An Investigation to find the most suitable place to open a Coffeshop in Ibaraki-Prefecture, Japan
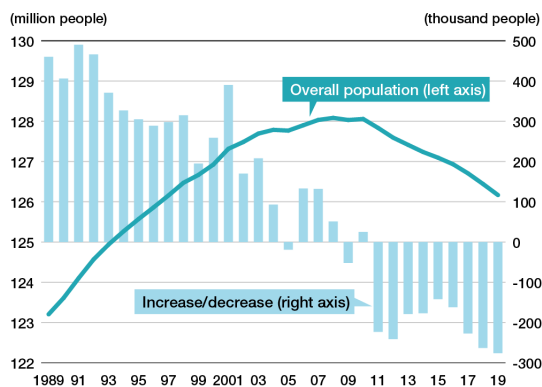
1. Introduction

1.1. Background

- Ibaraki Prefecture (Ibaraki-ken) is a prefecture of Japan located in the Kantō region, so it locates quite near from Tokyo. There're 2 train lines running through many citites in Ibaraki directly to Tokyo, those are Janan Railway's Joban-line & Tsukuba Express line. Comparing to expensive living cost in Tokyo. Ibaraki may be a good place to for people to live.

Population Change in Japan

Created by *Nippon.com* based on data from the population estimate of the Ministry of Internal Affairs and Communications (as of October 1, 2019).

- On the other hand, Japan's population began to decline in 2011 & the falling speed increasing year by year. This caused by the very low birth rate & aging in Japan. For specific city or area, unless many people come from other cities or foreigners come from overseas, this city may face many problems as lack of labors, decrease in taxt income causing bad public services. And also, it's risky & difficult to decide to open a new business in that kind of city or area.

1.2. Business problem

Writer of this report is thinking about opening a new Coffee shop in Ibaraki-prefecture. Considering about the location & population trending mentioned in above, he set a list of criteria to clarify which location should be the most suitable place to open a Coffeshop.

- The coffee shop should be located in city which in **top populated cities in Ibaraki**.
- The location should be **near Tokyo** so South of Ibaraki is preferrable.

- The city's *population should be stable or increasing* (many people coming to this city to cover the natural decrease cause by low birth rate & aging).
- The location should be *near some train stations*.
- There are *not too many competitors* in the area.

In this report, the writer demonstrates a data science approaching to find a place in Ibaraki-prefecture that meets all criterias above to open a new Coffee shop.

2. Data & Methodology Explanation

2.1. Data

- Open source data about Ibaraki-prefecture's Population:
  https://www.pref.ibaraki.jp/kikaku/tokei/fukyu/tokei/betsu/jinko/getsu/jinko2001.html
  (the website is in Japanese but in next sections, datasheets will be translated to English)
- Foursquare location data:
  https://foursquare.com/city-guide

2.2. Methodology

- Applying **"Request" & "BeautifulSoup"** to retrieve, wrangling, creating pandas datasheets from Ibaraki-prefecture's website. (Translation Indexes & Columns name to English)
- Visualizing population data using **Pythons Vizualization tools** to clarify the best appropriate city.
- Indentifying the train stations location (**longtitudes & latittudes**) in this city.
- Using **Foursquare API** & Foursquare location data to investigate Neighboorhoods in these stations, comparing to find which place has not too many competiors (type of avenue is coffee shop).