

IBM Applied Data Science Capstone Project

Open a new Shopping Mall in Chisinau, Moldova



Why do we need this?

Chisinau is a fast growing city with high potential. The city is Moldova's main industrial and commercial center, and is located in the middle of the country, on the river Bâc, a tributary of Dniester. According to the results of the 2014 census, the city proper had a population of 532,513, while the population of the Municipality of Chisinau (which includes the city itself and other nearby communities) was 662,836. Chişinău is the most economically prosperous locality in Moldova and its largest transportation hub. Historically, the city was home to fourteen factories in 1919. Chişinău is the financial and business capital of Moldova. Its GDP comprises about 60% of the national economy reached in 2012 the amount of 52 billion lei (US\$4 billion). Thus, the GDP per capita of Chisinau stood at 227% of the Moldova's average. Chisinau has the largest and most developed mass media sector in Moldova, and is home to several related companies ranging from leading television networks and radio stations to major newspapers. All national and international banks (15) have their headquarters located in Chisinau.

Business Problem

In Chisinau there are districts like Codru and Ciocana that have no malls situated nearby. Therefore people prefer to use local markets to go shopping, instead of travelling 5-10 km to the nearest big mall. Moreover, existing malls are not able to satisfy all buyers` needs because they are not big enough and are mostly crowded all the time. Thus, the decision is to analyze the city of Chisinau and to find the best place for a new mall to be built.

Data

In order to make an analysis for the specified problem we will need the following data:

- List of neighborhoods in Chisinau and their latitudes, longitudes and borders accordingly.
- Venues allocated within these neighborhoods obtained using foursquare API. (location, name, type, etc.)
- Chisinau land use (whether a specified area is of commercial use of urban use, etc.)
- Changes in land use 2014-2019 (to understand the city's growth)
- Population density heatmap

Sources of data and methods to extract them

This Wikipedia page (<https://en.wikipedia.org/wiki/Chi%C8%99in%C4%83u>) contains a list of neighbourhoods in Chisinau and general information about the city, with a total of 7 neighbourhoods. Land use, population density heat maps data will be obtained from https://eo4society.esa.int/eo_clinic/ (maps created by GeoVille and SIRS).

Moreover we will use Foursquare API to get venue data for venues in neighborhoods specified. Data cleaning, data wrangling and data visualization will be done mostly via matplotlib, folium and pandas packages in Jupyter Notebook.