

# Battle of Neighborhoods--Tokyo

Top 9 Sights in Tokyo



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## Introduction of Problem and Background

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- Today tourism is one of the most important parts of the economy.
- Too many amazing and exciting countries or cities to visit.
- Information about the destinations would be very helpful for travelers to make a good travel plan and
- Information about the destinations would help the travel agencies to attract customers.



# Data Description

- Top 9 sights in Tokyo

## Top sights

Based on traveler visits and local insights



Tokyo Skytree

4.4 ★★★★★ (54,585)

Huge tower with an observation deck



Sensō-ji

4.5 ★★★★★ (49,702)

Historic temple to the goddess of mercy



Tokyo Tower

4.4 ★★★★★ (48,278)

Well-known tower with observation areas



Meiji Jingu

4.6 ★★★★★ (23,743)

Famed Shinto shrine with a garden



Tokyo Disneyland

4.6 ★★★★★ (71,659)

Theme park with rides & shows



Odaiba

Waterfront sushi bars & a Ferris wheel



Ueno Park

4.3 ★★★★★ (18,413)

Large park with a zoo, a lake & museums



Imperial Palace

4.4 ★★★★★ (22,445)

Emperor's residence with gardens & tours



Shinjuku Gyoen National Garden

4.5 ★★★★★ (29,590)

Sizable park with gardens & a greenhouse



# Data Description

- Latitudes and longitudes of top 9 sights in Tokyo

**Table 1:** Top 9 Sights in Tokyo, Japan

| ID | name                           | latitude | longitude |
|----|--------------------------------|----------|-----------|
| 1  | Tokyo Skytree                  | 35.7101  | 139.811   |
| 2  | Senso-ji                       | 35.7148  | 139.797   |
| 3  | Tokyo Tower                    | 35.6586  | 139.745   |
| 4  | Meiji Jingu                    | 35.6764  | 139.699   |
| 5  | Tokyo Disneyland               | 35.6329  | 139.88    |
| 6  | Odaiba                         | 35.6206  | 139.781   |
| 7  | Ueno Park                      | 35.7155  | 139.774   |
| 8  | Imperial Palace                | 35.6852  | 139.753   |
| 9  | Shinjuku Gyoen National Garden | 35.6852  | 139.71    |



# Methodology and Results

- Top venues around the 9 sights from Foursquare:  
773 venues and 179 venue categories

|   | name          | sightLatitude | sightLongitude | Venue                                       | VenueLatitude | VenueLongitude | VenueCategory       |
|---|---------------|---------------|----------------|---|---------------|----------------|---------------------|
| 0 | Tokyo Skytree | 35.710063     | 139.8107       | Tokyo Skytree (東京スカイツリー)                    | 35.710054     | 139.810710     | Monument / Landmark |
| 1 | Tokyo Skytree | 35.710063     | 139.8107       | Kitano Ace (北野エース)                          | 35.710220     | 139.809799     | Grocery Store       |
| 2 | Tokyo Skytree | 35.710063     | 139.8107       | Sumida Aquarium (すみだ水族館)                    | 35.710046     | 139.809639     | Aquarium            |
| 3 | Tokyo Skytree | 35.710063     | 139.8107       | Tokyo Skytree Tembo Galleria (東京スカイツリー天望回廊) | 35.710132     | 139.810730     | Scenic Lookout      |
| 4 | Tokyo Skytree | 35.710063     | 139.8107       | Moomin House Cafe (ムーミンハウスカフェ)              | 35.710404     | 139.809349     | Café                |

- DataFrame of frequencies of venue categories

|   | name                           | ATM  | American Restaurant | Aquarium | Art Gallery | Art Museum | Arts & Crafts Store | Asian Restaurant | Auditorium | BBQ Joint | Bakery   | Bar      | Bath House | Bed & Breakfast | Beer Bar | Beer Garden | Beijing Restaurant | Bike Rental / Bike Share | Bike Shop | Bistro   | Boat or Ferry | Bookstore | Bot  |
|---|--------------------------------|------|---------------------|----------|-------------|------------|---------------------|------------------|------------|-----------|----------|----------|------------|-----------------|----------|-------------|--------------------|--------------------------|-----------|----------|---------------|-----------|------|
| 0 | Imperial Palace                | 0.00 | 0.000000            | 0.00     | 0.000000    | 0.066667   | 0.00                | 0.00             | 0.0000     | 0.000000  | 0.000000 | 0.000000 | 0.00       | 0.00            | 0.000000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0000        |           | 0.00 |
| 1 | Meiji Jingu                    | 0.00 | 0.000000            | 0.00     | 0.015152    | 0.000000   | 0.00                | 0.00             | 0.0000     | 0.030303  | 0.030303 | 0.030303 | 0.00       | 0.00            | 0.015152 | 0.00        | 0.00               | 0.015152                 | 0.015152  | 0.000000 | 0.0000        |           | 0.00 |
| 2 | Odaiba                         | 0.00 | 0.000000            | 0.00     | 0.000000    | 0.012500   | 0.00                | 0.00             | 0.0125     | 0.012500  | 0.000000 | 0.025000 | 0.00       | 0.00            | 0.000000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0125        |           | 0.00 |
| 3 | Senso-ji                       | 0.00 | 0.000000            | 0.00     | 0.000000    | 0.000000   | 0.01                | 0.00             | 0.0000     | 0.050000  | 0.000000 | 0.020000 | 0.01       | 0.01            | 0.000000 | 0.01        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0000        |           | 0.00 |
| 4 | Shinjuku Gyoen National Garden | 0.01 | 0.000000            | 0.00     | 0.010000    | 0.000000   | 0.00                | 0.00             | 0.0000     | 0.030000  | 0.000000 | 0.030000 | 0.00       | 0.00            | 0.020000 | 0.00        | 0.01               | 0.000000                 | 0.000000  | 0.010000 | 0.0000        |           | 0.01 |
| 5 | Tokyo Disneyland               | 0.00 | 0.020000            | 0.00     | 0.000000    | 0.000000   | 0.00                | 0.01             | 0.0000     | 0.000000  | 0.000000 | 0.010000 | 0.00       | 0.00            | 0.000000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0000        |           | 0.00 |
| 6 | Tokyo Skytree                  | 0.00 | 0.010000            | 0.01     | 0.000000    | 0.000000   | 0.01                | 0.00             | 0.0000     | 0.040000  | 0.010000 | 0.010000 | 0.02       | 0.00            | 0.000000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0000        |           | 0.00 |
| 7 | Tokyo Tower                    | 0.00 | 0.020619            | 0.00     | 0.000000    | 0.000000   | 0.00                | 0.00             | 0.0000     | 0.010309  | 0.030928 | 0.000000 | 0.00       | 0.00            | 0.000000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.010309 | 0.0000        |           | 0.00 |
| 8 | Ueno Park                      | 0.00 | 0.010000            | 0.00     | 0.010000    | 0.050000   | 0.00                | 0.00             | 0.0000     | 0.010000  | 0.000000 | 0.000000 | 0.00       | 0.01            | 0.010000 | 0.00        | 0.00               | 0.000000                 | 0.000000  | 0.000000 | 0.0000        |           | 0.01 |



# Methodology and Results

- 10 most common venues and 5 clusters

|   | name                           | latitude | longitude | ClusterLabel | 1st_MCV                      | 2nd_MCV            | 3rd_MCV             | 4th_MCV             | 5th_MCV             | 6th_MCV             | 7th_MCV                   | 8th_MCV             | 9th_MCV             | 10th_MCV           |
|---|--------------------------------|----------|-----------|--------------|------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------------|---------------------|---------------------|--------------------|
| 0 | Tokyo Skytree                  | 35.7101  | 139.811   | 1            | Convenience Store            | Café               | Ramen Restaurant    | BBQ Joint           | Scenic Lookout      | Japanese Restaurant | Coffee Shop               | Grocery Store       | Gift Shop           | Chinese Restaurant |
| 1 | Senso-ji                       | 35.7148  | 139.797   | 4            | Japanese Restaurant          | BBQ Joint          | Soba Restaurant     | Wagashi Place       | Café                | Coffee Shop         | Dessert Shop              | Unagi Restaurant    | Yoshoku Restaurant  | Hotel              |
| 2 | Tokyo Tower                    | 35.6586  | 139.745   | 0            | Chinese Restaurant           | Convenience Store  | Park                | Japanese Restaurant | Italian Restaurant  | Bakery              | Pizza Place               | Ramen Restaurant    | Steakhouse          | Grocery Store      |
| 3 | Meiji Jingu                    | 35.6764  | 139.699   | 4            | Café                         | Italian Restaurant | Convenience Store   | Japanese Restaurant | Rock Club           | Park                | Japanese Curry Restaurant | Indian Restaurant   | Udon Restaurant     | BBQ Joint          |
| 4 | Tokyo Disneyland               | 35.6329  | 139.88    | 4            | Theme Park Ride / Attraction | Theme Park         | Café                | Gift Shop           | Restaurant          | Hotel               | Snack Place               | Japanese Restaurant | Lounge              | Theme Restaurant   |
| 5 | Odaiba                         | 35.6206  | 139.781   | 2            | Coffee Shop                  | Plaza              | Convenience Store   | Exhibit             | Japanese Restaurant | Pier                | Gift Shop                 | Bar                 | Shopping Mall       | Discount Store     |
| 6 | Ueno Park                      | 35.7155  | 139.774   | 0            | Zoo Exhibit                  | Sake Bar           | History Museum      | Art Museum          | Wagashi Place       | Coffee Shop         | Chinese Restaurant        | Historic Site       | Japanese Restaurant | Museum             |
| 7 | Imperial Palace                | 35.6852  | 139.753   | 0            | Historic Site                | Art Museum         | Bridge              | Palace              | Library             | Track               | Plaza                     | Castle              | Garden              | Park               |
| 8 | Shinjuku Gyoen National Garden | 35.6852  | 139.71    | 3            | Café                         | Ramen Restaurant   | Japanese Restaurant | Garden              | Coffee Shop         | Bar                 | Burger Joint              | Indian Restaurant   | Theater             | Chinese Restaurant |



# Discussion

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- Tokyo SkyTree: Convenience stores, cafes, scenic lookout.
- Senso-ji: Japanese restaurant.
- Tokyo Tower: Chinese restaurant.
- Meiji Jingu: Cafés, Italian restaurants.
- Tokyo Disneyland: Theme parks, cafés, gift shops
- Odaiba: Coffee shops, plaza.
- Ueno Park: zoo, Sake bar, museums.
- Imperial Palace: Historic sites, museums, palaces.
- Shinjuku Gyoen National Park: Café, ramen restaurant, gardens.





## Discussion—A Travel Plan

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- 5 sights:
  - (1) Imperial Palace (0): historic sites, museums, palaces;
  - (2) Shinjuku Gyoen National Garden (3): Japanese garden;
  - (3) Senso-ji (4): Japanese food (Soba, Wagashi, Unagi);
  - (4) Tokyo Skytree (1): Scenic lookout;
  - (5) Odaiba (2): Shopping.



# Conclusion

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- Get top 9 sights in Tokyo from Google.
- Venues around these sights from Foursquare.
- 10 most common venues around each sight.
- Cluster the 9 sights into 5 groups by k-means
- A travel plan based on the analysis.