

The Comparison of Two Areas

Capstone Project (Week 5)

May 8th 2020

Introduction: Business Problem

◆ 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.

Data

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

- * number of existing venues 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**

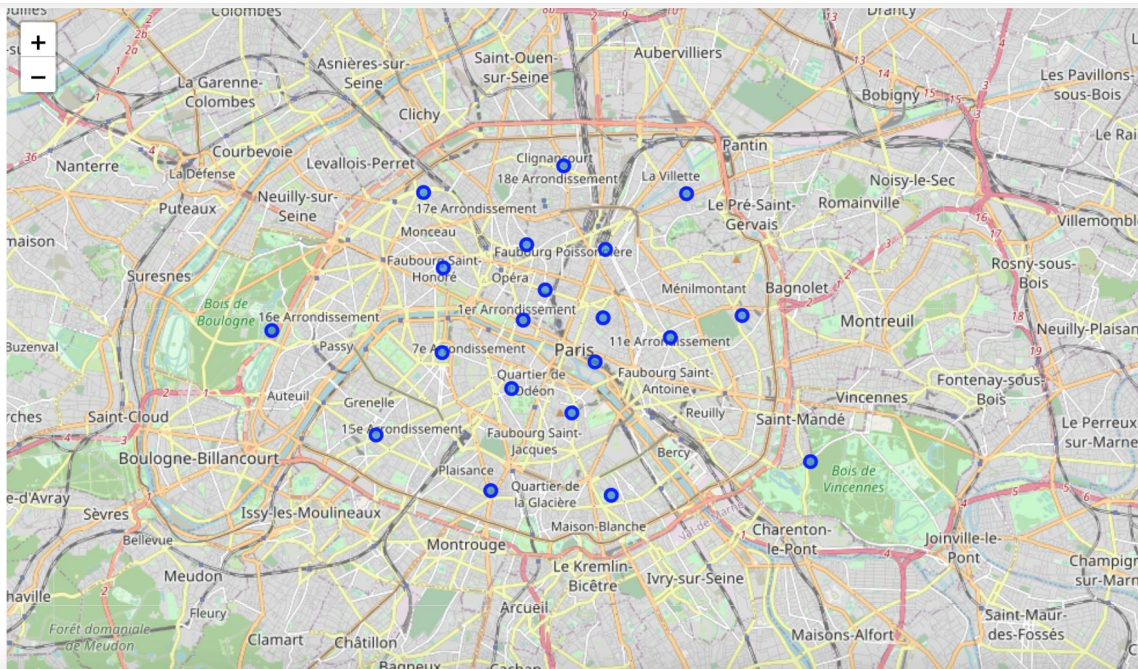
- * coordinate of arrondissements of **Paris** will be obtained using Paris Data Arrondissements

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

Data - 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

Data - 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

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.

Analysis

We will perform some basic explanatory data analysis.

First, we will analyze each arrondissement and each ward.

Second we will count the **number of venue in every area candidate**.

Analysis - Paris top 5 venue in each arrondissement 1/2

---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

Analysis - Paris top 5 venue in each arrondissement 2/2

----Palais-Bourbon----

- 1 History Museum 0.20
- 2 French Restaurant 0.13
- 3 Historic Site 0.13
- 4 Hotel 0.13
- 5 Café 0.07

----Popincourt----

- 1 French Restaurant 0.15
- 2 Hotel 0.12
- 3 Italian Restaurant 0.09
- 4 Sandwich Place 0.06
- 5 Café 0.06

----Élysée----

- 1 French Restaurant 0.22
- 2 Italian Restaurant 0.07
- 3 Hotel 0.07
- 4 Bar 0.05
- 5 Salad Place 0.05

----Panthéon----

- 1 French Restaurant 0.25
- 2 Bar 0.11
- 3 Creperie 0.05
- 4 Hotel 0.05
- 5 Bakery 0.05

----Temple----

- 1 Hotel 0.10
- 2 Café 0.07
- 3 Sandwich Place 0.07
- 4 Burger Joint 0.07
- 5 Art Gallery 0.07

----Passy----

- 1 Park 1.0
- 2 Argentinian Restaurant 0.0
- 3 Art Gallery 0.0
- 4 Peruvian Restaurant 0.0
- 5 Persian Restaurant 0.0

----Vaugirard----

- 1 Gym 0.2
- 2 Indian Restaurant 0.2
- 3 French Restaurant 0.2
- 4 Bakery 0.2
- 5 Italian Restaurant 0.2

Analysis - Tokyo top 5 venue in each ward 1/2

---Adachi---

- 1 Ramen Restaurant 0.19
- 2 Convenience Store 0.11
- 3 Japanese Restaurant 0.06
- 4 Sake Bar 0.06
- 5 Drugstore 0.04

---Central---

- 1 Japanese Restaurant 0.18
- 2 Convenience Store 0.18
- 3 ATM 0.05
- 4 Historic Site 0.05
- 5 Ramen Restaurant 0.05

---Itabashi---

- 1 Park 0.21
- 2 Chinese Restaurant 0.14
- 3 Italian Restaurant 0.07
- 4 Convenience Store 0.07
- 5 Grocery Store 0.07

---Meguro---

- 1 Convenience Store 0.14
- 2 Donburi Restaurant 0.11
- 3 Japanese Restaurant 0.11
- 4 Italian Restaurant 0.07
- 5 BBQ Joint 0.07

---Arakawa---

- 1 Convenience Store 0.36
- 2 Park 0.18
- 3 Trail 0.09
- 4 Pharmacy 0.09
- 5 Ramen Restaurant 0.09

---Chiyoda---

- 1 Scenic Lookout 0.10
- 2 Coffee Shop 0.07
- 3 Japanese Restaurant 0.07
- 4 Chinese Restaurant 0.07
- 5 Café 0.07

---Katsushika---

- 1 Bus Stop 0.14
- 2 Intersection 0.07
- 3 Diner 0.07
- 4 Restaurant 0.07
- 5 Park 0.07

---Minato---

- 1 Japanese Restaurant 0.10
- 2 Italian Restaurant 0.10
- 3 Bakery 0.05
- 4 Kaiseki Restaurant 0.05
- 5 French Restaurant 0.05

---Bunkyo---

- 0 Bar 0.16
- 1 Sake Bar 0.07
- 2 Rock Club 0.05
- 3 Japanese Restaurant 0.04
- 4 BBQ Joint 0.04

---Edogawa---

- 1 Supermarket 0.33
- 2 Convenience Store 0.17
- 3 Bakery 0.17
- 4 Electronics Store 0.17
- 5 Sushi Restaurant 0.17

---Koto---

- 1 French Restaurant 0.12
- 2 Brewery 0.08
- 3 Convenience Store 0.08
- 4 Noodle House 0.08
- 5 Bakery 0.08

---Nakano---

- 1 Café 0.13
- 2 Ramen Restaurant 0.07
- 3 Boutique 0.07
- 4 Concert Hall 0.04
- 5 Nightclub 0.04

Analysis - Tokyo top 5 venue in each ward 2/2

----Nerima----

- 1 Convenience Store 0.17
- 2 Ramen Restaurant 0.14
- 3 Café 0.10
- 4 Sake Bar 0.03
- 5 Bus Stop 0.03

----Setagaya----

- 1 Sake Bar 0.15
- 2 Ramen Restaurant 0.12
- 3 Chinese Restaurant 0.12
- 4 Japanese Restaurant 0.08
- 5 Tonkatsu Restaurant 0.04

----Shinjuku----

- 1 Chinese Restaurant 0.09
- 2 Hotel 0.09
- 3 Japanese Restaurant 0.09
- 4 Convenience Store 0.09
- 5 Historic Site 0.09

----Taito----

- 1 Japanese Restaurant 0.06
- 2 Coffee Shop 0.06
- 3 Café 0.06
- 4 Ramen Restaurant 0.05
- 5 Convenience Store 0.05

----North----

- 1 Yoshoku Restaurant 0.17
- 2 Malay Restaurant 0.17
- 3 Hotel 0.17
- 4 Gastropub 0.17
- 5 South Indian Restaurant 0.17

----Shibuya----

- 1 Convenience Store 0.2
- 2 Concert Hall 0.2
- 3 Park 0.2
- 4 Unagi Restaurant 0.2
- 5 Fast Food Restaurant 0.2

----Suginami----

- 1 Café 0.10
- 2 Ramen Restaurant 0.10
- 3 Sake Bar 0.06
- 4 Japanese Restaurant 0.06
- 5 Shopping Mall 0.05

----Toshima----

- 1 Ramen Restaurant 0.13
- 2 Steakhouse 0.07
- 3 Japanese Restaurant 0.07
- 4 Chinese Restaurant 0.07
- 5 Grocery Store 0.07

----Ota----

- 1 Japanese Restaurant 0.14
- 2 Café 0.11
- 3 Italian Restaurant 0.06
- 4 Fish Market 0.06
- 5 BBQ Joint 0.06

----Shinagawa----

- 1 Convenience Store 0.20
- 2 Steakhouse 0.07
- 3 Sushi Restaurant 0.07
- 4 Donburi Restaurant 0.07
- 5 Sake Bar 0.07

----Sumida----

- 1 Italian Restaurant 0.12
- 2 Convenience Store 0.12
- 3 Soba Restaurant 0.12
- 4 Chinese Restaurant 0.12
- 5 Halal Restaurant 0.12

Paris – Top 10 venues in each arrondissement 1/2

	Arrondissement	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Batignolles-Monceau	Hotel	Italian Restaurant	Plaza	Bakery	Japanese Restaurant	Diner	Bar	Grocery Store	Café	French Restaurant
1	Bourse	French Restaurant	Salad Place	Bistro	Women's Store	Dessert Shop	Office	Nightclub	Music Store	Miscellaneous Shop	Lebanese Restaurant
2	Buttes-Chaumont	Supermarket	French Restaurant	Japanese Restaurant	Concert Hall	Metro Station	Spa	Grocery Store	Burger Joint	Bar	Food Court
3	Buttes-Montmartre	Bar	French Restaurant	Mediterranean Restaurant	Park	Dessert Shop	Record Shop	Fast Food Restaurant	Café	Sandwich Place	Savoyard Restaurant
4	Entrepôt	Coffee Shop	Bistro	French Restaurant	Café	Hotel	Cosmetics Shop	Lounge	Creperie	Train Station	Museum
5	Gobelins	French Restaurant	Park	Bar	Theme Park Ride / Attraction	Chinese Restaurant	Korean Restaurant	Dessert Shop	Department Store	Diner	Food Court
6	Hôtel-de-Ville	French Restaurant	Italian Restaurant	Thai Restaurant	Wine Bar	Coffee Shop	Hostel	Arts & Crafts Store	Dessert Shop	Burgundian Restaurant	Candy Store
7	Louvre	Plaza	Art Museum	Historic Site	Italian Restaurant	Theater	Perfume Shop	Hotel	Hookah Bar	Fast Food Restaurant	Creperie
8	Luxembourg	Hotel	French Restaurant	Argentinian Restaurant	Grocery Store	New American Restaurant	Convenience Store	Ice Cream Shop	Pizza Place	Plaza	Clothing Store
9	Ménilmontant	Bakery	Italian Restaurant	Park	Movie Theater	Restaurant	Café	French Restaurant	Bookstore	Bistro	Supermarket
10	Observatoire	French Restaurant	Bistro	Supermarket	Italian Restaurant	Food & Drink Shop	Mobile Phone Shop	Fast Food Restaurant	Multiplex	Discount Store	Cosmetics Shop

Paris – Top 10 venues in each arrondissement 2/2

	Arrondissement	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
11	Opéra	French Restaurant	Bakery	Bistro	Bar	Japanese Restaurant	Gym / Fitness Center	Latin American Restaurant	Gourmet Shop	Lounge	Falafel Restaurant
12	Palais-Bourbon	History Museum	French Restaurant	Hotel	Historic Site	Food Court	Garden	Park	Café	Coffee Shop	Plaza
13	Panthéon	French Restaurant	Bar	Creperie	Hotel	Bakery	Sushi Restaurant	Plaza	Ice Cream Shop	Falafel Restaurant	Pool
14	Passy	Park	Women's Store	Insurance Office	Cultural Center	Cupcake Shop	Department Store	Dessert Shop	Diner	Discount Store	Ethiopian Restaurant
15	Popincourt	French Restaurant	Hotel	Italian Restaurant	Café	Sandwich Place	Bar	Asian Restaurant	Bed & Breakfast	Vietnamese Restaurant	Ethiopian Restaurant
16	Temple	Hotel	Art Gallery	Café	Sandwich Place	Burger Joint	Restaurant	Japanese Restaurant	French Restaurant	Moroccan Restaurant	Boutique
17	Vaugirard	Italian Restaurant	Bakery	Indian Restaurant	Gym	French Restaurant	Food & Drink Shop	Flower Shop	Fast Food Restaurant	Farmers Market	Ethiopian Restaurant
18	Élysée	French Restaurant	Italian Restaurant	Hotel	Bar	Café	Salad Place	Creperie	Coffee Shop	Cocktail Bar	Middle Eastern Restaurant

Tokyo – Top 10 venues in each ward 1/2

	Ward	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Adachi	Ramen Restaurant	Convenience Store	Sake Bar	Japanese Restaurant	Soba Restaurant	Grocery Store	Coffee Shop	Chinese Restaurant	Drugstore	Italian Restaurant
1	Arakawa	Convenience Store	Park	Ramen Restaurant	Hostel	Pizza Place	Pharmacy	Trail	Drugstore	Falafel Restaurant	Fabric Shop
2	Bunkyo	Bar	Sake Bar	Rock Club	Japanese Restaurant	Thai Restaurant	BBQ Joint	Tonkatsu Restaurant	Japanese Curry Restaurant	Bookstore	Soba Restaurant
3	Central	Convenience Store	Japanese Restaurant	Tempura Restaurant	Historic Site	Indian Restaurant	Gastropub	Food Court	Monument / Landmark	Ramen Restaurant	Coffee Shop
4	Chiyoda	Scenic Lookout	Japanese Restaurant	Café	Chinese Restaurant	Coffee Shop	Steakhouse	Fountain	Hotel Bar	Hotel	Park
5	Edogawa	Supermarket	Convenience Store	Bakery	Electronics Store	Sushi Restaurant	History Museum	Dumpling Restaurant	Fish Market	Fast Food Restaurant	Falafel Restaurant
6	Itabashi	Park	Chinese Restaurant	Grocery Store	Bus Stop	Convenience Store	Indian Restaurant	Intersection	Italian Restaurant	Concert Hall	Noodle House
7	Katsushika	Bus Stop	BBQ Joint	Diner	Breakfast Spot	Music Venue	Chinese Restaurant	Bakery	Park	Donburi Restaurant	Intersection
8	Koto	French Restaurant	Brewery	Convenience Store	Noodle House	Bakery	Theme Park	Event Space	Steakhouse	Beer Garden	Japanese Restaurant
9	Meguro	Convenience Store	Donburi Restaurant	Japanese Restaurant	BBQ Joint	Italian Restaurant	Ramen Restaurant	Coffee Shop	Cafeteria	Pizza Place	Steakhouse
10	Minato	Japanese Restaurant	Italian Restaurant	Yoshoku Restaurant	Bakery	Convenience Store	Chinese Restaurant	Sushi Restaurant	French Restaurant	Kaiseki Restaurant	Wine Bar
11	Nakano	Café	Boutique	Ramen Restaurant	Convenience Store	Gaming Cafe	Nightclub	Concert Hall	Cocktail Bar	Seafood Restaurant	Record Shop

Tokyo – Top 10 venues in each ward 2/2

	Ward	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
12	Nerima	Convenience Store	Ramen Restaurant	Café	Japanese Restaurant	Discount Store	Donburi Restaurant	Restaurant	Noodle House	Drugstore	Sake Bar
13	North	Yoshoku Restaurant	Bar	South Indian Restaurant	Malay Restaurant	Gastropub	Hotel	Historic Site	Fish Market	Dim Sum Restaurant	Diner
14	Ota	Japanese Restaurant	Café	Beer Bar	BBQ Joint	Chinese Restaurant	Coffee Shop	Italian Restaurant	Fish Market	Sushi Restaurant	Taiwanese Restaurant
15	Setagaya	Sake Bar	Ramen Restaurant	Chinese Restaurant	Japanese Restaurant	Tonkatsu Restaurant	Fabric Shop	Café	Liquor Store	Sushi Restaurant	Korean Restaurant
16	Shibuya	Park	Convenience Store	Concert Hall	Fast Food Restaurant	Unagi Restaurant	Yoshoku Restaurant	Fish Market	Falafel Restaurant	Fabric Shop	Event Space
17	Shinagawa	Convenience Store	Steakhouse	Sushi Restaurant	Discount Store	Donburi Restaurant	Coffee Shop	Sake Bar	Drugstore	Clothing Store	Bus Stop
18	Shinjuku	Historic Site	Hotel	Japanese Restaurant	Convenience Store	Chinese Restaurant	Steakhouse	BBQ Joint	Coffee Shop	French Restaurant	Diner
19	Suginami	Café	Ramen Restaurant	Japanese Restaurant	Sake Bar	Italian Restaurant	Shopping Mall	Udon Restaurant	BBQ Joint	Noodle House	Dim Sum Restaurant
20	Sumida	Ramen Restaurant	Italian Restaurant	Soba Restaurant	Chinese Restaurant	Sake Bar	Sauna / Steam Room	Halal Restaurant	Convenience Store	Diner	Discount Store
21	Taito	Japanese Restaurant	Café	Coffee Shop	Convenience Store	Concert Hall	Ramen Restaurant	Metro Station	Sushi Restaurant	Chinese Restaurant	Drugstore
22	Toshima	Ramen Restaurant	Chinese Restaurant	Convenience Store	Steakhouse	Grocery Store	Sake Bar	Japanese Restaurant	ATM	Coffee Shop	Café

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 find 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.

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 venues 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 a 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 a lot of bakeries in France not in Japan, then it's still a good idea for French bakers to go to Japan to start business.