

The Battle of Neighborhoods

Where to live in
Wellington, NZ?

Shaun Wesley Que
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Source: WHO

I. Introduction

A. Background

- New Zealand's early success in crushing the curve of the coronavirus disease 2019 (COVID-19) has made waves all over the world.
- By July 2, 2020, New Zealand has recorded 1,180 confirmed cases of COVID-19 with only 22 deaths since its first case on February 28.
- The country's Director-General of Health Dr. Ashley Bloomfield said that their strategy is based on speedy testing, contact tracing and isolation, and rigorously adhering to public health guidance.
- Despite similar measures being enforced in other countries, the results are quite the opposite. People are generally faulting their respective governments for ineffectively handling the current crisis, and are looking at options on how not to experience this "government failure" all over again should another unprecedented crisis hit.



Source: NZ Herald

I. Introduction

B. Target Audience

- Since the coronavirus pandemic took hold this year, more than 250,000 Americans have investigated whether they qualify to move to New Zealand.
- In June alone, 112,800 more Americans visited New Zealand's immigration website compared to same time last year.
- This is a 160% spike and is equivalent to one American clicking on the site every 30 seconds. Given the comparative statistics between the two countries, this general sentiment is not surprising.

C. Problem Statement

- This presentation aims to help people who are looking to move to New Zealand's capital, Wellington, to decide which urban district to move into based on the cost, population, and general closest venues of relevance (supermarkets, restaurants, parks, etc.), among other factors.

II. Data

List of Urban Areas in Wellington

- Source: [Wikipedia](#)
- Description: This is the master list of the urban areas in Wellington, with their corresponding population.

Median Housing Price

- Source: [Real Estate Investar NZ](#)
- Description: The median housing price data here is used to compare how expensive property prices are across the districts.

Nearby Venues of Interest

- Source: [Foursquare API](#)
- Description: This is used to identify the closest venues for relevance.



III. Methodology

A. Analyze Each Neighborhood

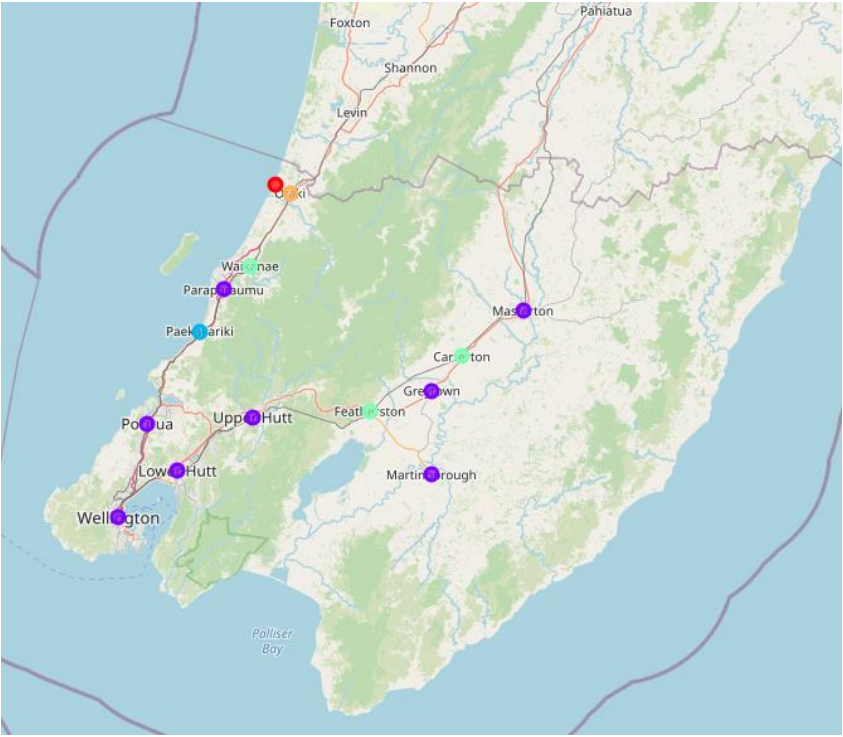
- Using one hot encoding and a series of data processing techniques, create a table summarizing the top 10 most common venues by district. The first 5 rows are shown below:

	Neighbor- hood	1 st	2 nd	3 rd	4 th	5 th
0	Carterton	Café	Train Station	Playground	Grocery Store	Creperie
1	Featherston	Cheese Shop	Deli / Bodega	Train Station	Café	Grocery Store
2	Greytown	Café	Restaurant	Arts & Crafts Store	Grocery Store	Bakery
3	Lower Hutt	Café	Coffee Shop	Supermarket	Japanese Restaurant	Plaza
4	Martinborough	Café	Hotel	Supermarket	Fish & Chips Shop	Plaza

	6 th	7 th	8 th	9 th	10 th
	Cheese Shop	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store
	Beer Garden	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store
	Hotel Bar	Deli / Bodega	Wine Shop	Chocolate Shop	Coffee Shop
	Portuguese Restaurant	Fast Food Restaurant	Mobile Phone Shop	Sandwich Place	Shopping Mall
	Indie Movie Theater	Deli / Bodega	Grocery Store	Wine Shop	Diner

B. Cluster Neighborhoods

- Using K-Means clustering and Folium map, create a map showing the neighborhoods according to their cluster (set at 5):



III. Methodology

C. Examine Each Cluster

Cluster 1: Beach

1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Beach	Food Truck	Coffee Shop	Bistro	Campground	Deli / Bodega	Chinese Restaurant	Chocolate Shop	Convenience Store	Cosmetics Shop

Cluster 2: Cafes

1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Café	Coffee Shop	Restaurant	Vietnamese Restaurant	Burger Joint	Plaza	Beer Bar	Chinese Restaurant	Art Gallery	Cambodian Restaurant
Café	Coffee Shop	Supermarket	Japanese Restaurant	Plaza	Portuguese Restaurant	Fast Food Restaurant	Mobile Phone Shop	Sandwich Place	Shopping Mall
Café	Grocery Store	Gas Station	Portuguese Restaurant	Burger Joint	Men's Store	Mobile Phone Shop	Gym	Movie Theater	Noodle House
Fast Food Restaurant	Café	Supermarket	Pool	Department Store	Furniture / Home Store	Coffee Shop	Indian Restaurant	Mobile Phone Shop	Burger Joint
Grocery Store	Movie Theater	Fast Food Restaurant	Coffee Shop	Supermarket	Bar	Pool	Bookstore	Wine Shop	Cosmetics Shop
Café	Modern European Restaurant	History Museum	Supermarket	Bakery	Sandwich Place	Wine Shop	Creperie	Chinese Restaurant	Chocolate Shop
Café	Restaurant	Arts & Crafts Store	Grocery Store	Bakery	Hotel Bar	Deli / Bodega	Wine Shop	Chocolate Shop	Coffee Shop
Café	Hotel	Supermarket	Fish & Chips Shop	Plaza	Indie Movie Theater	Deli / Bodega	Grocery Store	Wine Shop	Diner

Cluster 3: Parks

1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Park	Train Station	Deli / Bodega	Campground	Cheese Shop	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store	Cosmetics Shop

Cluster 4: Shops

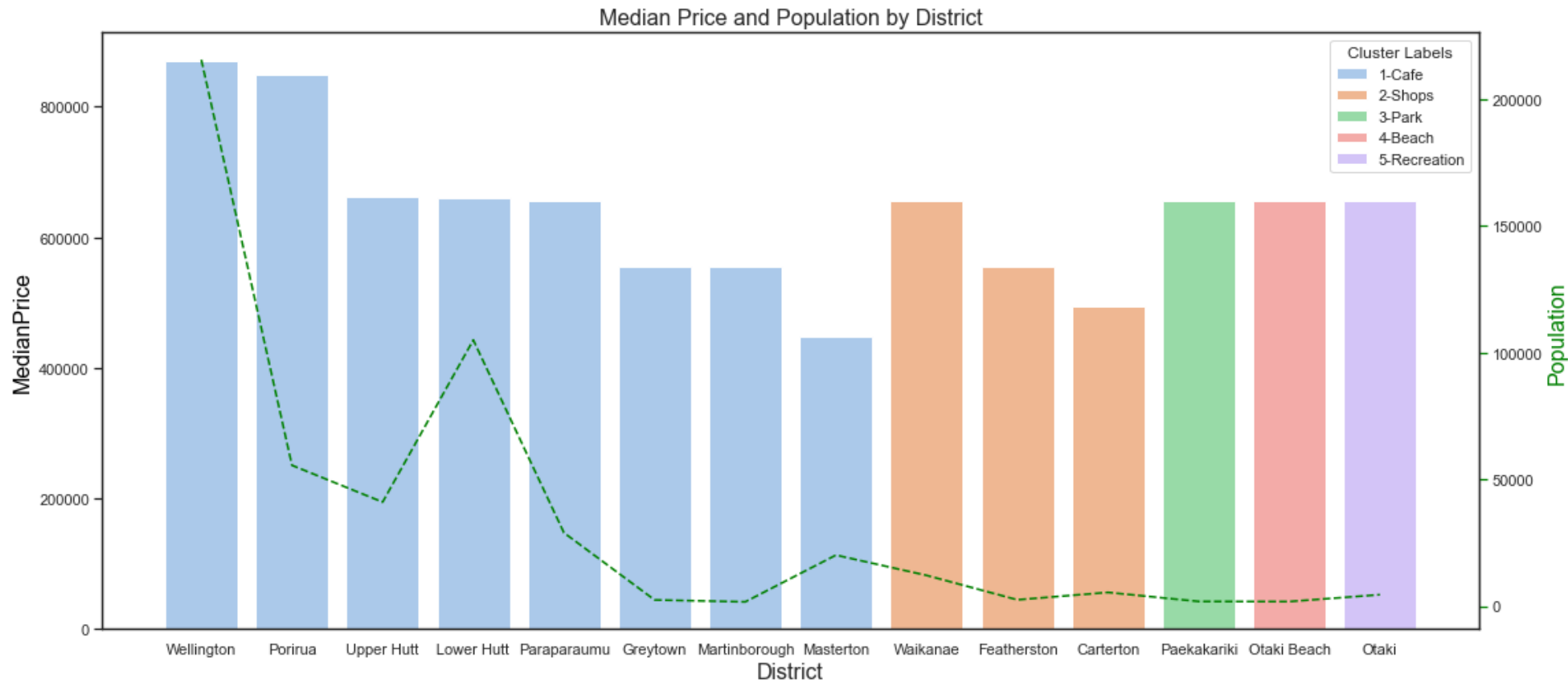
1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Grocery Store	Cambodian Restaurant	Train Station	BBQ Joint	Brewery	Deli / Bodega	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store
Café	Train Station	Playground	Grocery Store	Creperie	Cheese Shop	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store
Cheese Shop	Deli / Bodega	Train Station	Café	Grocery Store	Beer Garden	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store

Cluster 5: Recreation

1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th
Golf Course	Athletics & Sports	Pub	Wine Shop	Deli / Bodega	Chinese Restaurant	Chocolate Shop	Coffee Shop	Convenience Store	Cosmetics Shop

III. Methodology

D. Compare Housing Median Prices, Population, and Cluster Type Across Districts





IV. Results

The final plot shows three very important information:

- What is the median housing price per district
 - What is the population per district
 - Which districts are similar in terms of nearby venues
- Based on the population distribution, people in Wellington generally live in neighborhoods categorized under the "Cafe" Cluster (Wellington, Lower Hutt, Porirua, etc.), followed by the "Shops" Cluster (Waikanae, Featherston, Carterton).
 - For each cluster, the median housing prices are directly correlated to the population.
 - It is interesting to note that despite several neighborhoods having very similar nearby venues, the variances in the population and median housing prices are quite large.

V. Discussion

- There is no "best" or "right" answer on where to move to -- it all depends on a person's preference and willingness to accept certain tradeoffs.
- As an example, Wellington district is clearly the hub, being the most populated district in Wellington, and as well as having the most expensive median housing prices. If Wellington district is too crowded already, then Porirua is also an option. In terms of housing prices, Porirua is a close second, but its population is just around a quarter compared to that of Wellington District's.
- If you are looking to relocate to Wellington District due to its nearby venues but find its housing prices too high, then Greytown, Martinborough, and Masterton are good alternatives, as they belong to the same cluster but have significantly lower median housing prices.
- If you find the average Wellington District's housing prices acceptable, but want a more laid back and less crowded setting and with more parks and recreational spaces, then Paekakariki and Otaki are perfect alternatives.

VI. Conclusion

For someone who wants to move into Wellington, there are certainly a lot of options, each with its unique setting and attributes to offer. From the analysis above, we have shown that one need not live in a highly populated or extremely expensive district just to enjoy nearby venues of interest. It all depends on the person's preference and willingness to accept certain tradeoffs.

Further Expectations:

- **Features:** The analysis above only uses a limited set of variables in identifying similar neighborhoods. One can add more variables other than nearby venues to make the comparison more robust.
- **Geographical Scope:** The analysis is only limited to Wellington, the capital of New Zealand. One can extend this analysis to cover other cities and regions in the country for more options.



THANK YOU!

