

Coffee Venues in Melbourne, Australia

Introduction

In Melbourne, coffee is almost a religion. It is a daily ritual in the lives of most of the resident population, and holds great importance from a social and lifestyle perspective. According to the *lazytrips* blog, in Oct 2019 Melbourne ranked 13th in the top cities in the world for coffee lovers¹:

“...the coffee scene in Melbourne is one of the best in the world and ...they really love their coffee. A lot. ...there are literally countless independent cafes all around the city, all of which are graced by a friendly atmosphere and that mouth-watering aroma we all know and love.”

If you were to visit every single suburb of Melbourne, it seems certain that you would find at least one cafe, coffee shop or coffee house, whichever term you prefer. However, some suburbs have more cafes than others, and the quality of the venues also differ between areas.

It is interesting to consider what factors about a suburb determine the number and quality of coffee shops it contains. Suburbs are located in different places geographically and are also diverse in their make up of residents. Data on suburbs is collected by the Australian Bureau of Statistics and is available on their website.

Consider someone opening a new coffee venue in Melbourne. A choice has to be made of where to locate this new business. This decision on location can have a significant impact on the profitability of the venue. Opening a new coffee house in an area that is already well served with existing cafes clearly has a greater risk of failure than choosing an area where the current coffee options are poor.

The objective of this study is to use suburb data and Foursquare venue data to develop a model for prediction of number and quality of coffee venues in Melbourne suburbs. Comparison of existing venue data with model predictions can then provide insight into which suburbs are under- or over-served with good coffee venues. This information is of value to the prospective business owner in determining where to locate a new coffee shop in order to have the greatest demand.

¹ <https://lazytrips.com/blog/21-of-the-worlds-best-cities-for-coffee-lovers>

Data

The data that will be used to determine the best location for a coffee venue will be as follows:

1. A list of Melbourne suburbs will be scraped from the wikipedia page https://en.wikipedia.org/wiki/List_of_Melbourne_suburbs
2. Geocoding of suburb addresses, and calculation of distances between points will be performed using the **geopy** library.
3. Australian Bureau of Statistics (ABS) census data from 2016 will be used to gather data on each suburb, such as population, number of families, number of dwellings, median weekly income, etc. This is available from the ABS website <https://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats> and will be used as the feature data for the models.
4. Foursquare data will be used to determine the number of coffee venues and their rating for each suburb. This is available from the Foursquare API and will be used as the label data for the models.

A subset of suburbs that are within a specified distance of the central business district (CBD) will be used for this project. For each suburb, its latitude and longitude and distance from the CBD will be determined using the **geopy** library.

Census data for each suburb will be scraped from the Australian Bureau of Statistics website. Coffee venue data for each suburb will be pulled from the Foursquare API. The number of venues in the coffee category will be recorded for each suburb, along with the mean rating of the venues.

An example data set for one suburb could be:

Suburb	Malvern
Latitude	-37.855
Longitude	145.035
Distance_CBD	12
Residents	10066
Families	2585
Dwellings	4539
Median_Income	2288
Number_venues	32
Mean_rating	7.5