FEASIBILITY OF OPENING A RESTAURANT IN CANBERRA, AUSTRALIA

Applied Data Science Capstone Project

Contents

Introduction

Canberra is Australia's largest inland city and the capital of Australia. It has been dubbed as 'Start-up capital' and one of the world's best cities to live in.

To support start-ups, the Australian Capital Territory (ACT) government has introduced various grant opportunities, such as InnovationConnect, which provides grants of up to $50,000 to help Canberra-based businesses develop their products and services. Similarly, for up-and-coming entrepreneurs, there's InnovationACT, a business plan competition for university students, run by the Australian National University and the University of Canberra.

Having lived in Canberra and as a former student of Australian National University, I am interested in exploring the possibility of opening a take-away restaurant for offices and students/graduates of nearby universities.

Problem Statement

Feasibility of opening a restaurant (take away) around cluster of offices/workspaces in Canberra

Target Audience

1) Clusters of workplaces and emerging startups in the city
2) Students and recent university graduates
3) Feasibility of a restaurant for potential investors

Data Description and Structure

Step 1: List of suburbs (web-scrapping) - https://www.allhomes.com.au/news/cbr-the-canberra-suburbs-where-rents-have-risen-and-fallen-the-most-891373/

Step 2: Adding geographical coordinates to suburbs (through Google.com)

Step 3: Short-listing of suburbs (based on some criteria - such as median weekly rent, YoY % Change)

Step 4: Using foursquare location data (to explore the clusters/density of existing restaurants in the suburbs shortlisted) - https://foursquare.com/

Step 5: Data exploration, presentation, and visualization

Step 1: List of suburbs (web-scrapping)

Data for Suburbs of Canberra is scrapped by allhomes.com.au. I chose this source because this source gave additional information on median weekly rent Step 3: Short-listing of suburbs (based on some criteria - such as median weekly rent, YoY % Change)

Step 4: Using foursquare location data (to explore the clusters/density of existing restaurants in the suburbs shortlisted) - https://foursquare.com/

of each suburb. Moreover, this has provided percentage Year on Year (YoY) increase in weekly rent. Web scrapping was done using BeautifulSoup library. This step resulted in the following table:

	Suburb	Median Weekly Rent	YoY Change
0	Suburb	Median Weekly Rent	YoY Change
1	Dickson	$628	14.1%
2	Holder	$560	12%
3	Melba	$530	10.4%
4	Red Hill	$820	9.3%
5	Monash	$545	9%
6	Rivett	$523	8.9%
7	Hughes	$663	8.6%
8	Pearce	$550	7.8%
9	Giralang	$520	7.8%
10	Amaroo	$560	7.7%

Step 2: Adding geographical coordinates to suburbs

In the next step, geographical coordinates were googled and a separate dataframe was created.

	Suburb	Latitude	Longitude
0	Dickson	-35.25070	149.14054
1	Holder	-35.33709	149.04360
2	Melba	-35.20925	149.04956
3	Red Hill	-35.34078	149.13130
4	Monash	-35.41700	149.10000
5	Rivett	-35.34800	149.03800
6	Hughes	-35.33300	149.09400
7	Pearce	-35.36200	149.08500
8	Giralang	-35.21190	149.09720
9	Amaroo	-35.17140	149.12890

Finally, both tables were merged. So we have all information in one single table for analysis.

	Suburb	Median Weekly Rent	YoY Change	Latitude	Longitude
0	Dickson	$628	14.1%	-35.25070	149.14054
1	Holder	$560	12%	-35.33709	149.04360
2	Melba	$530	10.4%	-35.20925	149.04956
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Step 3 & 4: Short-listing of suburbs and Using foursquare data to explore neighbourhoods

In the next phase, a analysis of Suburbs was done to understand the weekly rent and how it has changed from the last year. This step resulted in shortlisting of three Suburbs. First, Giralang, because this suburb has the lowest weekly rent. Second, Amaroo, because this step has not only one of the lowest weekly rent, but also one of the lowest YoY increase in the rent. Finally, the 3rs suburb, Monash was shortlisted. This was shortlisted because it has the median weekly rental income and one of the lowest YoY increase.

To understand the demand of a new restaurant, the above suburbs were explored using FourSquare. This step gave us the following result.

Suburb: Giralang (lowest Median Rent)

	name	categories	lat	lng
0	7-Eleven	Convenience Store	-35.213929	149.095845
1	Airconditioning Canberra	Home Service	-35.219434	149.092734

Suburb: Amaroo (lowest YoY% increase)

	name	categories	lat	lng
0	7-Eleven	Convenience Store	-35.213929	149.095845
1	Airconditioning Canberra	Home Service	-35.219434	149.092734

Suburb: Monash (Median weekly rent & YoY% increase)

	name	categories	lat	lng
0	Common Grounds	Café	-35.413532	149.109627
1	Panda Chinese Restaurant	Chinese Restaurant	-35.416760	149.098640
2	SPAR Supermarket	Grocery Store	-35.416930	149.098930
3	Bus Stop (#1088)	Bus Stop	-35.417296	149.100437

Step 5: Discussion and Conclusion (Data exploration, presentation, and visualization)

Suburb: Giralang (lowest Median Rent)

- Very few existing restaurant – reflects low demand in the area

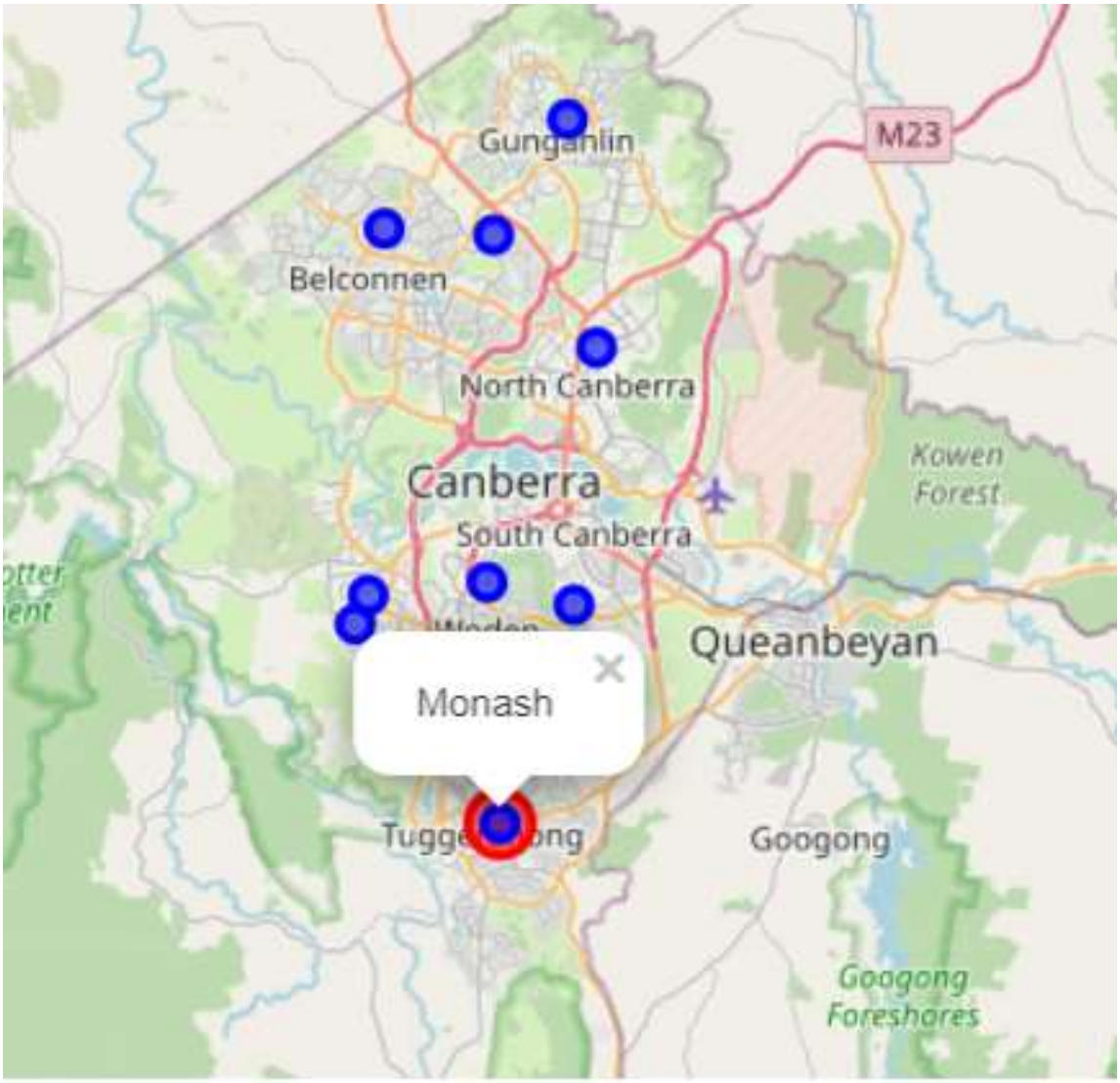
Suburb: Amaroo (lowest YoY% increase)

- Quite a few restaurants with variety of food options – reflects good demand in the area

Suburb: Monash (Median weekly rent & YoY% increase)

- Restaurant, café, grocery store – potentially good area for additional restaurant. There is also a bus stop, signally mobility options – Preferred Option

Map of Monash Suburb – The preferred option suggested



Please note: All the coding and various steps of data exploration, cleaning and visualization are available at GitHub: https://github.com/farhanak88/April2020/blob/master/Final%20Project.ipynb