The Comparison of Two Areas

Paris and Tokyo

May 9th 2020

1. Introduction: Business Problem

    We will compare the kinds of venues in Paris and in Tokyo.

    Paris and Tokyo are both popular sightseeing spots. In this project we will try to find places related to venues. Specially, this report will be targeted to stakeholders interested in visiting or investing **venues** in Paris and in Tokyo.

    There are 20 Arrondissements in Paris. We will compare the number of venues and its kind in Paris by ward and we will find the 5 most popular venues.

    There are 23 special wards in Tokyo. We will compare the number of venues and its kind in Tokyo by ward. We will find the 5 most popular venues.

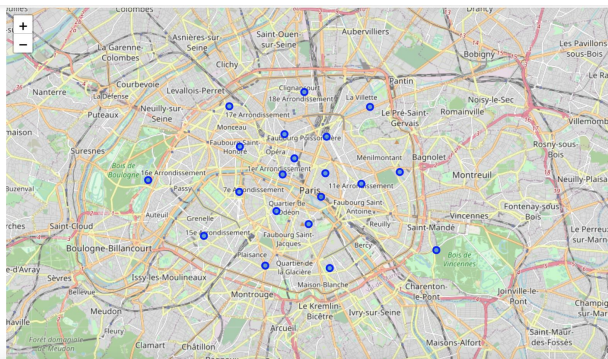   Then we will compare the kinds of both venues.

2. Data

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

    number of existing venus in the neighborhood (any type of venue)

    Following data sources will be needed to extract/generate the required information:

    ❏ centers of areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using **Google Maps API reverse geocoding**
    ❏ number of venues and their type and location in every arrondissement or ward will be obtained using **Foursquare API**
    ❏ coordinate of arrondissements of **Paris** will be obtained using **Paris Data Arrondissements** https://opendata.paris.fr/explore/dataset/arrondissements/table/?sort=-c_ar
    ❏ coordinate of **Tokyo** will be obtained using the below website(we will use the downloaded pdf) https://www.gsi.go.jp/KOKUJYOHO/CENTER/kendata/tokyo_heso.pdf
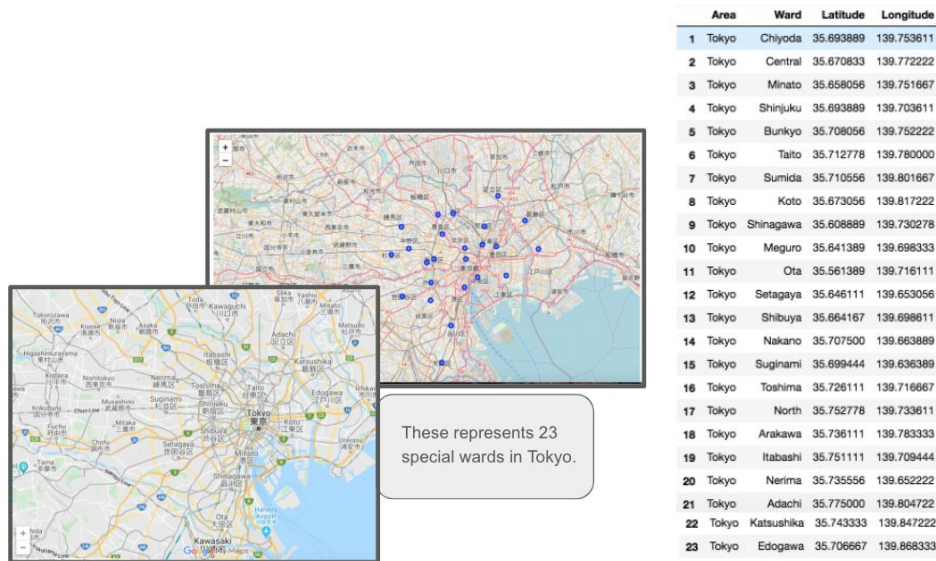
    ### 2.1. Paris

    This presents 20 arrondissements in Paris.

	City	ArrNo	Arrondissement	Latitude	Longitude
0	Paris	1er Ardt	Louvre	48.862563	2.336443
1	Paris	2ème Ardt	Bourse	48.868279	2.342803
2	Paris	17ème Ardt	Batignolles-Monceau	48.887327	2.306777
3	Paris	14ème Ardt	Observatoire	48.829245	2.326542
4	Paris	20ème Ardt	Ménilmontant	48.863461	2.401188
5	Paris	7ème Ardt	Palais-Bourbon	48.856174	2.312188
6	Paris	11ème Ardt	Popincourt	48.859059	2.380058
7	Paris	13ème Ardt	Gobelins	48.828388	2.362272
8	Paris	4ème Ardt	Hôtel-de-Ville	48.854341	2.357630
9	Paris	8ème Ardt	Élysée	48.872721	2.312554
10	Paris	18ème Ardt	Buttes-Montmartre	48.892569	2.348161
11	Paris	9ème Ardt	Opéra	48.877164	2.337458
12	Paris	19ème Ardt	Buttes-Chaumont	48.887076	2.384821
13	Paris	15ème Ardt	Vaugirard	48.840085	2.292826
14	Paris	3ème Ardt	Temple	48.862872	2.360001
15	Paris	5ème Ardt	Panthéon	48.844443	2.350715
16	Paris	6ème Ardt	Luxembourg	48.849130	2.332898
17	Paris	12ème Ardt	Reuilly	48.834974	2.421325
18	Paris	10ème Ardt	Entrepôt	48.876130	2.360728
19	Paris	16ème Ardt	Passy	48.860392	2.261971

2.2. Tokyo

These represents 23 special wards in Tokyo.

	Area	Ward	Latitude	Longitude
1	Tokyo	Chiyoda	35.693889	139.753611
2	Tokyo	Central	35.670833	139.772222
3	Tokyo	Minato	35.658056	139.751667
4	Tokyo	Shinjuku	35.693889	139.703611
5	Tokyo	Bunkyo	35.708056	139.752222
6	Tokyo	Taito	35.712778	139.780000
7	Tokyo	Sumida	35.710556	139.801667
8	Tokyo	Koto	35.673056	139.817222
9	Tokyo	Shinagawa	35.608889	139.730278
10	Tokyo	Meguro	35.641389	139.698333
11	Tokyo	Ota	35.561389	139.716111
12	Tokyo	Setagaya	35.646111	139.653056
13	Tokyo	Shibuya	35.664167	139.698611
14	Tokyo	Nakano	35.707500	139.663889
15	Tokyo	Suginami	35.699444	139.636389
16	Tokyo	Toshima	35.726111	139.716667
17	Tokyo	North	35.752778	139.733611
18	Tokyo	Arakawa	35.736111	139.783333
19	Tokyo	Itabashi	35.751111	139.709444
20	Tokyo	Nerima	35.735556	139.652222
21	Tokyo	Adachi	35.775000	139.804722
22	Tokyo	Katsushika	35.743333	139.847222
23	Tokyo	Edogawa	35.706667	139.868333

These represents 23 special wards in Tokyo.

3. Methodology

In this project we will direct our efforts on detecting areas of Paris and Tokyo where both areas are sightseeing spots. We will limit our analysis to area ~250m around each center of arrondissement or ward.

In first step we have collected the required data: location and type (category) of every venue within 250m from center.

Second step in our analysis will be calculation and exploration of 'venue' across different areas of Paris and Tokyo.

4. Analysis

We will perform some basic explanatory data analysis.

First, we will analyze each arrondissement and each ward.

Second let's count the number of venue in every area candidate.

There are the results of Paris top 5 venue in each arrondissement.

```
----Batignolles-Monceau----
1            Hotel  0.28
2  Japanese Restaurant  0.11
3           Bakery  0.11
4  Italian Restaurant  0.11
5            Plaza  0.11
```

```
----Buttes-Montmartre----
1             Bar  0.26
2  French Restaurant  0.13
3          Gastropub  0.04
4         Supermarket  0.04
5  Mediterranean Restaurant  0.04
```

```
----Hôtel-de-Ville----
1  French Restaurant  0.18
2  Italian Restaurant  0.05
3        Wine Bar  0.05
4      Coffee Shop  0.05
5          Hostel  0.05
```

```
----Ménilmontant----
1            Bakery  0.14
2  Latin American Restaurant 0.07
3           Bistro  0.07
4         Restaurant  0.07
5            Park  0.07
```

```
----Bourse----
1  French Restaurant  0.13
2      Salad Place  0.10
3          Bistro  0.07
4  Japanese Restaurant  0.03
5  Lebanese Restaurant  0.03
```

```
----Entrepôt----
1  French Restaurant  0.10
2      Coffee Shop  0.10
3          Bistro  0.10
4           Café  0.07
5           Hotel  0.07
```

```
----Louvre----
1            Plaza  0.27
2       Art Museum  0.18
3      Historic Site  0.18
4            Hotel  0.09
5  Italian Restaurant  0.09
```

```
----Observatoire----
1  French Restaurant  0.17
2      Supermarket  0.09
3          Bistro  0.09
4           Bakery  0.04
5         Multiplex  0.04
```

```
----Buttes-Chaumont----
1       Supermarket  0.2
2  Japanese Restaurant  0.1
3             Bar  0.1
4      Concert Hall   0.1
5  French Restaurant  0.1
```

```
----Gobelins----
1  French Restaurant  0.29
2            Park  0.14
3             Bar  0.14
4  Korean Restaurant  0.14
5  Theme Park Ride/Attraction 0.14
```

```
----Luxembourg----
1           Hotel  0.15
2     French Restaurant  0.12
3  Argentinian Restaurant 0.04
4         Boutique  0.04
5            Plaza  0.04
```

```
----Opéra----
1  French Restaurant  0.18
2           Bakery  0.09
3  Japanese Restaurant 0.06
4             Bar  0.06
5           Bistro  0.06
```

```
----Palais-Bourbon----              ----Popincourt----               ----Élysée----
1    History Museum  0.20     1   French Restaurant  0.15     1   French Restaurant  0.22
2  French Restaurant  0.13    2            Hotel  0.12        2  Italian Restaurant  0.07
3     Historic Site  0.13     3  Italian Restaurant  0.09     3            Hotel  0.07
4            Hotel  0.13      4   Sandwich Place  0.06        4             Bar  0.05
5            Café  0.07       5            Café  0.06         5      Salad Place  0.05

----Panthéon----                    ----Temple----
1  French Restaurant  0.25     1         Hotel  0.10
2             Bar  0.11        2          Café  0.07
3        Creperie  0.05        3  Sandwich Place  0.07
4           Hotel  0.05        4    Burger Joint  0.07
5          Bakery  0.05        5     Art Gallery  0.07

----Passy----                       ----Vaugirard----
1             Park  1.0         1             Gym  0.2
2  Argentinian Restaurant 0.0   2  Indian Restaurant  0.2
3      Art Gallery  0.0         3  French Restaurant  0.2
4  Peruvian Restaurant  0.0     4          Bakery  0.2
5  Persian Restaurant  0.0      5  Italian Restaurant  0.2
```

There are the results of Tokyo top 5 venue in each ward.

```
----Adachi----                      ----Central----                  ----Itabashi----              ----Meguro----
1   Ramen Restaurant  0.19    1  Japanese Restaurant  0.18   1            Park  0.21       1  Convenience Store  0.14
2  Convenience Store  0.11    2  Convenience Store  0.18     2  Chinese Restaurant  0.14   2  Donburi Restaurant  0.11
3  Japanese Restaurant  0.06  3             ATM  0.05        3  Italian Restaurant  0.07   3  Japanese Restaurant  0.11
4          Sake Bar  0.06     4     Historic Site  0.05      4  Convenience Store  0.07    4  Italian Restaurant  0.07
5         Drugstore  0.04     5   Ramen Restaurant  0.05     5      Grocery Store  0.07    5          BBQ Joint  0.07

----Arakawa----                     ----Chiyoda----                  ----Katsushika----            ----Minato----
1  Convenience Store  0.36    1    Scenic Lookout  0.10      1         Bus Stop  0.14     1  Japanese Restaurant  0.10
2            Park  0.18       2       Coffee Shop  0.07      2    Intersection  0.07       2  Italian Restaurant  0.10
3           Trail  0.09       3  Japanese Restaurant  0.07   3           Diner  0.07       3          Bakery  0.05
4        Pharmacy  0.09       4  Chinese Restaurant  0.07    4      Restaurant  0.07       4  Kaiseki Restaurant  0.05
5  Ramen Restaurant  0.09     5            Café  0.07        5            Park  0.07       5  French Restaurant  0.05

----Bunkyo----                      ----Edogawa----                  ----Koto----                  ----Nakano----
0             Bar  0.16       1      Supermarket  0.33        1  French Restaurant  0.12    1            Café  0.13
1        Sake Bar  0.07       2  Convenience Store  0.17      2         Brewery  0.08       2  Ramen Restaurant  0.07
2        Rock Club  0.05      3          Bakery  0.17         3  Convenience Store  0.08    3        Boutique  0.07
3  Japanese Restaurant  0.04  4  Electronics Store  0.17      4     Noodle House  0.08       4     Concert Hall  0.04
4        BBQ Joint  0.04      5  Sushi Restaurant  0.17       5          Bakery  0.08        5        Nightclub  0.04

----Nerima----                      ----Setagaya----                 ----Shinjuku----              ----Taito----
1  Convenience Store  0.17     1         Sake Bar  0.15        1  Chinese Restaurant  0.09   1  Japanese Restaurant  0.06
2  Ramen Restaurant  0.14      2  Ramen Restaurant  0.12       2           Hotel  0.09       2       Coffee Shop  0.06
3           Café  0.10         3  Chinese Restaurant  0.12     3  Japanese Restaurant  0.09  3            Café  0.06
4         Sake Bar  0.03       4  Japanese Restaurant  0.08    4  Convenience Store  0.09    4  Ramen Restaurant  0.05
5          Bus Stop  0.03      5  Tonkatsu Restaurant  0.04    5     Historic Site  0.09     5  Convenience Store  0.05

----North----                       ----Shibuya----                  ----Suginami----              ----Toshima----
1  Yoshoku Restaurant  0.17    1  Convenience Store  0.2         1            Café  0.10      1  Ramen Restaurant  0.13
2   Malay Restaurant  0.17     2     Concert Hall  0.2           2  Ramen Restaurant  0.10    2        Steakhouse  0.07
3           Hotel  0.17        3            Park  0.2            3         Sake Bar  0.06      3  Japanese Restaurant  0.07
4        Gastropub  0.17       4   Unagi Restaurant  0.2         4  Japanese Restaurant  0.06  4  Chinese Restaurant  0.07
5 South Indian Restaurant 0.17 5  Fast Food Restaurant  0.2      5    Shopping Mall  0.05      5     Grocery Store  0.07

----Ota----                         ----Shinagawa----                ----Sumida----
1  Japanese Restaurant  0.14   1  Convenience Store  0.20      1  Italian Restaurant  0.12
2           Café  0.11         2        Steakhouse  0.07       2  Convenience Store  0.12
3  Italian Restaurant  0.06    3  Sushi Restaurant  0.07       3   Soba Restaurant  0.12
4      Fish Market  0.06        4  Donburi Restaurant  0.07     4  Chinese Restaurant  0.12
5          BBQ Joint  0.06     5         Sake Bar  0.07        5   Halal Restaurant  0.12
```

5. Results and Discussion

Our analysis shows that there is a great number of venues in Paris and in Tokyo.

After directing our attention to this more narrow area of interest covering (in radius of 250m from center in Paris and in radius of 250m from city hall in Tokyo).

As a result of analysis, we finds that there are many french restaurants in Paris although there are many convenience stores, Japanese restaurants, ramen restaurants in Japan. We see that two countries focus on cultural venues.

6. Conclusion

Purpose of this project was to compare two areas, Paris and Tokyo and to identify two areas close to center with the number of venus in order to aid stakeholders interested in visiting or investing venues in Paris and Tokyo.

We compared 20 arrondissements in Paris and 23 wards in Tokyo.

There are lot of convenience stores in Japan, and it would be interesting for investors in France to look at why they are successful in Japan.

It will be interesting to do a marketing research to get the key of success. There are lot of bakeries in France not in Japan, then it's still good idea for french bakers to go to Japan to start business.