Evaluate Metropolitan Adelaide for New Hotel Location

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Business Understanding

- Hotelier owns a one-hundred-year-old freehold heritage-listed hotel on a significant combined land holding of 6,833sqm. Located adjacent park with picturesque views of city skyline

- SWOT Analysis of existing hotel identified an opportunity to develop the site into a retirement village. Presale of the residential development has raised capital for the construction of a new purpose-built Hotel in a more suitable location.

- The new Hotel will utilise smart technology including

    - Cashless gaming, to reduce cash handling, eliminate hopper float and hard count labour

    - Self Service Cash Redemption Terminals to reduce labour, fraud and automate reconciliation

    - Cloud integrated POS to facilitate online food and alcohol order and delivery

    - General-Purpose EFT based reloadable reward card. Transfers from the prepaid card to competitive accounts can be restricted. Supported by Apple and Google Pay.
    Supported by EFTPOS capable cash register and EFT payment Gateway for Online food and Liquor orders.

Project Scope

To provide location in Metropolitan Adelaide for a new hotel based on the following criteria

    a.   High gaming revenue area

    b.   Competitor location, avoid locations where the competitor hotel has a presence

    c.   Located on a main arterial road with medium to high traffic volume

    d.   Located in proximity to shopping complex or transport hub

    e.   High population density

    f.   Provide Geodemographic classification of city amenities by applying a clustering algorithm

    g.   Customer demographics for customer insights and segmentation

Financial Projection
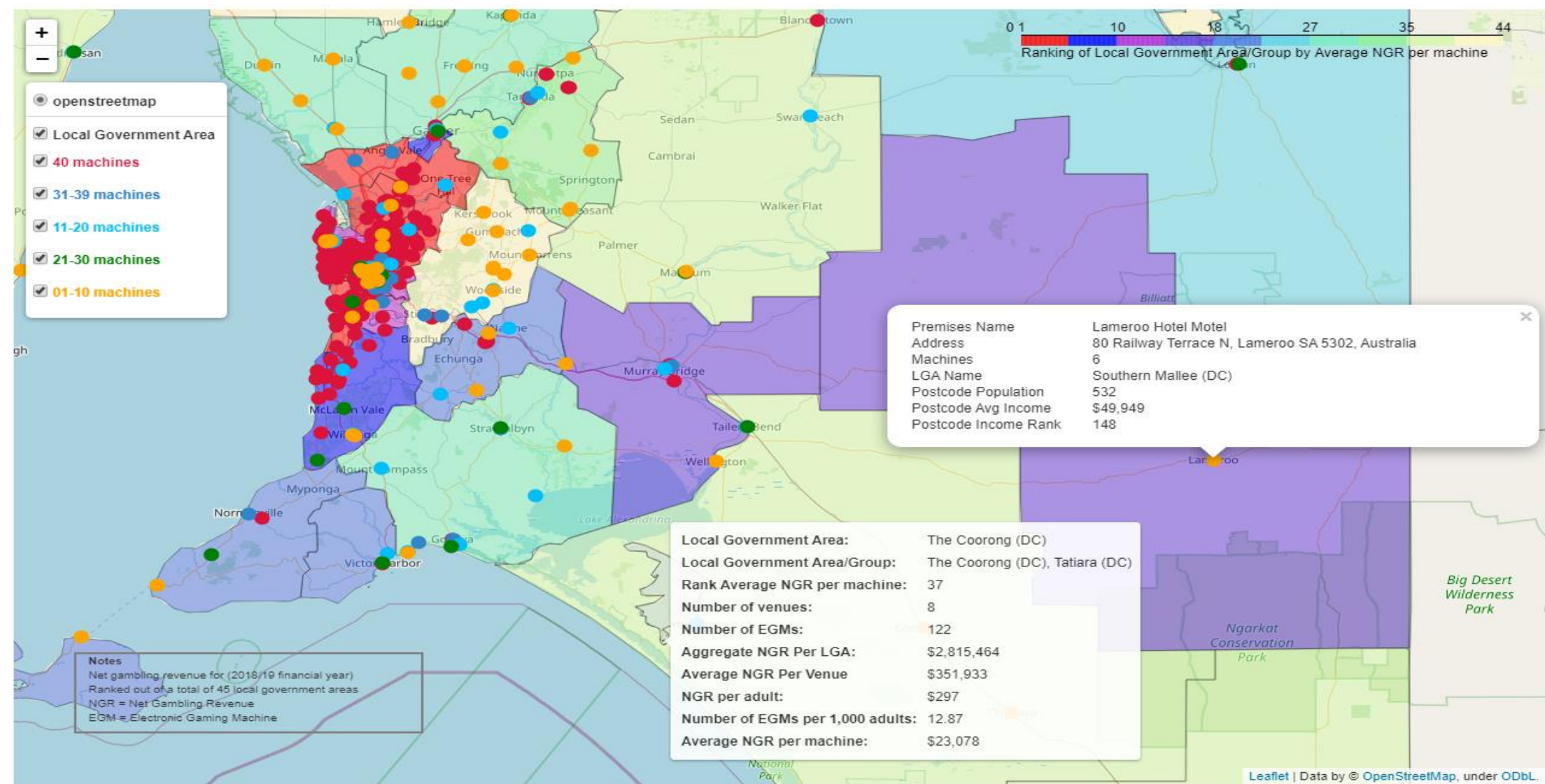
Breakdown of Business units, projected Income

- Focus on increased Net Gaming Revenue, reduced labour costs through automation
- Discontinuance Hotel Accommodation due to high labour costs and low revenue
- Aggressive pricing strategy, Meals, Food sales, Take away liquor and other beverages

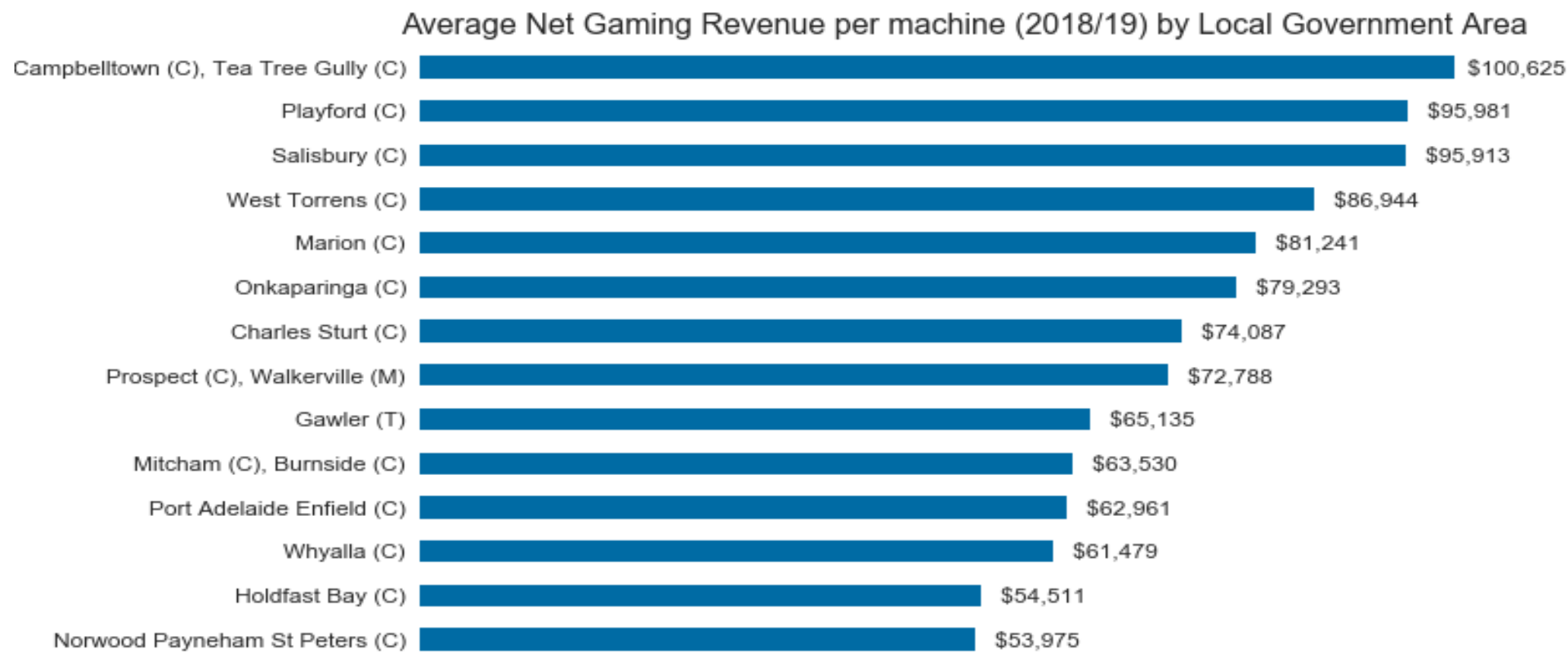| Business Unit	Income Actual	Income Desired
Sale of liquor and other beverages (on-premises)	14%	10%
Sale of liquor and other beverages (take away)	31%	25%
Accommodation	14%	0%
Net Gaming Revenue (NGR)	18%	52%
Takings from meals and food sales	19%	9%
Other gambling (TAB, Keno, etc)	4%	4%
Total	100%	100%

Data acquisition and cleaning

- The South Australian Centre for Economic Studies (SACES) Gambling Database provided regional level data on gaming machine activity in South Australian licensed venues.

  - Net Gaming Revenue by Local Government Area was obtained from Consumer and Business Services.
  - Per adult, population estimates were obtained from Local Government Areas published by the Australian Bureau of Statistics and housing

- Government agencies, including Australian Bureau of Statistics (ABS), Australian Tax Office (ATO) provided Geodemographics of Local Government Areas (LGA)

- In total, 533 rows in competitor hotel dataset including annual Net Gaming Revenue data grouped by LGA

- 1,891 rows City data including Geodemographics of all Local Government Areas (LGA) in South Australia, Population, age, Marital status, education, employment, Tenure, income derived from Census, Taxation data

- Foursquare Places API used to obtain Venue details including location and categories. In total 1,446 rows Venue data. 274 unique categories in 23 cities within target Local Government Area

- Google Geocoding API used extensively to replace inaccurate or inconsistent geodata, Both forward and reverse geocoding were used to clean up address, city and postal codes

Local Government Area by Average Net Gaming Revenue per Machine

○ openstreetmap
☑ Local Government Area
☑ 40 machines
☑ 31-39 machines
☑ 11-20 machines
☑ 21-30 machines
☑ 01-10 machines

0 1   10   18   27   35   44

Ranking of Local Government Area/Group by Average NGR per machine

Premises Name	Lameroo Hotel Motel
Address	80 Railway Terrace N, Lameroo SA 5302, Australia
Machines	6
LGA Name	Southern Mallee (DC)
Postcode Population	532
Postcode Avg Income	$49,949
Postcode Income Rank	148

Local Government Area:	The Coorong (DC)
Local Government Area/Group:	The Coorong (DC), Tatiara (DC)
Rank Average NGR per machine:	37
Number of venues:	8
Number of EGMs:	122
Aggregate NGR Per LGA:	$2,815,464
Average NGR Per Venue	$351,933
NGR per adult:	$297
Number of EGMs per 1,000 adults:	12.87
Average NGR per machine:	$23,078

Notes
Net gambling revenue for (2018/19 financial year)
Ranked out of a total of 45 local government areas
NGR = Net Gambling Revenue
EGM = Electronic Gaming Machine

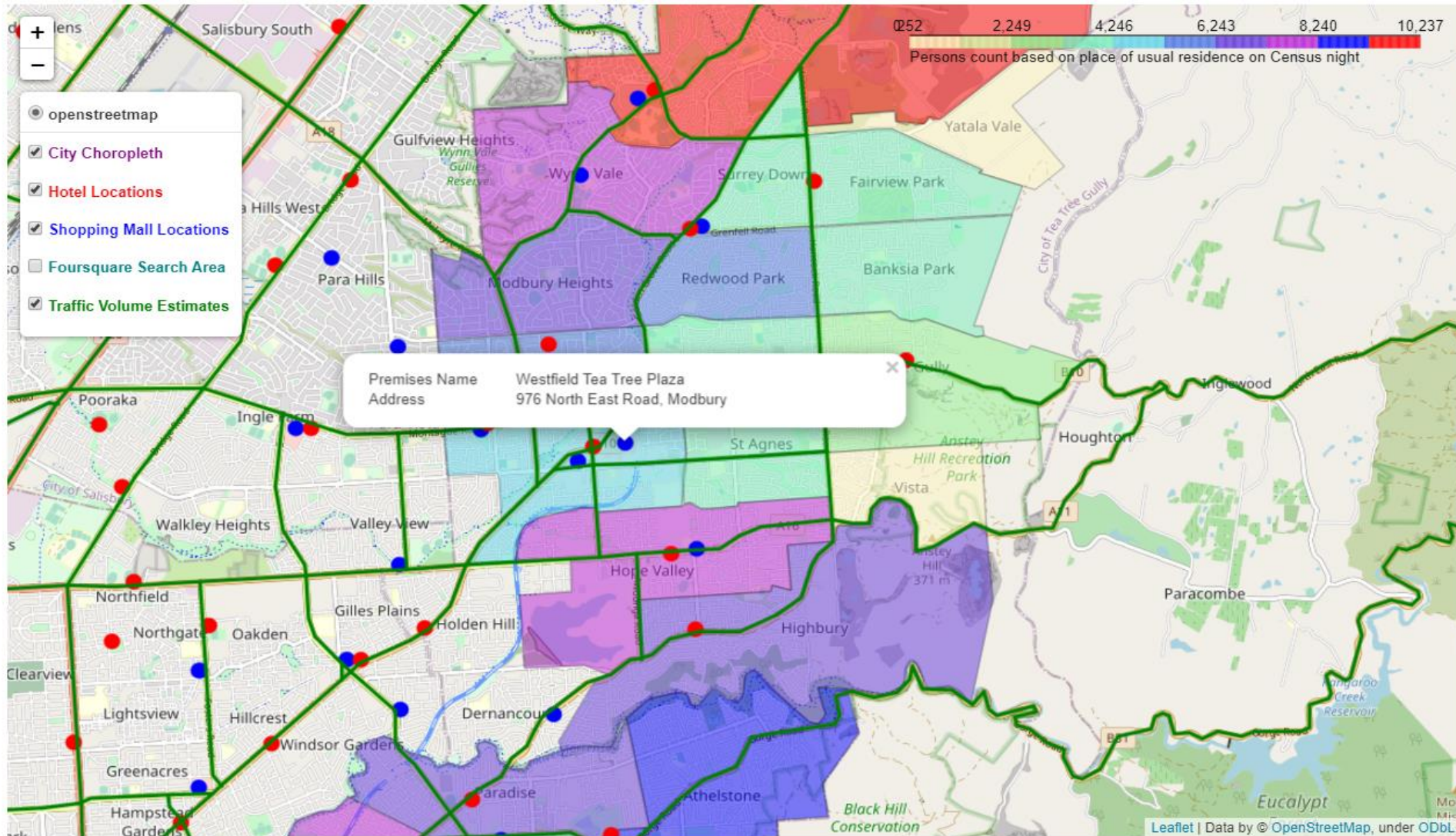Leaflet | Data by © OpenStreetMap, under ODbL.

Choosing The Best Location by Net Gaming Revenue

Local Government Areas of Campbelltown and Tea Tree Gully Short-listed due to
Highest average Net Gaming Revenue (NGR) per machine at $100,625 per machine per year

Average Net Gaming Revenue per machine (2018/19) by Local Government Area

Local Government Area	Average Net Gaming Revenue
Campbelltown (C), Tea Tree Gully (C)	$100,625
Playford (C)	$95,981
Salisbury (C)	$95,913
West Torrens (C)	$86,944
Marion (C)	$81,241
Onkaparinga (C)	$79,293
Charles Sturt (C)	$74,087
Prospect (C), Walkerville (M)	$72,788
Gawler (T)	$65,135
Mitcham (C), Burnside (C)	$63,530
Port Adelaide Enfield (C)	$62,961
Whyalla (C)	$61,479
Holdfast Bay (C)	$54,511
Norwood Payneham St Peters (C)	$53,975

Explore Campbelltown and Tea Tree Gully

Cluster Analysis of City Amenities

Categorical Data
Foursquare Places API was used to obtain venue information for each of the Top Net Gaming Revenue Cities. There are five Hierarchy Level categories, with Level 2 the most predominate.

One-Hot Encoding
Machine Learning algorithms require categorical data to be converted to a numerical form.
Each Venue category value is converted into a new column and assigned a 1 or 0
The rows are then Grouped by City with the mean of frequency of each venue category

Determine the optimal number of clusters
Clustering is the process of making a group of abstract objects into classes of similar objects.
The Visualizer recommends K=4 but after examining results K=5 provided a better outcome

The Optimal K-Cluster with Elbow Method
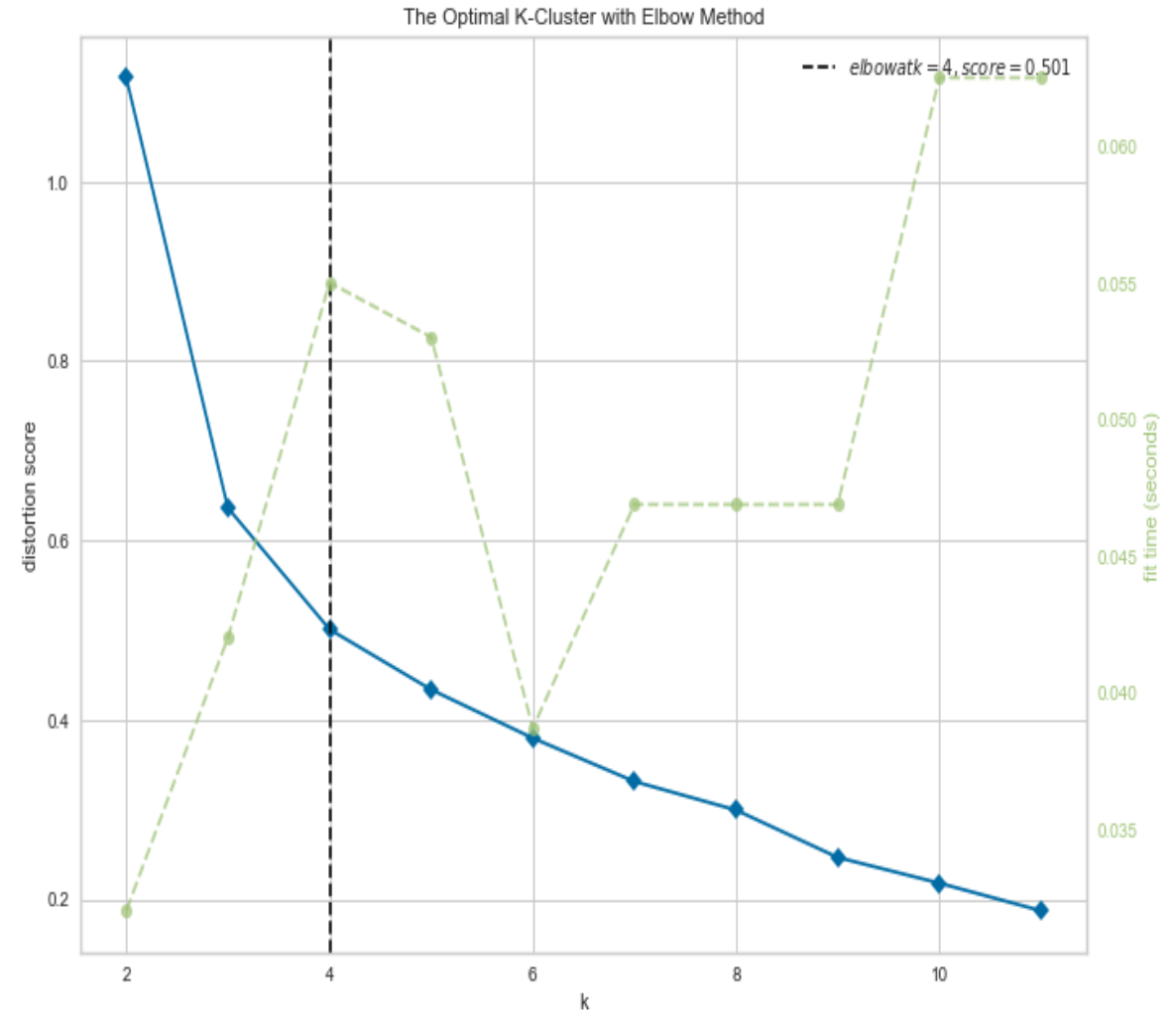
	City	ClusterLabel	ClusterDescription	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Athelstone	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Gas Station	Soccer Field	Pizza Place	Bus Line	Church	Playground	Cemetery	Liquor Store	Bus Station	Nursery School
1	Banksia Park	4	Cluster 4: Recreational Area (Golfcourse, Gyms, Parks)	Middle School	Playground	Football Stadium	Church	Public Art	Salon / Barbershop	Bus Station	Financial or Legal Service	Fire Station	Fish & Chips Shop
2	Campbelltown	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Pizza Place	Salon / Barbershop	Grocery Store	Office	Bakery	Miscellaneous Shop	Housing Development	Bowling Alley	Park	Food Truck
3	Fairview Park	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Park	Trail	Butcher	Bus Station	Gas Station	Playground	Pharmacy	Bus Line	Tennis Court	Dog Run
4	Golden Grove	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Miscellaneous Shop	Salon / Barbershop	Bank	Bus Station	Cafe	Automotive Shop	Gas Station	Asian Restaurant	Stables	Electronics Store
5	Greenwith	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Pizza Place	Community Center	College & University	Liquor Store	Dessert Shop	Building	Italian Restaurant	Grocery Store	Medical Center	Fish & Chips Shop
6	Hectorville	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Deli / Bodega	Gas Station	Pharmacy	Electronics Store	Furniture / Home Store	College Academic Building	Field	Bus Station	Church	Salon / Barbershop
7	Highbury	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Bus Station	Lake	Yoga Studio	Office	Cafe	Chinese Restaurant	College Technology Building	Pub	Post Office	Medical Lab
8	Hope Valley	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Playground	Pizza Place	Park	Bakery	Church	Grocery Store	Pub	Daycare	Miscellaneous Shop	Sports Bar
9	Modbury	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Cafe	Salon / Barbershop	Women's Store	Bank	Shoe Store	Jewelry Store	Department Store	Doctor's Office	Electronics Store	Cosmetics Shop
10	Modbury Heights	0	Cluster 0: Quiet Suburban	Bus Line	Playground	Park	Bus Station	Shopping Mall	Liquor Store	Dog Run	Salon / Barbershop	Gaming Cafe	Sporting Goods Shop
11	Modbury North	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Church	Bus Line	Indian Restaurant	Salon / Barbershop	Gas Station	Gym	Bookstore	Bus Station	Soccer Field	Office
12	Newton	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Bakery	Miscellaneous Shop	Doctor's Office	Pharmacy	Cafe	Shopping Mall	Office	Supermarket	Fruit & Vegetable Store	Pizza Place
13	Paradise	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Bus Stop	Church	School	Bus Station	Park	Cafe	Playground	Rock Club	College Academic Building	Sports Bar
14	Redwood Park	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Park	Coworking Space	Cafe	Chinese Restaurant	Office	Bakery	Fast Food Restaurant	Bus Station	Fried Chicken Joint	Student Center
15	Ridgehaven	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Automotive Shop	Medical Center	Pizza Place	Spa	Building	Sports Club	Shopping Mall	Playground	Gas Station	Bank
16	Saint Agnes	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Automotive Shop	Factory	Gas Station	Shopping Mall	School	Salon / Barbershop	Supermarket	Medical Center	Bus Line	Bakery
17	Surrey Downs	0	Cluster 0: Quiet Suburban	Bus Line	Post Office	Supermarket	Bus Station	Soccer Field	Cafe	School	Restaurant	Residential Building (Apartment / Condo)	Coffee Shop
18	Tea Tree Gully	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Salon / Barbershop	Church	Bus Station	Medical Center	Park	Doctor's Office	Pub	Coffee Shop	Real Estate Office	Asian Restaurant
19	Tranmere	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Lounge	Gas Station	Pizza Place	Korean Restaurant	Park	Gym / Fitness Center	Jewelry Store	Fast Food Restaurant	Medical Center	Shopping Mall
20	Vista	2	Cluster 2: Recreation Park	School	Comedy Club	Yoga Studio	Fast Food Restaurant	Elementary School	Event Space	Factory	Farm	Farmers Market	Field
21	Wynn Vale	3	Cluster 3: Busy Area (Shopping Malls, Densely Populated, High Traffic Volume)	Pizza Place	Grocery Store	Playground	Doctor's Office	Dog Run	Pharmacy	Bus Station	Cafe	Fish & Chips Shop	Event Space
22	Yatala Vale	1	Cluster 1: Rural	Garden Center	Beach	Yoga Studio	Fast Food Restaurant	Elementary School	Event Space	Factory	Farm	Farmers Market	Field

Cluster Analysis of City Amenities

The following table summarizes the result of each cluster

	Cluster 0	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Properties	Quiet Suburban	Rural	Recreation Park	Busy Area Shopping Malls, Densely Populated High Traffic Volume	Recreational Area Golf course, Gyms, Parks
Venues	58	2	2	1376	8
Cities	Modbury Heights Surrey Downs	Yatala Vale	Vista	Saint Agnes Ridgehaven Newton Highbury Paradise Modbury Modbury North Hectorville Athelstone Tranmere Golden Grove Redwood Park Fairview Park Greenwith Wynn Vale Campbelltown Hope Valley Tea Tree Gully	Banksia Park

Discussion

Determinants of Hotel Location

Spatial location is one of the most important factors for a new hotel establishment.
As a service industry, hotels are keen on locations that are proximate to their potential markets.

Agglomeration effect refers to benefits the hotel can receive from the clustering of economic activity.
Generally, one incentive for choosing to locate close to shopping malls and transport hubs is the positive spill over effects. Traffic is one of the primary factors that can impact business operations.
For hospitality establishments, high foot and highway traffic areas are generally the best places to start a business.

Sale of liquor and other beverages (take away) account for 25-35% hotel revenue
If the hotel bottle shop is one of many in a three-mile radius, then it may be forced to compete solely on price. Doing so makes reaching profitability considerably more difficult. But provided the hotel offers, a wide selection of products and offers like lottery and tobacco, location will matter less

A more detailed survey of the twelve Hotels within Local Government Areas of (Campbelltown, Tea Tree Gully) is recommended to determine approximate NGR revenue rank by City by hourly gaming floor headcount.

Proposed Hotel Locations

City	Comment	Recommended Road	Population	Traffic per Day
Campbelltown	Residential; Small shopping mall	Lower North East Rd	8,152	37,700
Golden Grove	High Population; Large shopping mall; Village Tavern	The Golden Way	10,237	11,400
Modbury	Busy Area; Shopping Malls, High Traffic Volume	North East Rd	5,244	44,300
Modbury Heights	Quiet Suburban; Next to A18 Highway	McIntyre Rd	6,699	34,600
Modbury North	Quiet Suburban; Next to A18 Highway	McIntyre Rd	5,626	32,200
Newton	Residential; Large shopping mall	St Bernards Rd	4,788	26,200
Paradise	O-Barn Interchange, High Traffic Volume	Darley Rd	6,776	37,600
Ridgehaven	Residential; Large shopping mall	Golden Grove Rd	4,008	26,400
Saint Agnes	Residential; shopping mall	North East Rd	4,136	17,100
Tranmere	Residential; shopping mall	Glynburn Rd	3,757	28,800
Wynn Vale	Residential; shopping mall	The Golden Way	7,756	28,200

Conclusion

This project explored data insights that contribute to the identification of hotel locations in Metropolitan Adelaide

The methodology section described the data exploration that were conducted and how they relate to the original business problem of providing two or more locations in Metropolitan Adelaide for a new hotel based on criteria:

The discussion section provided explanation and interpretation of results. It also explained determinants of Hotel Location and proposed a list of Cities

A more detailed survey of the twelve Hotels within Local Government Areas of (Campbelltown, Tea Tree Gully) is recommended to determine approximate NGR revenue rank by City by hourly gaming floor headcount.

Access to the Independent Gaming Corporation Ltd (IGC) web portal would provide weekly Local Government Area, Net Gaming Revenues rather than the annual dataset used in this report.