters,and identify the best one to open a modern wine bar.

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| But I must explain to you how all this mistaken idea of denouncing pleasure and praising pain was born and I will give you a complete account of the system, and expound the actual teachings of the great explorer of the truth, the master-builder of human happiness. No one rejects, dislikes, or avoids pleasure itself. |  | Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can procure him some great pleasure. To take a trivial example, which of us ever undertakes laborious physical exercise, except to obtain some advantage from it? |

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