

# HDB Resale Flats

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Price Prediction on Propertee Guru



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# AGENDA

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# 01 Introduction



# Introduction

- We are Data Scientists for Propertee Guru
- Presenting to executive members of Propertee Guru



# Current Propertee Guru App

The image shows a screenshot of the Propertee Guru app's search interface. At the top, there are two tabs: "Buy" and "Rent". Below them is a "Location" input field containing "EW19 Queenstown MRT Station" with a clear button (X) next to it. The search criteria are listed below:

- Search Within Distance: 1 km (12 min)
- Property Type: HDB
- Price: Any - Any
- Bedroom: Any
- Floor Size: Any - Any
- PSF: Any - Any
- Bathroom: Any
- Tenure: Any
- Build Year: Any - Any
- Floor Level: Any

- No distance to schools
- No distance to malls
- No price prediction

# 02 Problem Statement



# Problem Statement

How might we develop a **platform** for **predicting** HDB resale flat prices **based on preferences**, **streamlining price comparison process** for **sellers** and **buyers**, and **attracting users to our platform**?



# 03 Our Data



# Data Period

From 2012 to 2021



# Key Attributes of Buying a Flat



Planning area



Floor area



Distance to MRT



Flat type



Distance to school



Floor level

Buy      Rent

Location: EW19 Queenstown MRT Station (X)

Search Within Distance: 1 km (12 min) ▾

Property Type: HDB ▾

Price: Any - Any ▾

Bedroom: Any ▾

Floor Size: Any - Any ▾

PSF: Any - Any ▾

Bathroom: Any ▾

Tenure: Any ▾

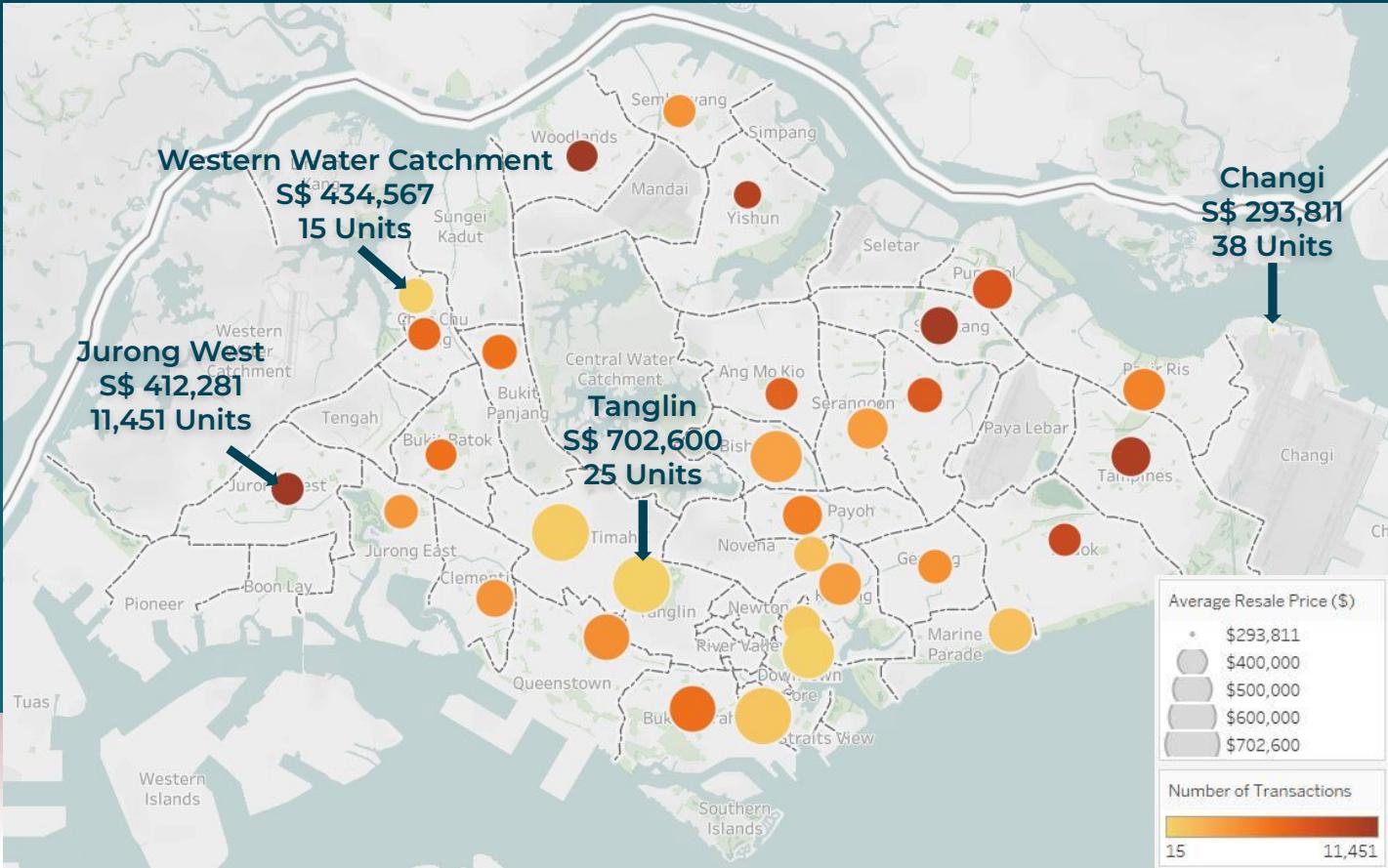
Build Year: Any - Any ▾

Floor Level: Any ▾

**Existing app**



# Geospatial Data Overview

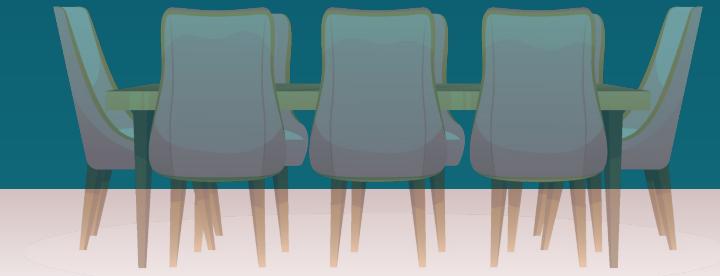


# Data Set

Planning areas	32 Planning areas vs 26 Towns
Distance to city (additional feature)	Raffles Place MRT as reference point
Age of HDB when sold (additional feature)	Transacted year - Lease commencement year



Image source: [https://en.wikipedia.org/wiki/Planning\\_areas\\_of\\_Singapore](https://en.wikipedia.org/wiki/Planning_areas_of_Singapore)



# 04 Model

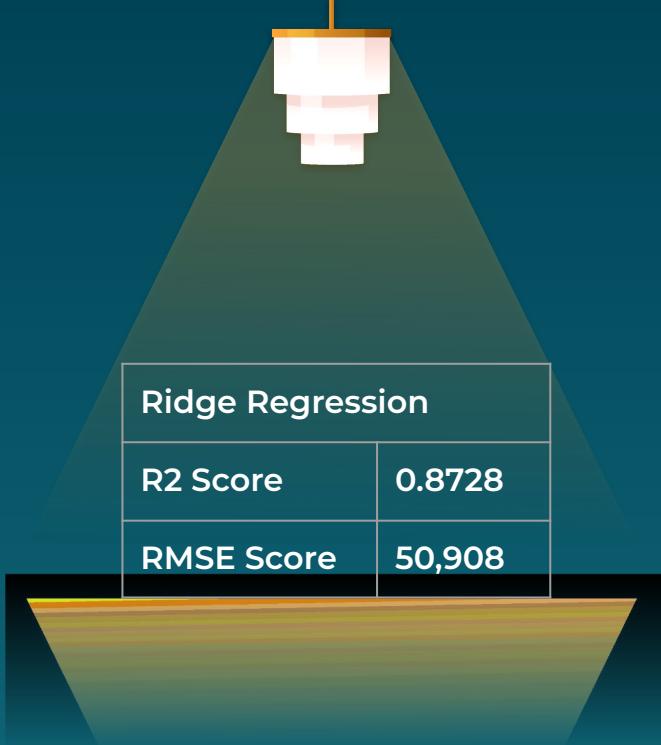


# Model

	Cross Validation Score
Linear regression	0.8736
Lasso regression	0.8717
Ridge regression	0.8738

We decided to use the Ridge Regression model because it has the best validation score

# Model

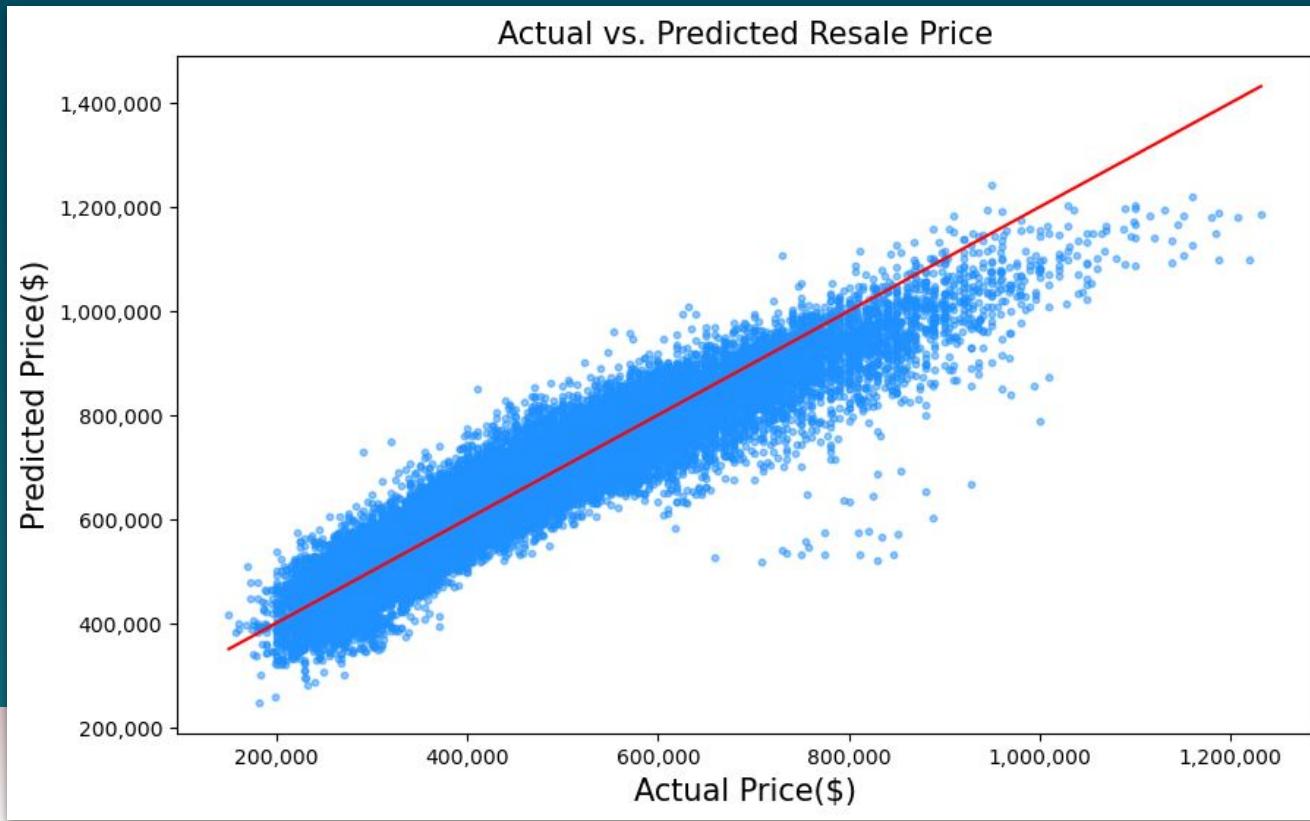


Cross Validation Score	
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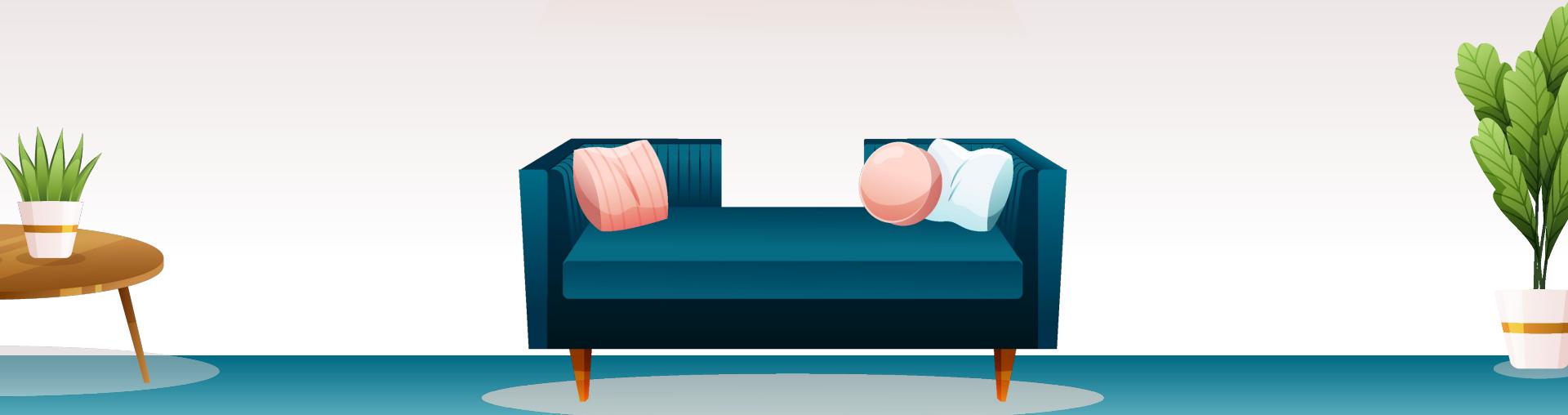
Ridge Regression	
R2 Score	0.8728
RMSE Score	50,908

We decided to use the Ridge Regression model because it has the best validation score

# Actual versus Predicted Resale Price



# 05 Demographic Profile



# The Tan Family

- Selling 3-Room Flat
- Buying 5-Room Flat
- Fairfield Methodist Primary School



# The Tan Family

- Selling 3-Room Flat
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# Selling 3-Room Flat in Choa Chu Kang

## HDB Resale Price Prediction

Planning Area

Choa Chu Kang

Size (sqft)

800

- +

Flat Type

3 ROOM

Age (year)

20

- +

Floor Number

7

- +

Distance to MRT Station (m)

500

- +

Distance to Bus Station (m)

100

- +

Distance to Mall (m)

300

- +

Distance to Hawker Centre (m)

300

- +

Distance to Primary School (m)

500

- +

Predict



# S\$ 341,562

Recommended Resale Selling Price for Tan Family

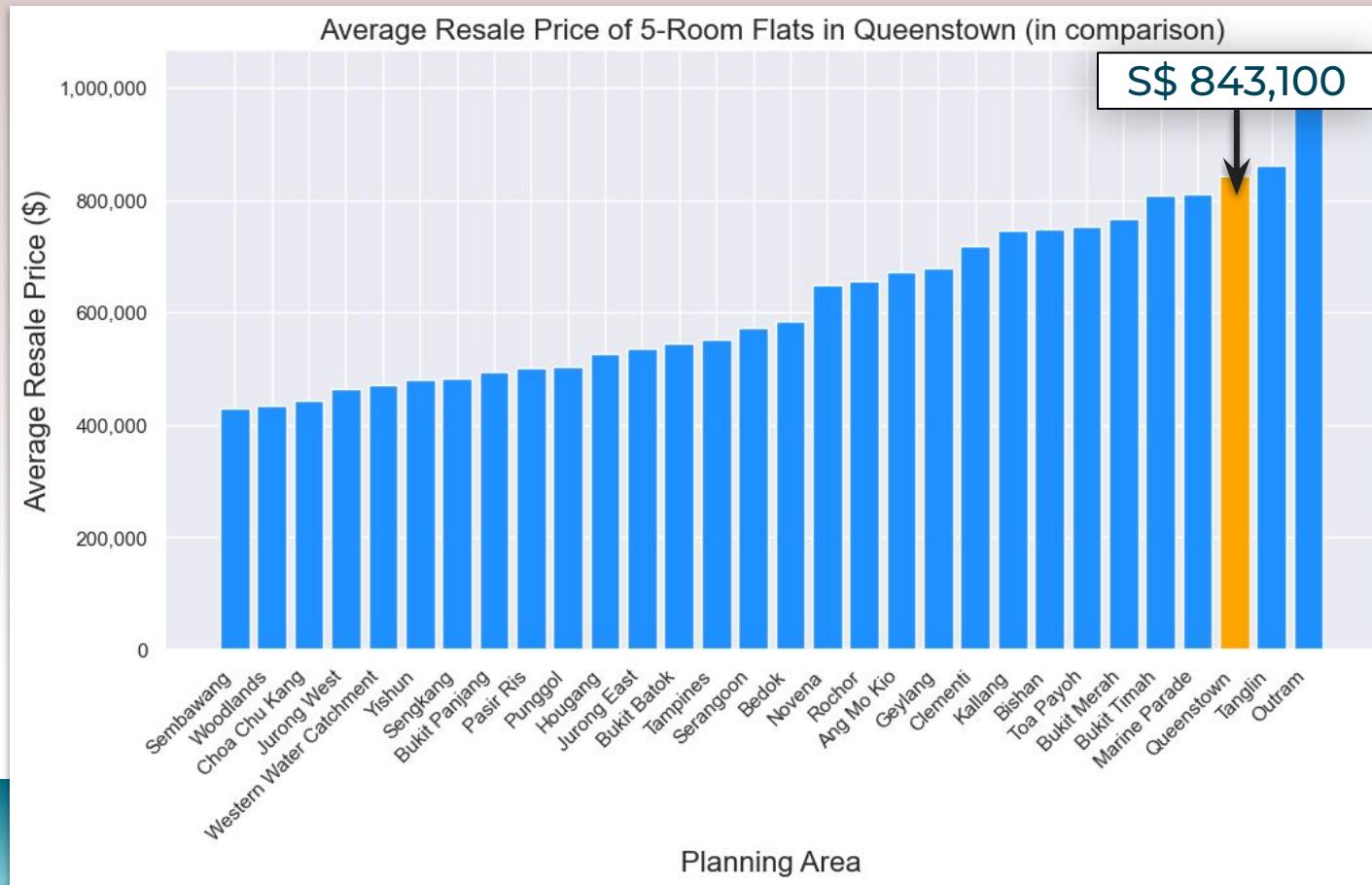


# The Tan Family

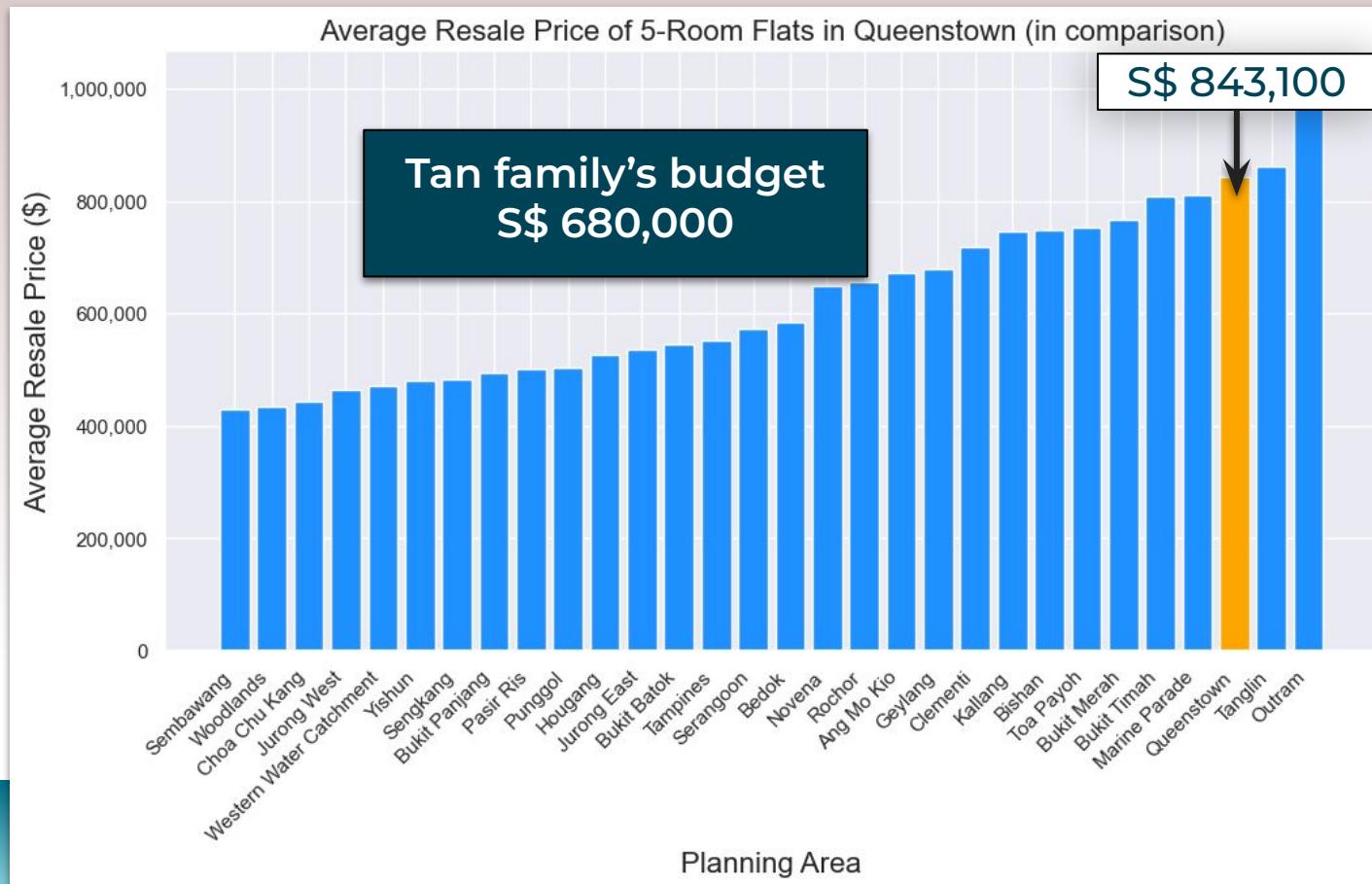
- Selling 3-Room Flat
- **Buying 5-Room Flat**
- Fairfield Methodist Primary School



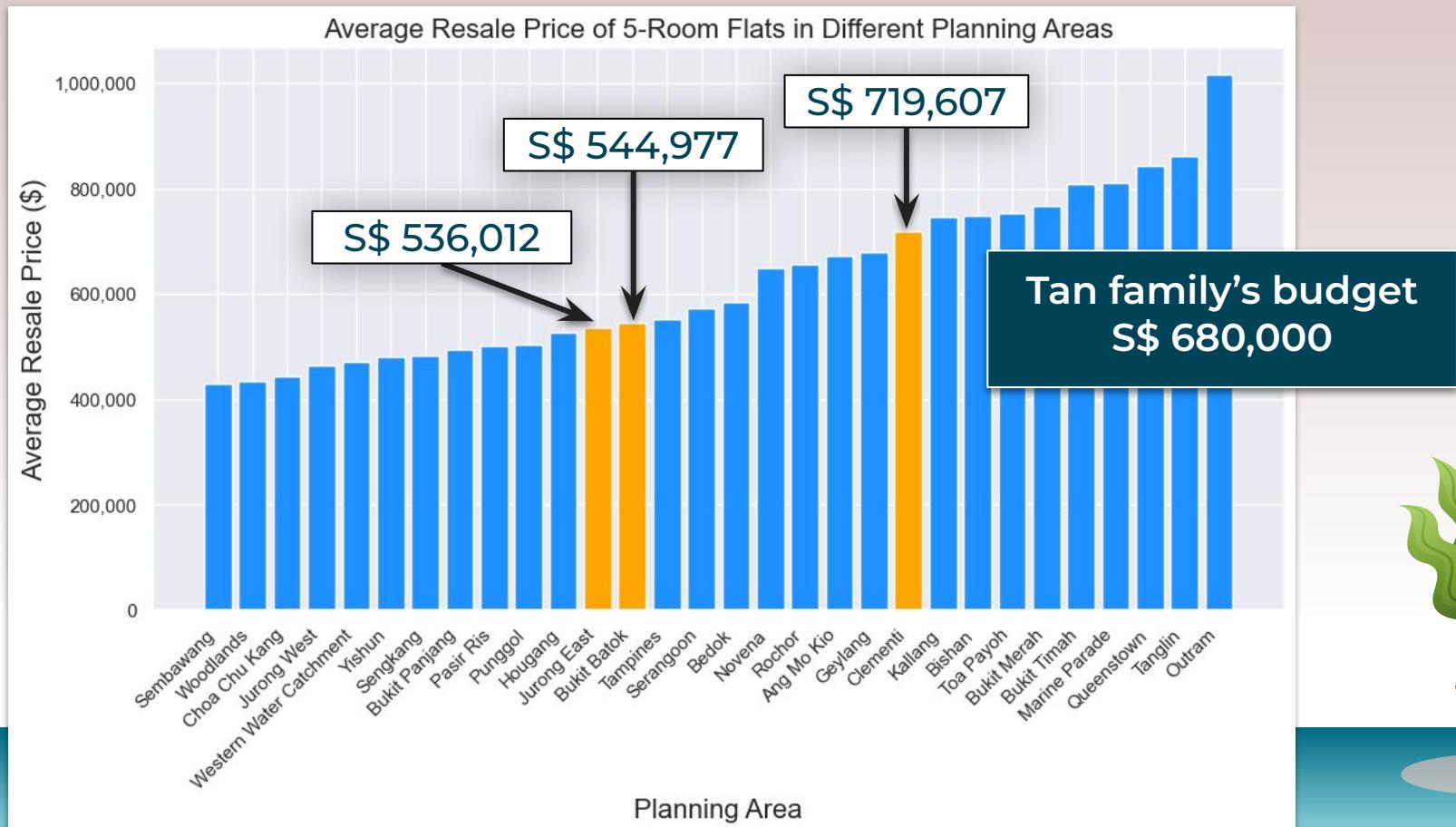
# Buying 5-Room Flat in Queenstown



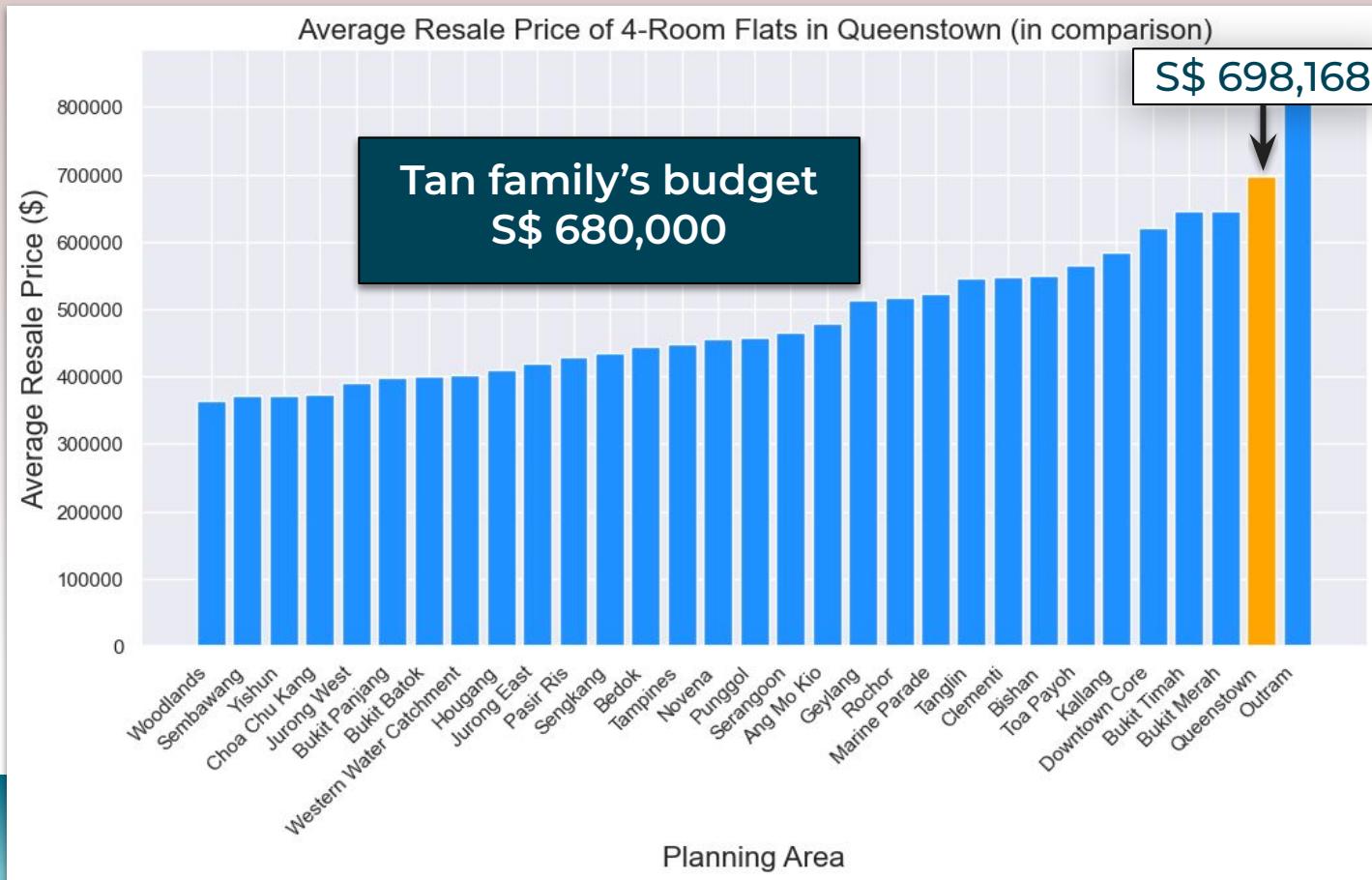
# Buying 5-Room Flat in Queenstown



# Buying 5-Room Flat in Other Areas



# Buying 4-Room Flat in Queenstown



# Distance to Fairfield Methodist Pri

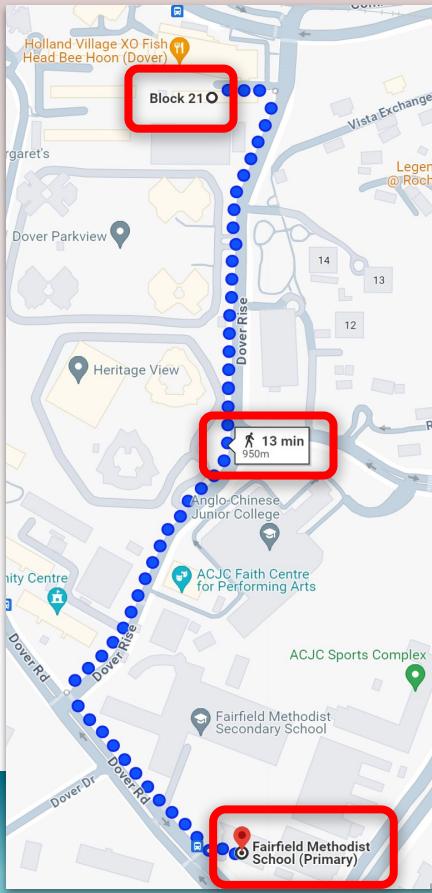


Image source: <https://www.google.com/maps>

# Distance to MRT

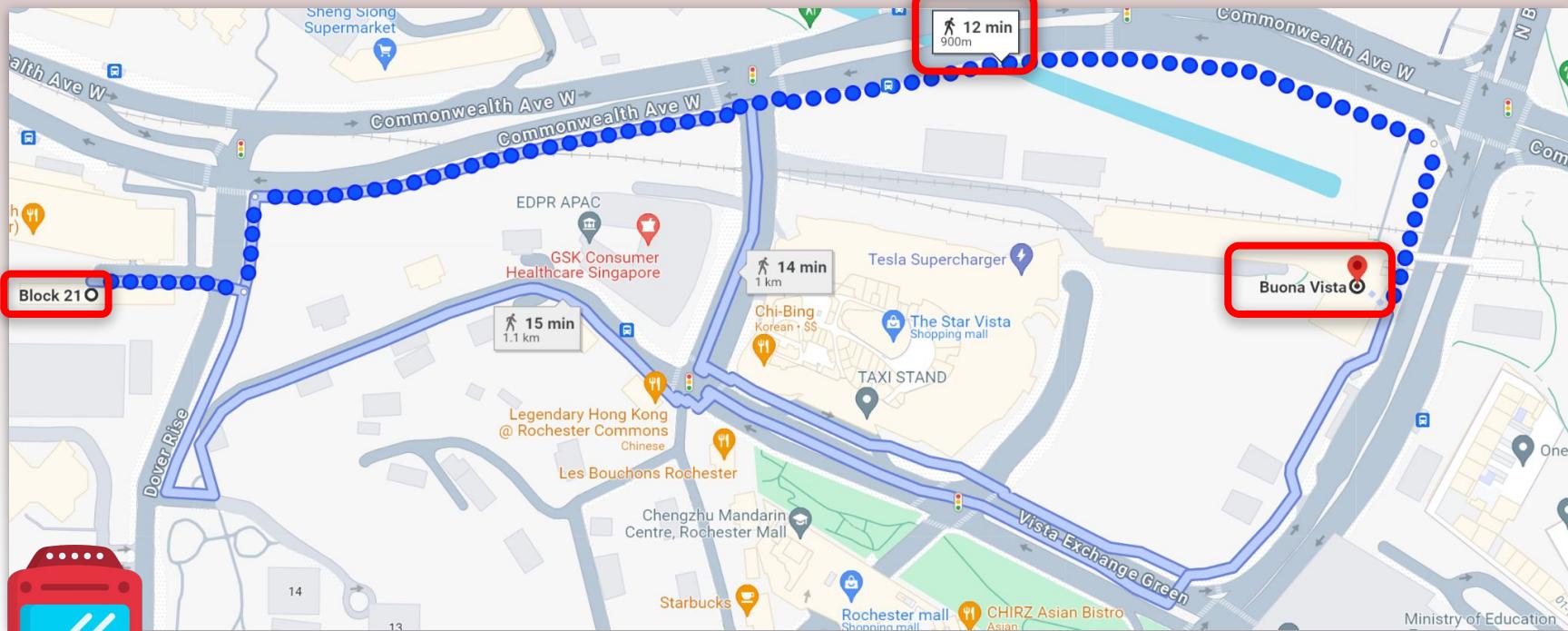
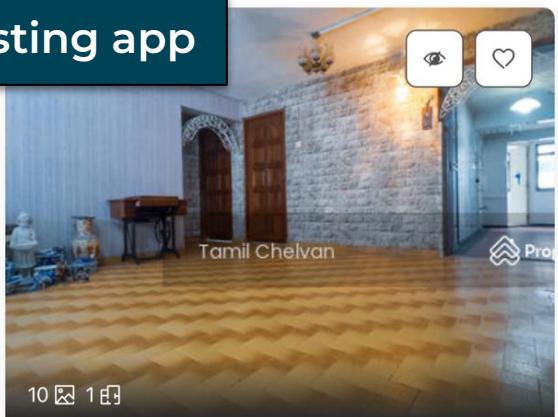


Image source: <https://www.google.com/maps>

# Buying 4-Room Flat in Queenstown

Existing app



Listed by Tamil Chelvan  
Image source: Property Guru App

## HDB Resale Price Prediction

Planning Area

Size (sqft)

Queenstown

947

-

+

Flat Type

Age (year)

4 ROOM

49

-

+

Floor Number

Distance to MRT Station (m)

14

710

-

+

Distance to Bus Station (m)

Distance to Mall (m)

50

300

-

+

Distance to Hawker Centre (m)

Distance to Primary School (m)

50

950

-

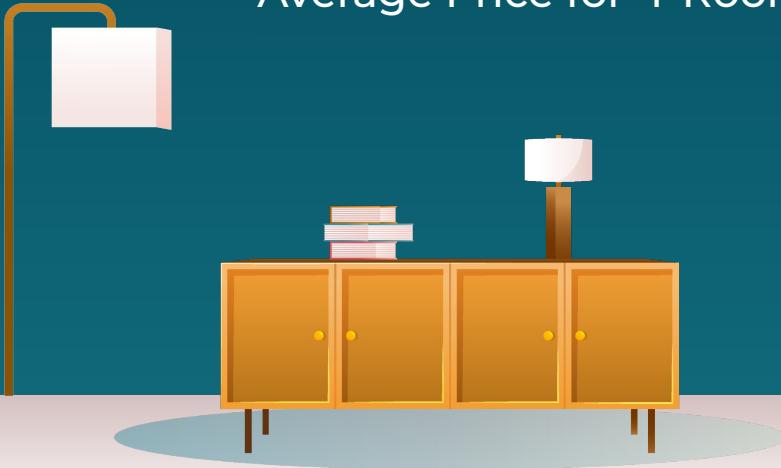
+

Predict

# S\$ 489,423

Recommended Resale Purchase Price for Tan Family

Average Price for 4-Room in Queenstown : S\$ 698,168

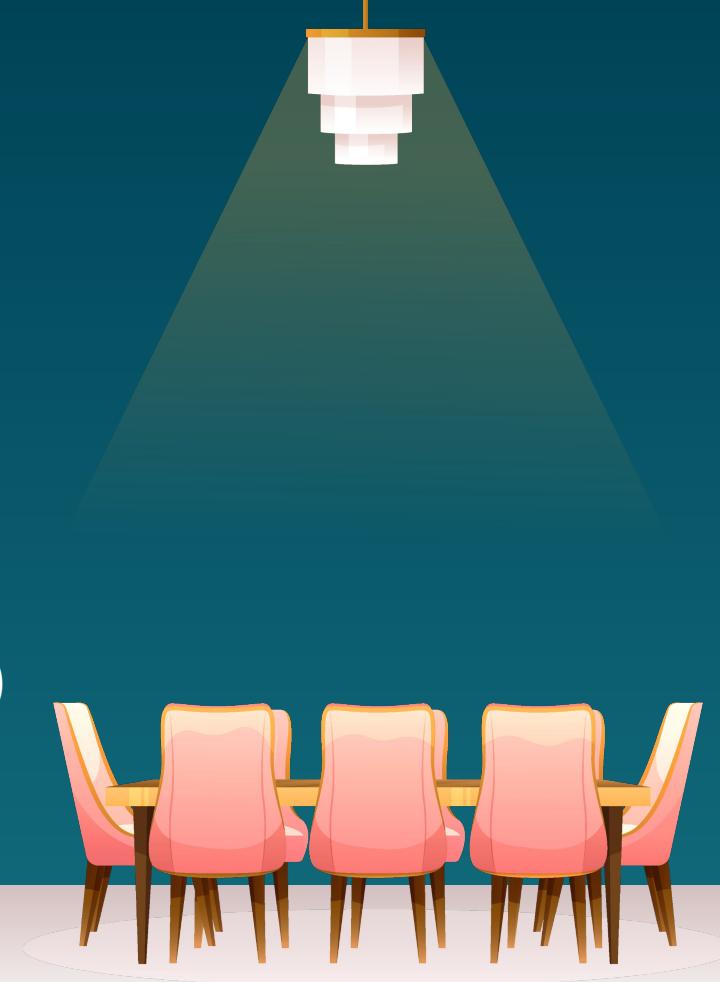


# 06 Conclusion & Recommendations



# Conclusion

- Recommend buying 4-room flat in Queenstown at around S\$ 500,000
- With the new application, we can get more accurate market price instead of viewing the average price
- Help sellers determine suitable selling price (not too high or too low)
- Help buyers minimise cost (avoid Cash Over Valuation)



# Recommendations

Data features that we would have liked to have collected to determine even more accurate HDB resale flat prices



Areas demarcated by MRT station names



Distance to fitness areas



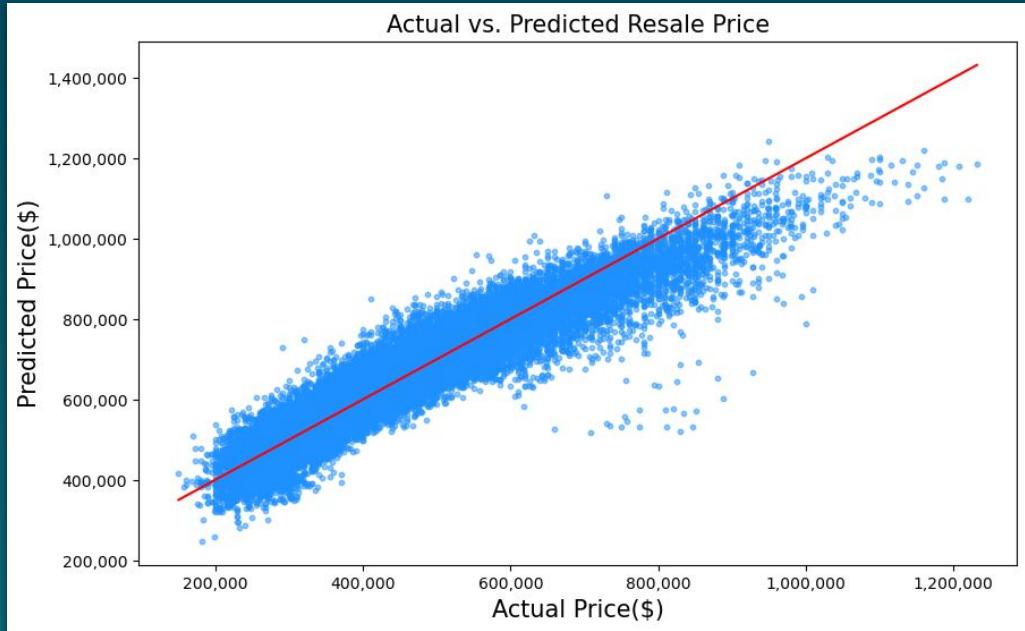
Distance to parks



Spike in prices from 2022



# Recommendations



To improve our model, we can build a separate model for houses that have a predicted price of more than \$1 million.



# Thank You!

Do you have any questions?

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