

Determination of Potential Thai Restaurant Locations in Portland, Oregon

An assessment using k-means
clustering of neighborhoods

IBM Data Science Capstone Project

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Introduction

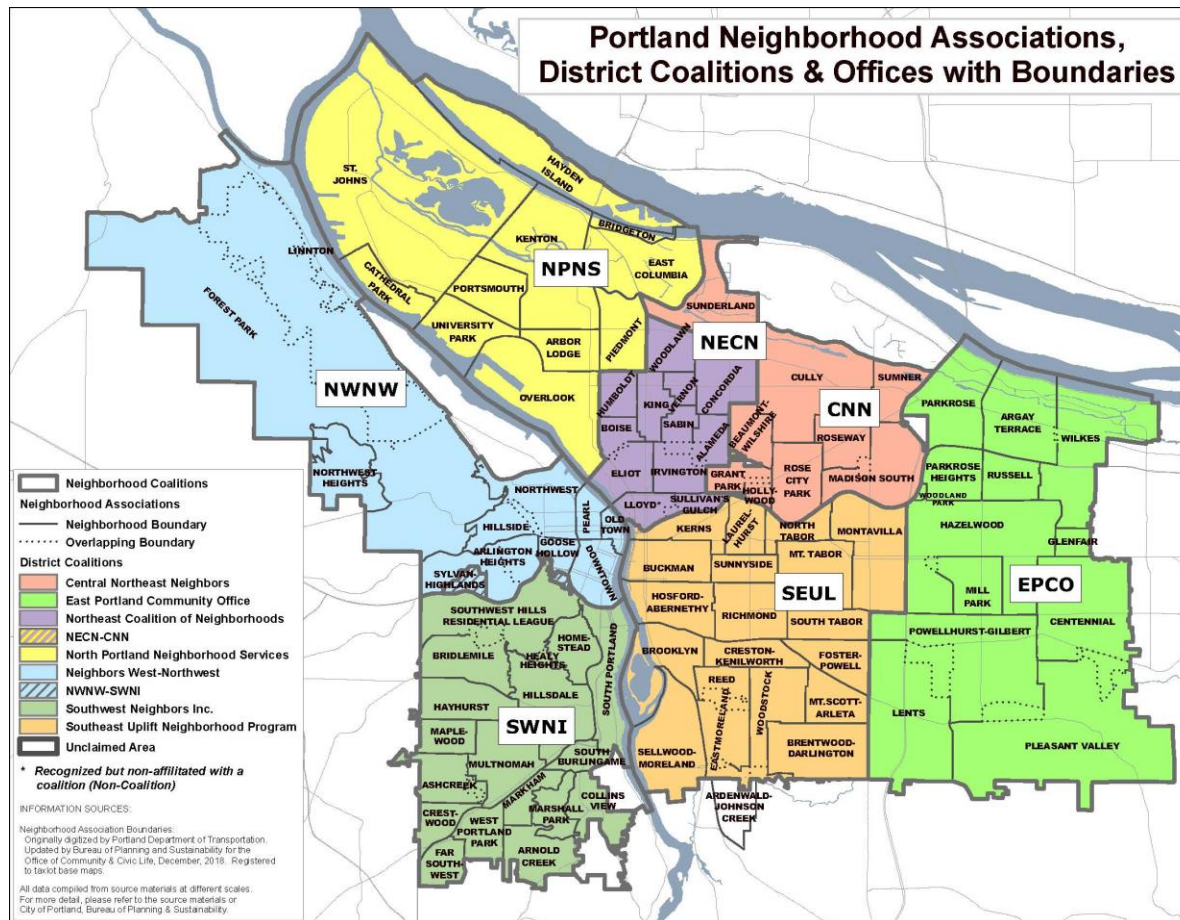
- Opening a new restaurant is often risky.
- Choosing a good location is a key factor for the success of the business.
- Location selection is not a straightforward problem to solve. Ideally, we want to find an area which maximizes access to potential customers while minimizing competition from similar restaurants.

The Problem

- In this presentation, I seek to propose some potential solutions to a hypothetical question: Which neighborhoods in Portland, Oregon would be best for a new Thai restaurant?

Background

- Portland is a city of about 650,000 people.
- The city is divided into 95 neighborhoods



Background

- There are many factors we could examine to help determine the best neighborhoods for a new Thai restaurant. Examples include:
 - Proximity to competition – How many Thai restaurants already exist in the neighborhood?
 - Proximity to complementary businesses – While being too near other Thai restaurants may be bad, being near other businesses (e.g. bars, shops, entertainment) is often a good thing.
 - Median household income – Low income neighborhoods will generally house fewer and less-frequent customers.
- This analysis will concentrate primarily on minimizing direct competition by finding neighborhoods which lack Thai restaurants, with some consideration to median income.

Data Description

- A list of neighborhoods and their GPS coordinates was obtained from https://en.wikipedia.org/wiki/Neighborhoods_of_Portland,_Oregon
- Median household income data were obtained from a [2018 report on Portland Real Estate](#)
- Data on existing Thai restaurant locations were obtained via the Foursquare API.