

Invest on the Asian restaurant in Canberra

1. Introduction

a. Description

In this document I would like to review the opportunity of opening a new Asian restaurant in Canberra city center (Australia) and recommend the best location.

b. Why Canberra

Canberra is the capital city of Australia. Founded following the federation of the colonies of Australia as the seat of government for the new nation, it is Australia's largest inland city and the eighth-largest city overall. The city is located at the northern end of the Australian Capital Territory; 280 km south-west of Sydney and 660 km north-east of Melbourne.

On 1 January 1901, federation of the colonies of Australia was achieved. Section 125 of the new Australian Constitution provided that land, situated in New South Wales and at least 160 km from Sydney, would be ceded to the new federal government. Following discussion and exploration of various areas within New South Wales, the Seat of Government Act 1908 was passed in 1908 which specified a capital in the Yass-Canberra region. The land was transferred to the Commonwealth by New South Wales in 1911, creating the Australian Capital Territory, two years prior to the capital city being founded and formally named as Canberra in 1913.

It is unusual among Australian cities, being an entirely planned city outside of any state, similar to Washington, D.C. in the United States or Brasília in Brazil. Following an international contest for the city's design, a blueprint by American architects Walter Burley Griffin and Marion Mahony Griffin was selected and construction commenced in 1913. The Griffins' plan featured geometric motifs such as circles, hexagons and triangles, and was centred on axes aligned with significant topographical landmarks in the Australian Capital Territory. The city's design was influenced by the garden city movement and incorporates significant areas of natural vegetation.

As the seat of the government of Australia, Canberra is home to many important institutions of the federal government, national monuments and museums. This includes Parliament House, the official residence of the monarch's representative the Governor-General, the High Court and numerous government departments and agencies. It is also the location of many social and cultural institutions of national significance such as the Australian War Memorial, the Australian National University, the Royal Australian Mint, the Australian Institute of Sport, the National Gallery, the

National Museum and the National Library. The city is also home to many important institutions of the Australian Defence Force including the Royal Military College Duntroon and the Australian Defence Force Academy. It also hosts the majority of foreign embassies in Australia as well as regional headquarters of many international organisations, not-for-profit groups, lobbying groups and professional associations.

As at June 2018 the population of Canberra was 420,960, having grown by 2.2% over the preceding 12 months. As the city has a high proportion of public servants, the Commonwealth Government contributes the largest percentage of gross territory product and is the largest single employer in Canberra, although not the majority employer. Compared to the national averages, the unemployment rate is lower and the average income higher; tertiary education levels are higher, while the population is younger.

Canberrans are relatively young, highly mobile and well educated. The median age is 35 years and only 12.7% of the population is aged over 65 years. Between 1996 and 2001, 61.9% of the population either moved to or from Canberra, which was the second highest mobility rate of any Australian capital city.[202] As at May 2017, 43% of ACT residents (25–64) had a level of educational attainment equal to at least a bachelor's degree, significantly higher than the national average of 31%.

Canberra is one of the highest average income in Australia

So as result make it attractive for me to do my research on this city.

c. Data description

To be able to provide the recommendation I have used the following data and sources

Income information

- Data.gov.au
- <https://www.abc.net.au/news/2019-12-30/are-you-one-of-the-average-australians-politicians-refer-to/11831700>
- https://en.wikipedia.org/wiki/Median_household_income_in_Australia_and_New_Zealand
- Australian Bureau of Statistics

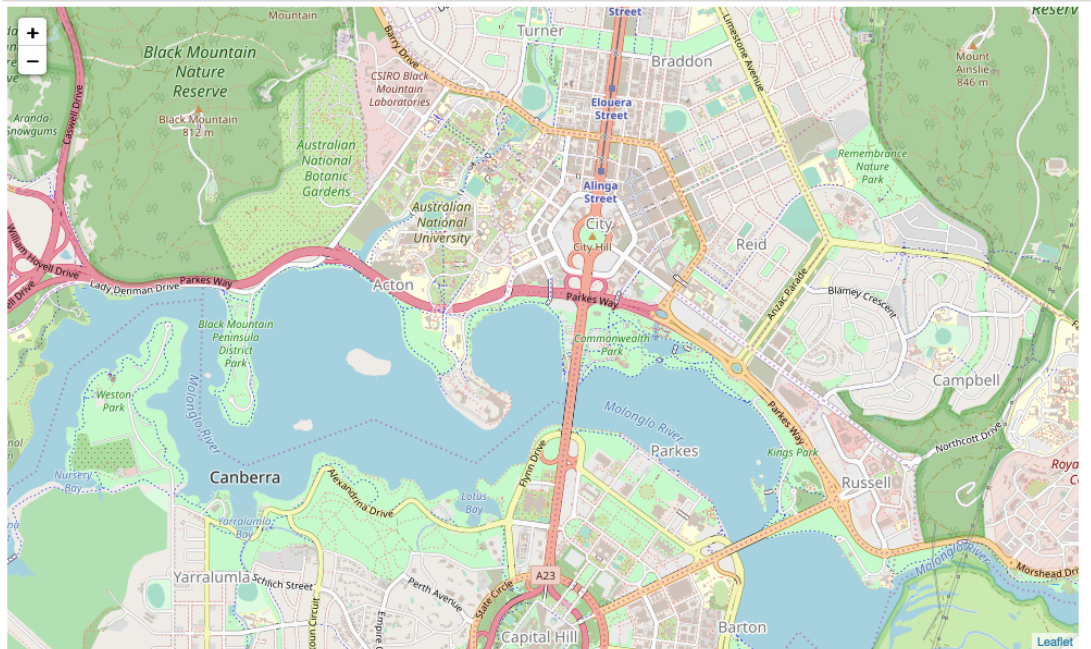
Restaurant location and information

- Forsquare API
- Data.gov.au
- <https://www.latlong.net/category/cities-14-15.html>

2. Methodology

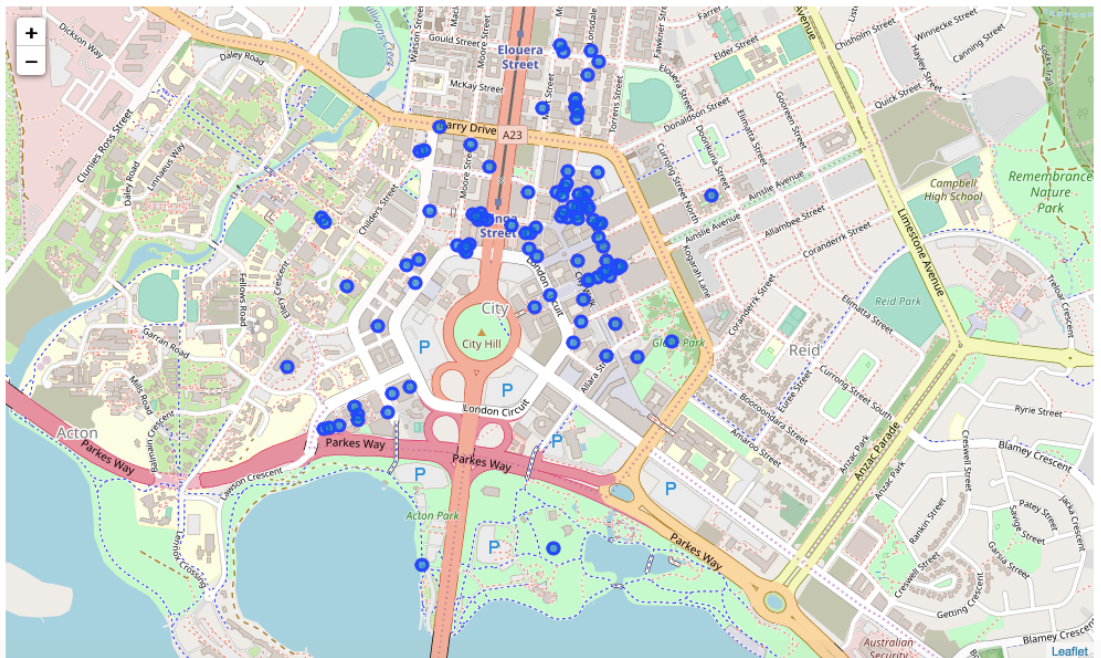
- a. GitHub as a repository to save all result and reports
- b. Folium library to visualize geographic details of Canberra
 - i. Canberra map without any venue

Out[366]:

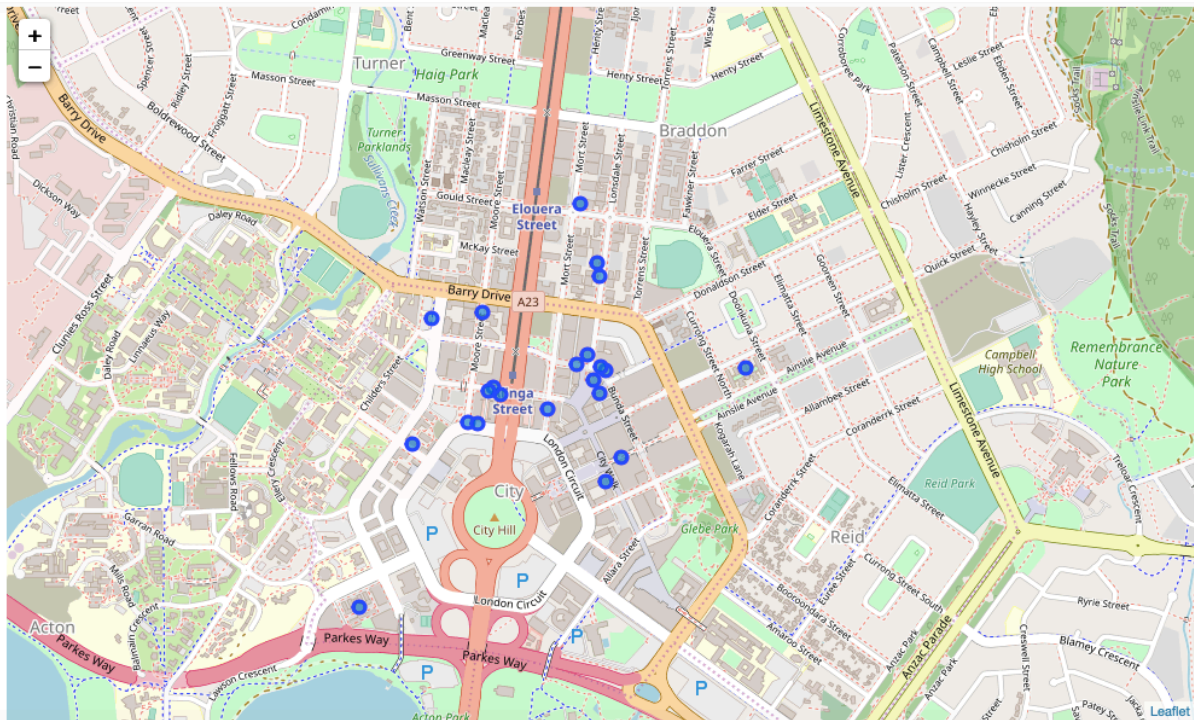


2. mark all venues on Canberra map

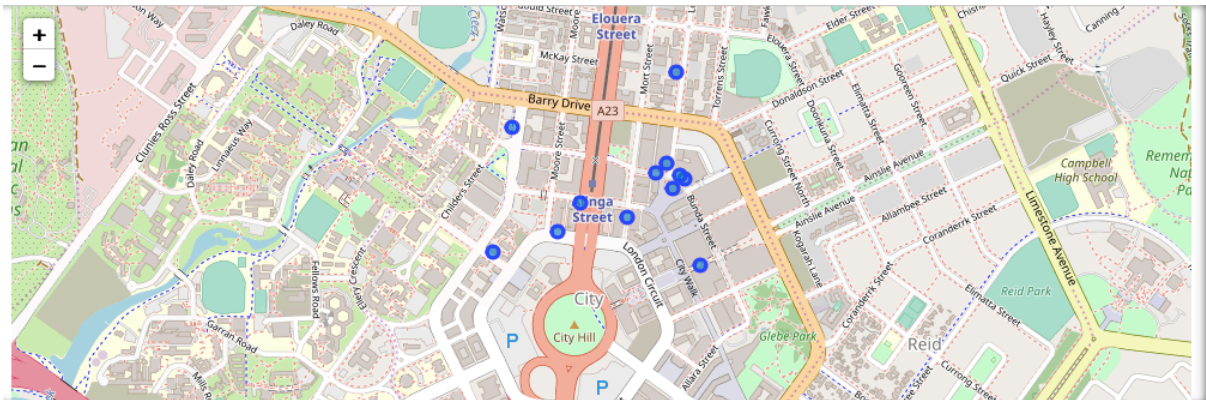
Out[370]:



3. Mark all restaurants in canberra map



4. Mark Asian restaurants in canberra map



- Geocoder to identify the Latitude and longitude for Canberra city center
- Foursquare API to explore the restaurant with the limit as **1000 venue** and the radius **1000 meter** for Canberra from their given latitude and longitude

informations. Here is a head of the list Venues name, category, latitude and longitude informations from Forsquare API.

c. Data collection

I extract data from Json file and filter wanted data to the correct format

```
{'meta': {'code': 200, 'requestId': '5e1e8211aba297001cfeb214'},
 'response': {'suggestedFilters': {'header': 'Tap to show:',
  'filters': [{'name': 'Open now', 'key': 'openNow'}]},
  'headerLocation': 'City',
  'headerFullLocation': 'City, Canberra',
  'headerLocationGranularity': 'neighborhood',
  'totalResults': 127,
  'suggestedBounds': {'ne': {'lat': -35.272267790999999,
    'lng': 149.14019122687955},
    'sw': {'lat': -35.290267809000014, 'lng': 149.11818237312048}
  },
  'groups': [{'type': 'Recommended Places',
    'name': 'recommended',
    'items': [{'reasons': {'count': 0,
      'items': [{'summary': 'This spot is popular',
        'type': 'general',
        'reasonName': 'globalInteractionReason'}]}],
    'venue': {'id': '529522d3498e02ea316adfb3',
      'name': 'The Cupping Room',
      'location': {'address': '1/13 University Ave.',
        'lat': -35.280471715528144,
        'lng': 149.12610648638585,
        'labeledLatLngs': [{'label': 'display',
          'lat': -35.280471715528144,
          'lng': 149.12610648638585}]},
      'distance': 293,
      'postalCode': '2601',
      'cc': 'AU',
      'neighborhood': 'City',
      'state': 'Australian Capital Territory',
      'country': 'Australia',
      'formattedAddress': ['1/13 University Ave.',
        'City ACT 2601',
        'Australia']}]}
```

	name	categories	lat	lng	distance	address
0	The Cupping Room	Coffee Shop	-35.280472	149.126106	293	1/13 University Ave.
1	Mezzalira Ristorante	Italian Restaurant	-35.279308	149.127748	254	West Row
2	Guild	Gaming Cafe	-35.279644	149.130832	234	Bailey's Corner, 150 London Cct
3	Impact Comics	Comic Shop	-35.278405	149.132024	409	16 Garema Pl
4	Harvest	Coffee Shop	-35.278223	149.126675	408	40 Marcus Clarke St

d. Data cleansing

In this case I need to identify all the venue in the radius of 1000 meters this list will incude all venues from sport centre to restaurant as following

	name	categories	lat	lng	distance	address
0	The Cupping Room	Coffee Shop	-35.280472	149.126106	293	1/13 University Ave.
1	Mezzalira Ristorante	Italian Restaurant	-35.279308	149.127748	254	West Row
2	Guild	Gaming Cafe	-35.279644	149.130832	234	Bailey's Corner, 150 London Cct
3	Impact Comics	Comic Shop	-35.278405	149.132024	409	16 Garema Pl
4	Harvest	Coffee Shop	-35.278223	149.126675	408	40 Marcus Clarke St

Extract all restaurants total number 22 to be used in my analysis.

Extract only Asian restaurants total number 12 to be used in my analysis.

In this process I grouped the restaurant and deleted unidentified information

- e. I did analysis on both options (all restaurants and Asian restaurant in area)
 - i. All restaurant as they will impact overall decision based on the total number of population

Total number of restaurants are 22

	name	categories	lat	lng	distance	address
1	Mezzalira Ristorante	Italian Restaurant	-35.279308	149.127748	254	West Row
13	Kinn Thai	Thai Restaurant	-35.277788	149.132608	496	148 Bunda St
20	Akiba	Restaurant	-35.277612	149.131588	461	40 Bunda Street
24	Iori Japanese Restaurant	Japanese Restaurant	-35.278899	149.130554	291	41 East Row
26	Temporada	Tapas Restaurant	-35.276089	149.128254	582	15 Moore St.
38	Banana Leaf Restaurant	Gluten-free Restaurant	-35.281020	149.132640	315	240-250 City Walk
44	Lazy Su	Asian Restaurant	-35.274680	149.132330	787	1/9 Lonsdale St
45	Blu Ginger	Indian Restaurant	-35.277346	149.131962	504	5 Genge Street
46	Lemon Grass Thai Restaurant	Thai Restaurant	-35.279319	149.128070	239	65 London Cct
47	Sage Restaurant	Molecular Gastronomy Restaurant	-35.277729	149.137592	859	Gorman House, Batman St.

- ii. Asian restaurant only as identify where are they located and how we can identify the density of restaurants

Total number of restaurants are 12

	name	categories	lat	lng	distance	address
13	Kinn Thai	Thai Restaurant	-35.277788	149.132608	496	148 Bunda St
20	Akiba	Restaurant	-35.277612	149.131588	461	40 Bunda Street
24	Iori Japanese Restaurant	Japanese Restaurant	-35.278899	149.130554	291	41 East Row
44	Lazy Su	Asian Restaurant	-35.274680	149.132330	787	1/9 Lonsdale St
45	Blu Ginger	Indian Restaurant	-35.277346	149.131962	504	5 Genge Street
46	Lemon Grass Thai Restaurant	Thai Restaurant	-35.279319	149.128070	239	65 London Cct
52	Bistro Nguyen's	Vietnamese Restaurant	-35.278483	149.128870	311	1/80 Alinga St
69	Uni Sushi Bar	Sushi Restaurant	-35.279910	149.125750	346	22-28 University Avenue
73	Hanaichi	Japanese Restaurant	-35.280317	149.133187	378	City Wlk
79	Courgette	Restaurant	-35.276297	149.126453	606	54 Marcus Clarke St
80	Chez Kimchi	Korean Restaurant	-35.278076	149.132183	447	Bunda St.
86	Sammy's Kitchen	Asian Restaurant	-35.277674	149.132431	496	North Quarter, Canberra Centre, Bunda St.

f. Analytical

I grouped the data and used K_Means to cluster the restaurant to 3 clusters to grouped the data to three groups to identify the density and locations of each restaurant

1. all resturants

	categories	name	lat	lng	distance	address	Cluster Labels
0	Asian Restaurant	2	2	2	2	2	1
1	Fast Food Restaurant	1	1	1	1	1	0
2	Gluten-free Restaurant	1	1	1	1	1	0
3	Indian Restaurant	1	1	1	1	1	0
4	Italian Restaurant	4	4	4	4	4	2
5	Japanese Restaurant	2	2	2	2	2	1
6	Korean Restaurant	1	1	1	1	1	0
7	Mediterranean Restaurant	1	1	1	1	1	0
8	Molecular Gastronomy Restaurant	1	1	1	1	1	0
9	Restaurant	2	2	2	2	2	1
10	Sushi Restaurant	1	1	1	1	1	0
11	Szechuan Restaurant	1	1	1	1	1	0
12	Tapas Restaurant	1	1	1	1	1	0
13	Thai Restaurant	2	2	2	2	2	1
14	Vietnamese Restaurant	1	1	1	1	1	0

2. asian restuarants

	categories	lat	lng	distance	Cluster Labels
0	Asian Restaurant	-35.276177	149.132380	641.5	2
1	Indian Restaurant	-35.277346	149.131962	504.0	0
2	Japanese Restaurant	-35.279608	149.131871	334.5	1
3	Korean Restaurant	-35.278076	149.132183	447.0	0
4	Restaurant	-35.276954	149.129021	533.5	0
5	Sushi Restaurant	-35.279910	149.125750	346.0	1
6	Thai Restaurant	-35.278553	149.130339	367.5	1
7	Vietnamese Restaurant	-35.278483	149.128870	311.0	1

Conclusion

As a result of the data output

Number of the restaurants

Population

Government present in city

Location of government department

Location of restaurants and number of restaurants

Average incomes

Canberra is a very good place to invest and open the restaurant the best place to open Asian restaurant is Braddon.

References:

- 1- Government data from Data.gov.au
- 2- ABC news (multiple resources)
- 3- Australian Bureau of Stat
- 4- Wikipedia
- 5- Google search