

USE LOCATION DATA TO LOOK FOR THE BEST LOCATION TO ESTABLISH A COFFEE SHOP

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INTRODUCTION

Nha Trang is a beautiful city of Vietnam and has a lot of visitors from all over the world. Owing to Vietnams Culture, There are many standard coffee shops. There are about 450 shops around the city. There is a high competition in the coffee business. Therefore, it is important that new stakeholders should study the area carefully.

BUSINESS PROBLEM

In this project we will try to find **an optimal location for a coffee shop**. Specifically, this report will be targeted to stakeholders interested in opening a Coffee shop in Nha Trang city, Vietnam. Since there are lots of coffee shops in Nha Trang we will try to detect

- locations that are not already crowded with coffee shops. Because our client already had a successful coffee shop,
- we are also particularly interested in areas that are similar with our client's coffee shop. We would also prefer locations as close to city center as possible , assuming that first two conditions are met.

We will use our data science powers to generate a few most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

DATA ACQUISITION

Based on definition of our problem, factors that will influence our decision are:

- number of existing coffee shops in the neighborhood (any type of coffee shop)
- similar venues between the location of the client's coffee shop and new potential locations
- distance of the neighborhood from city center

We decided to use regularly spaced grid of locations, centered around city center, to define our neighborhoods.

Following data sources will be needed to extract/generate the required information: Centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using:

- ✓ Google Maps API reverse geocoding

Number of coffee shops and location in every neighborhood will be obtained using

- ✓ Foursquare API
- ✓ coordinate of Nha Trang city center will be obtained using
- ✓ Google Maps API geocoding of well known Nha Trang location (Thap Tram Huong)