

HDB Resale Flats

Price Prediction on Propertee Guru



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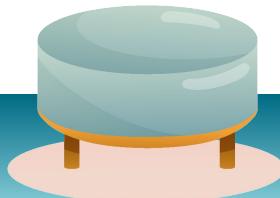
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01 Introduction



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" field containing "EW19 Queenstown MRT Station" with a clear button. 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?**

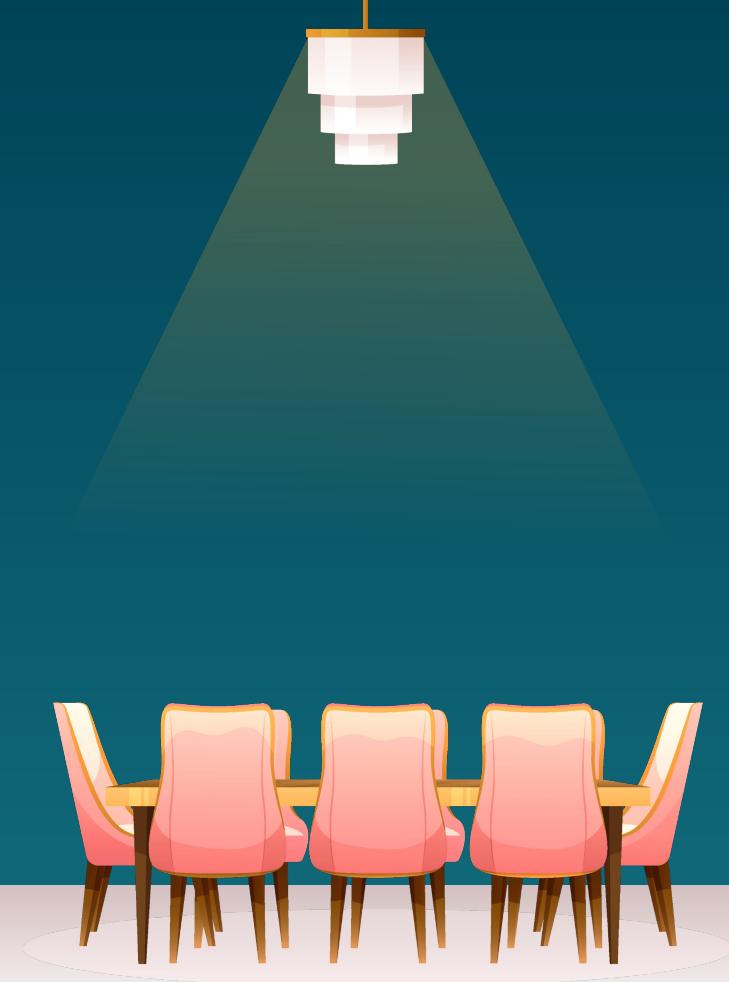


03 Our Data



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 ▾

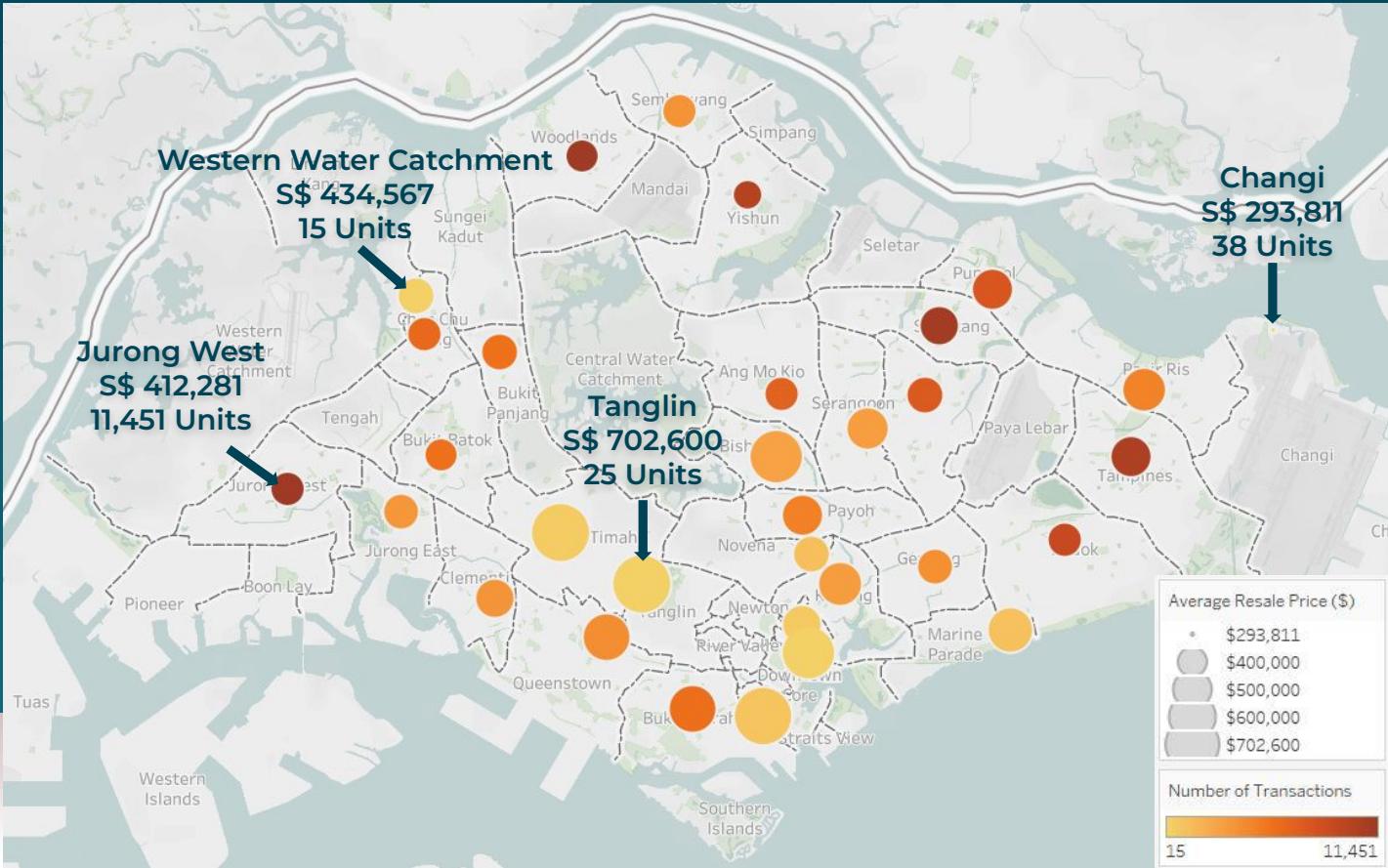
Build Year: Any - Any ▾

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



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

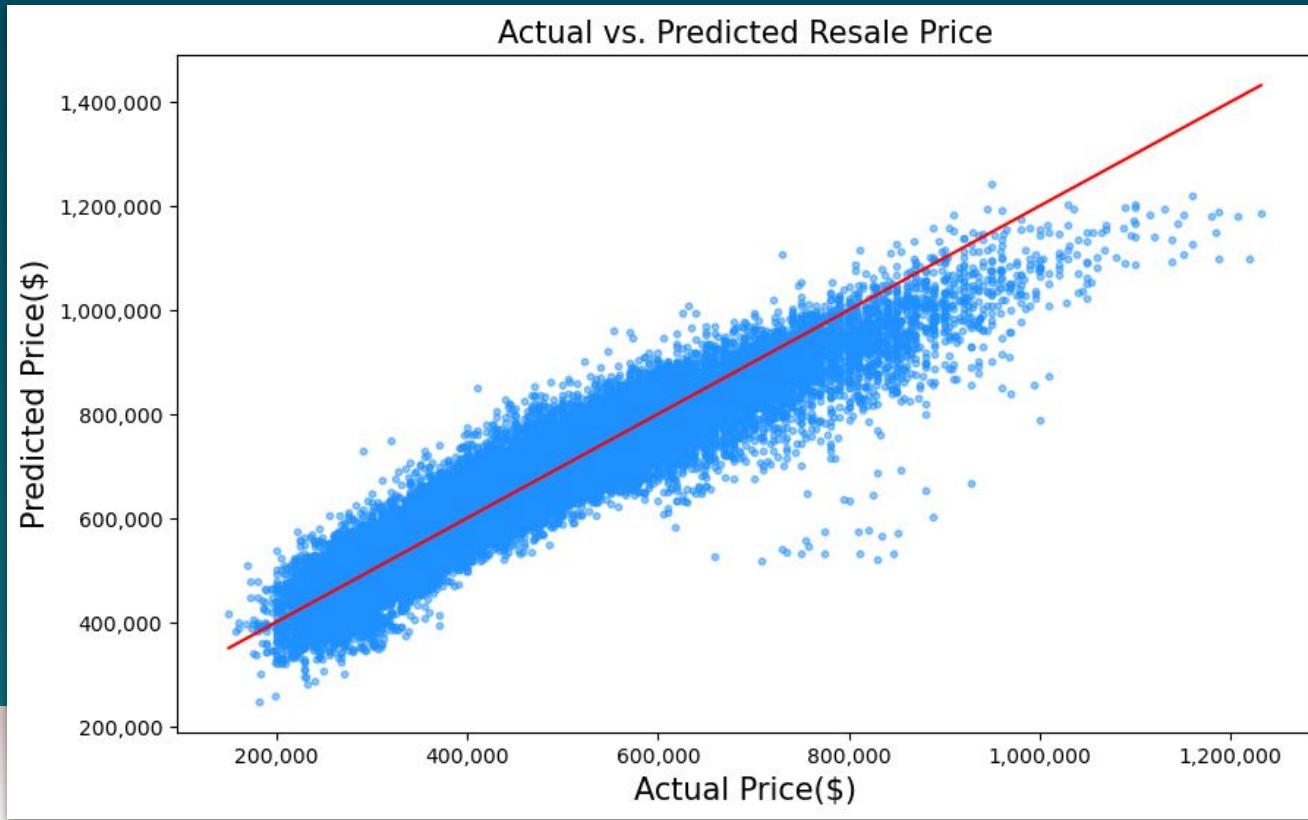


Cross Validation Score	
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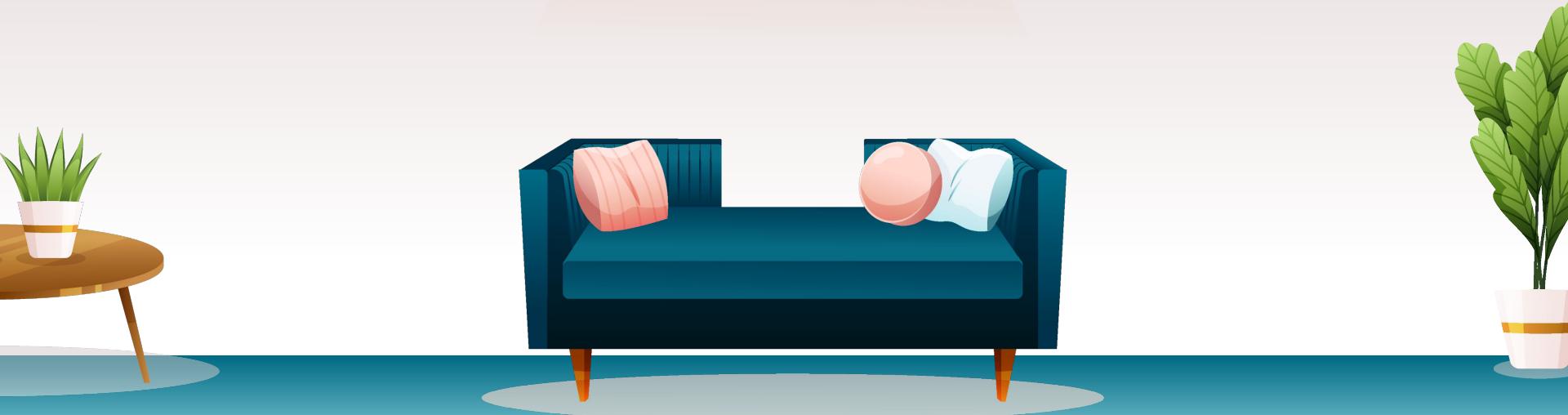
Ridge Regression	
R2 Score	0.8739
RMSE Score	50,908

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
- Buying 5-Room Flat
- Fairfield Methodist Primary School



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

Predicted Price: \$341,562

S\$ 341,562

Recommended Resale Selling Price for Tan Family

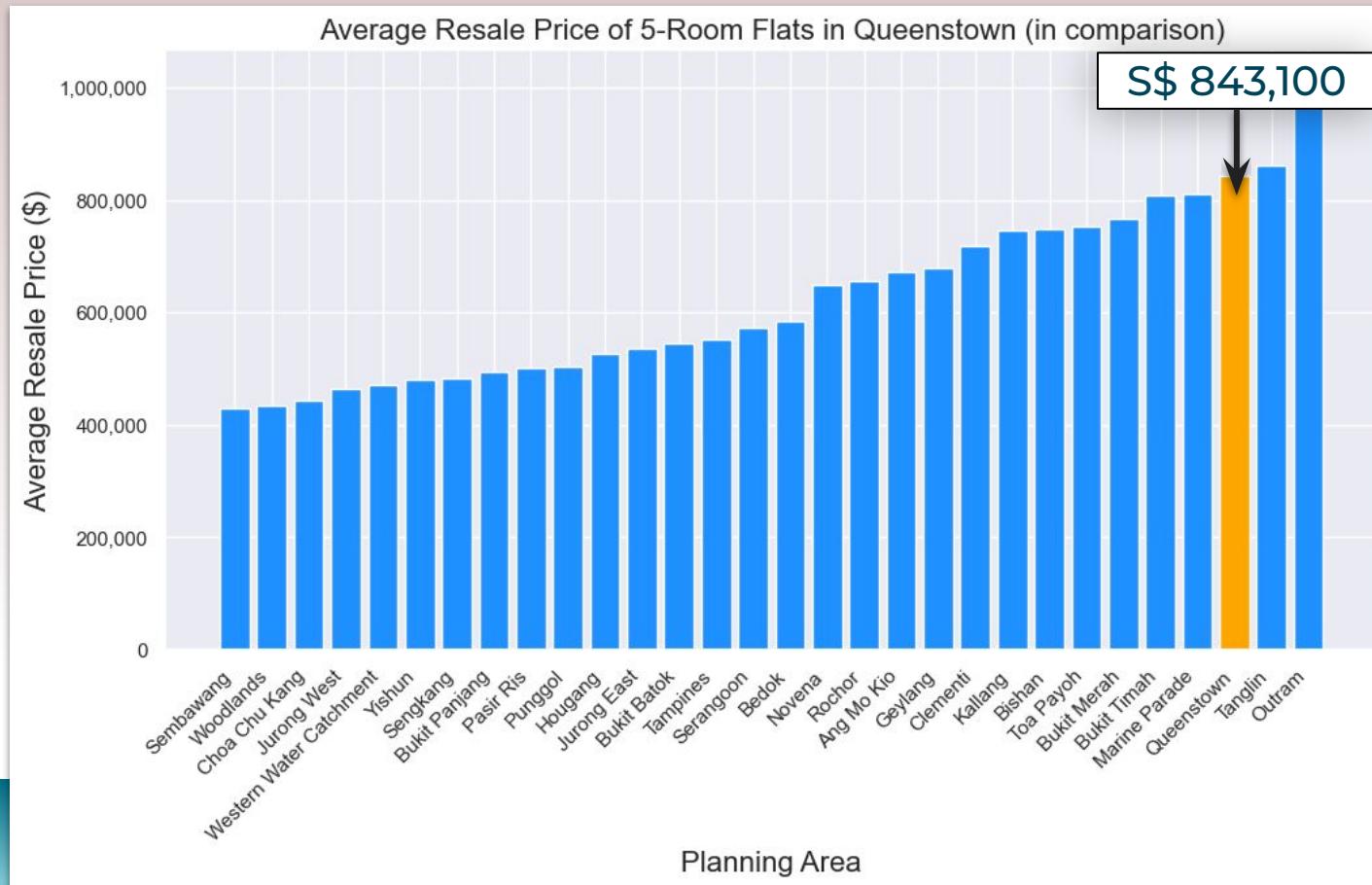


The Tan Family

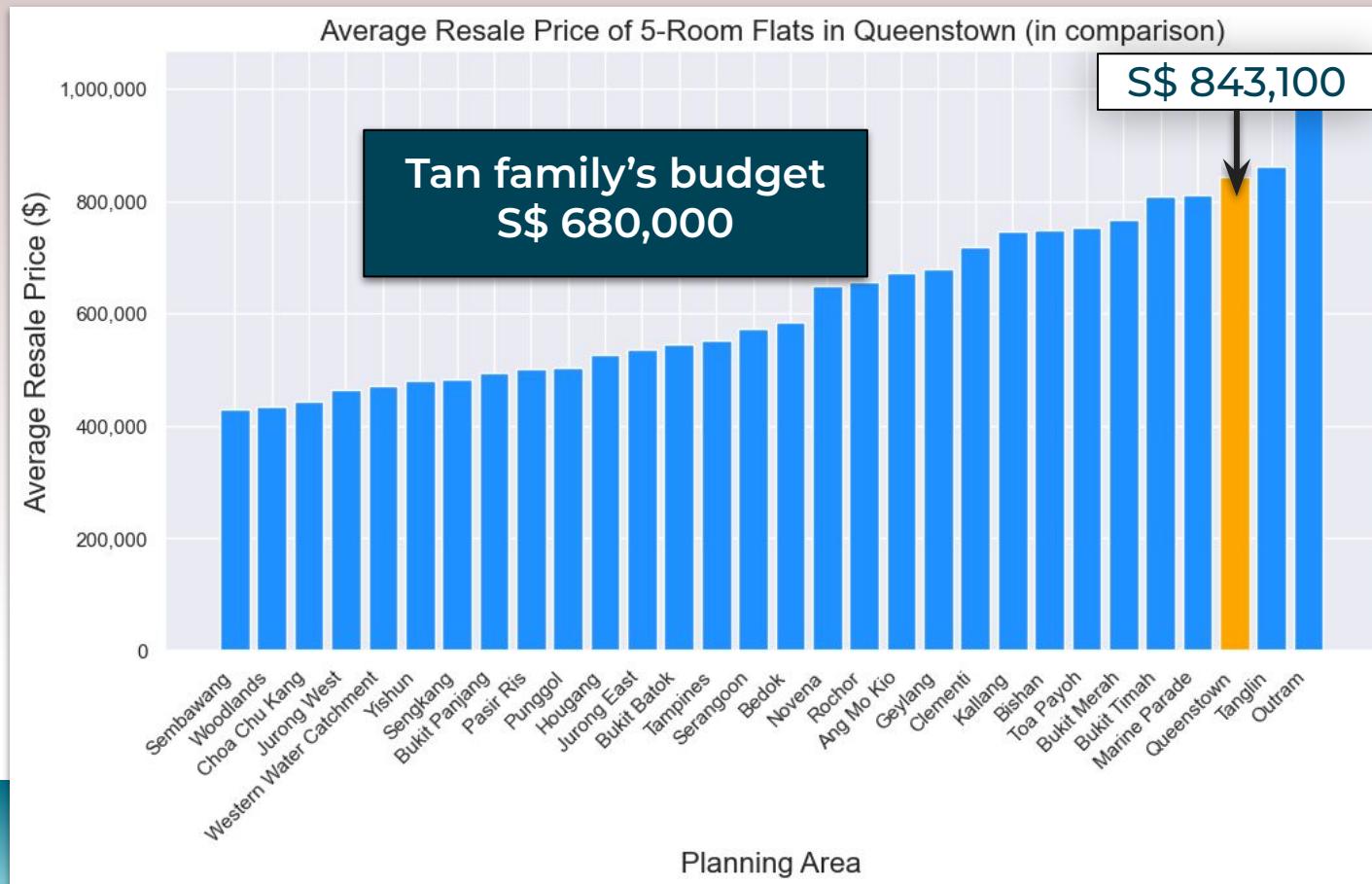
- Selling 3-Room Flat
- **Buying 5-Room Flat**
- Fairfield Methodist Primary School



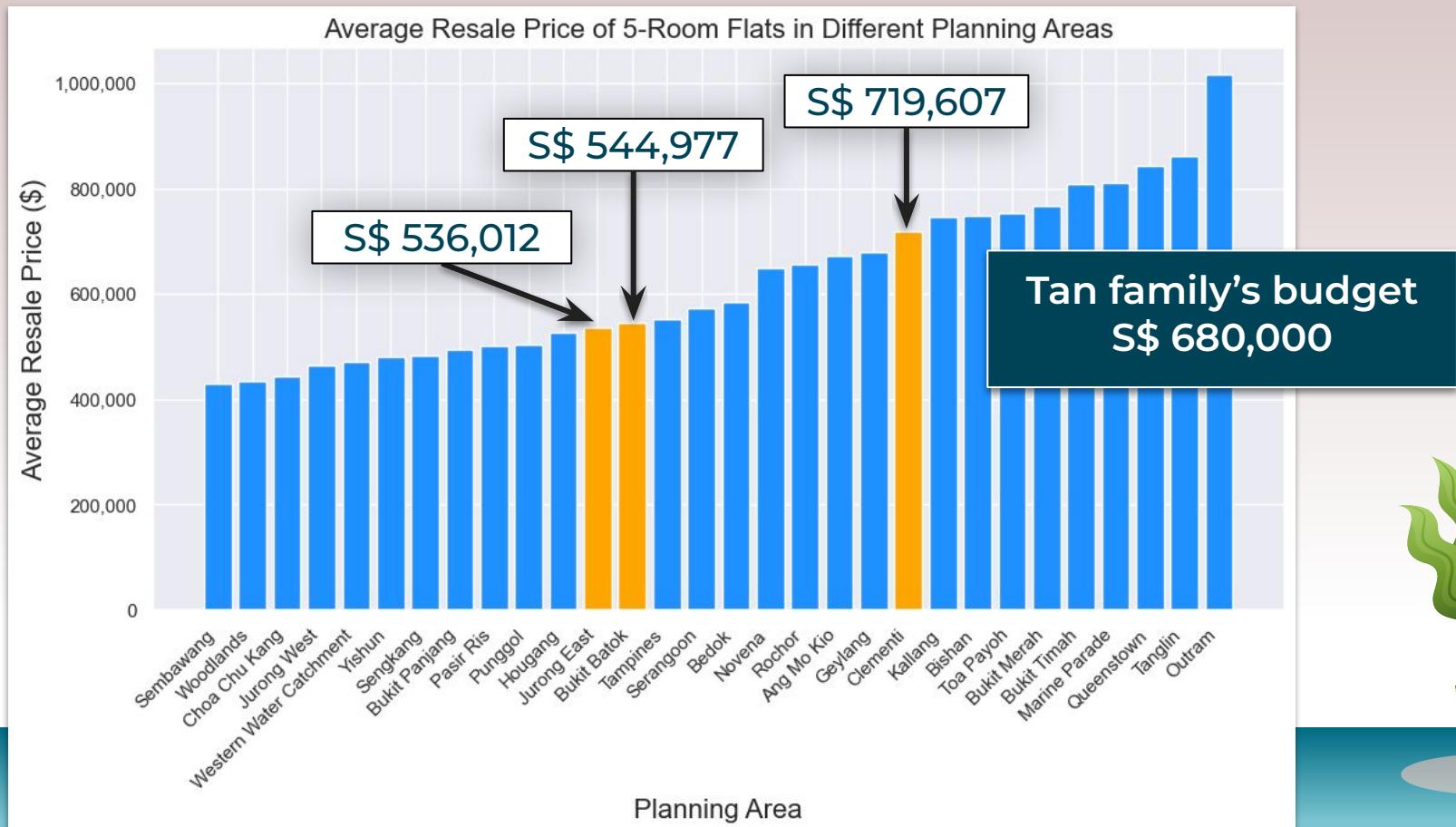
Buying 5-Room Flat in Queenstown



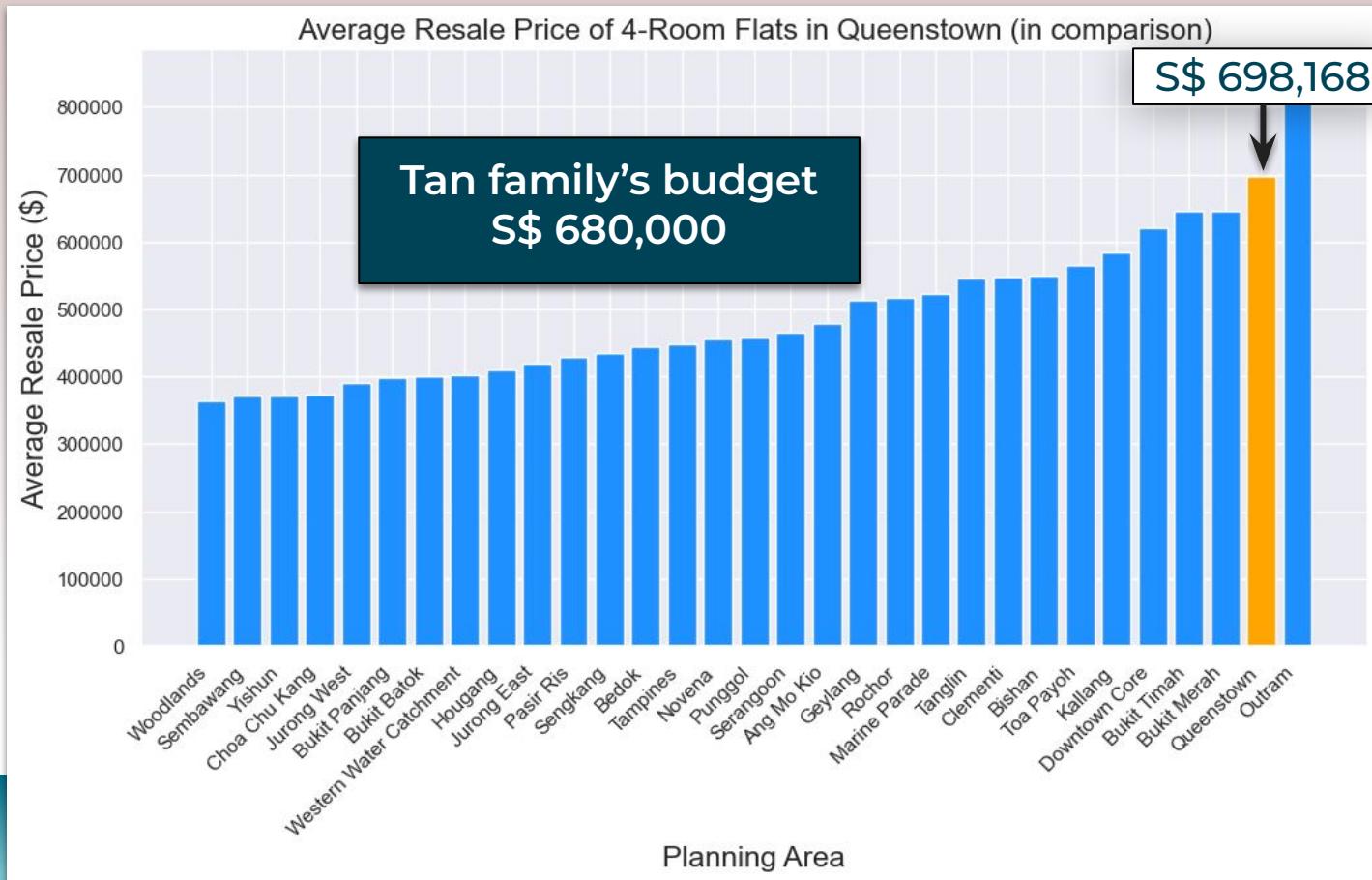
Buying 5-Room Flat in Queenstown



Buying 5-Room Flat in Other Areas



Buying 4-Room Flat in Queenstown



Distance to Fairfield Methodist Pri

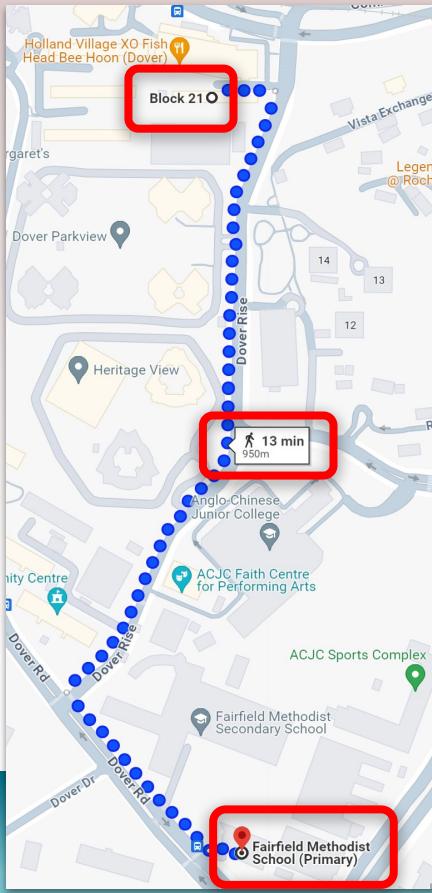


Image source: <https://www.google.com/maps>

Distance to MRT

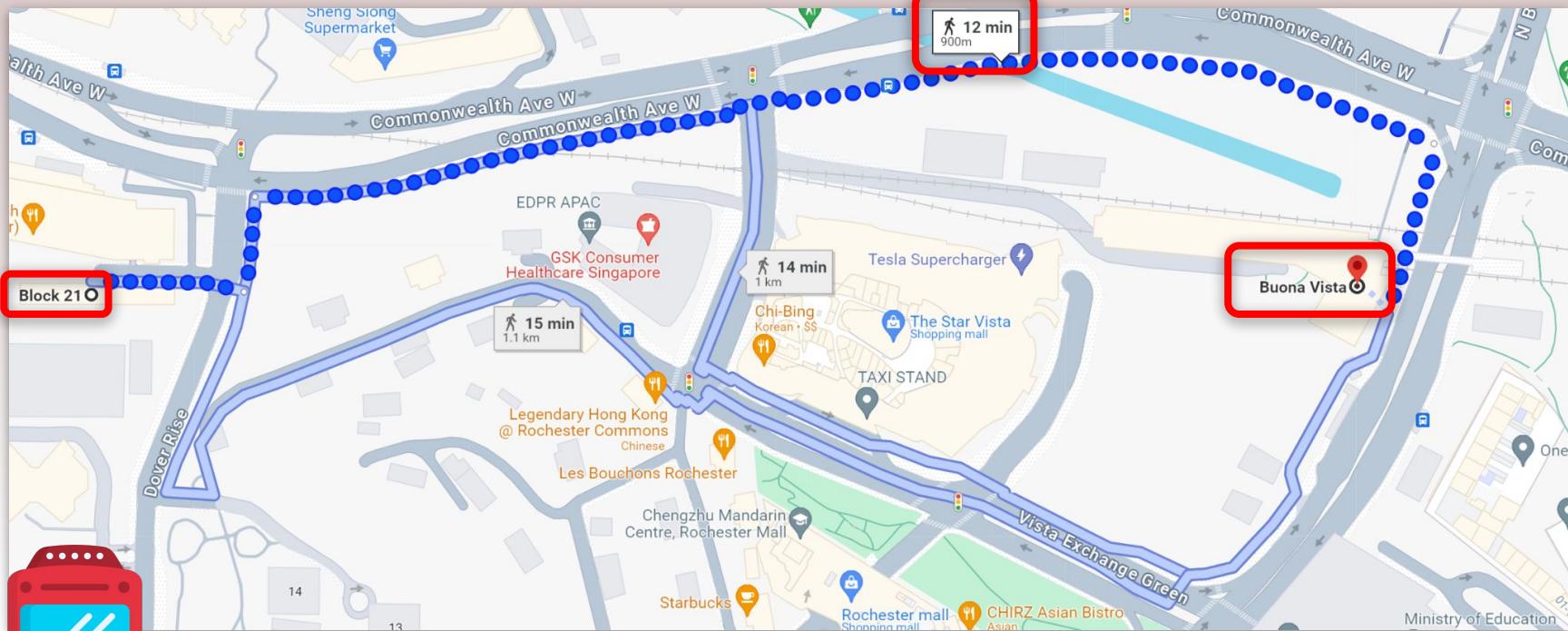


Image source: <https://www.google.com/maps>

Buying 4-Room Flat in Queenstown

Existing app

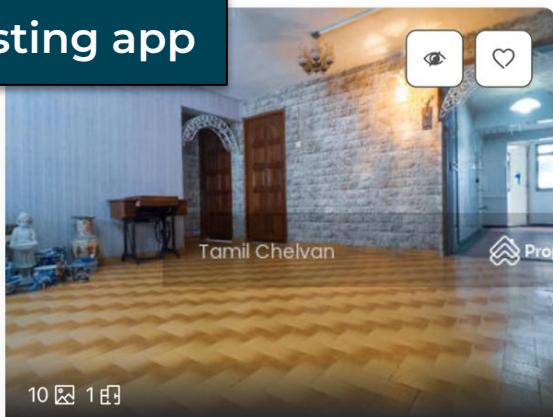


Image source: Property Guru App

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

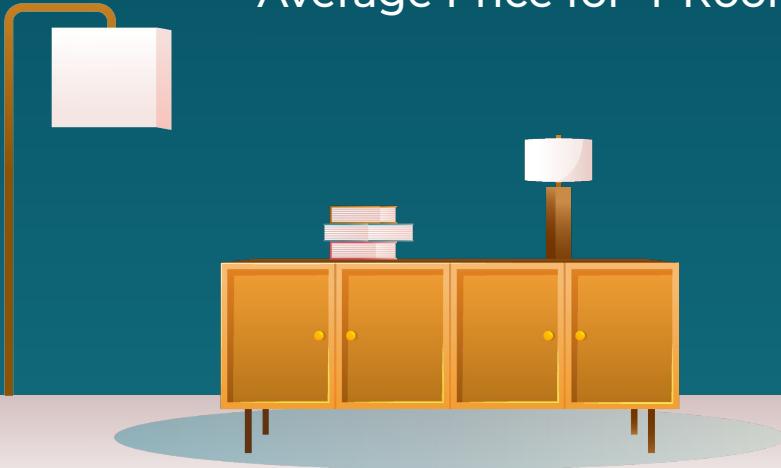
Predict

Predicted Price: \$489,423

S\$ 489,423

Recommended Resale Purchase Price for Tan Family

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

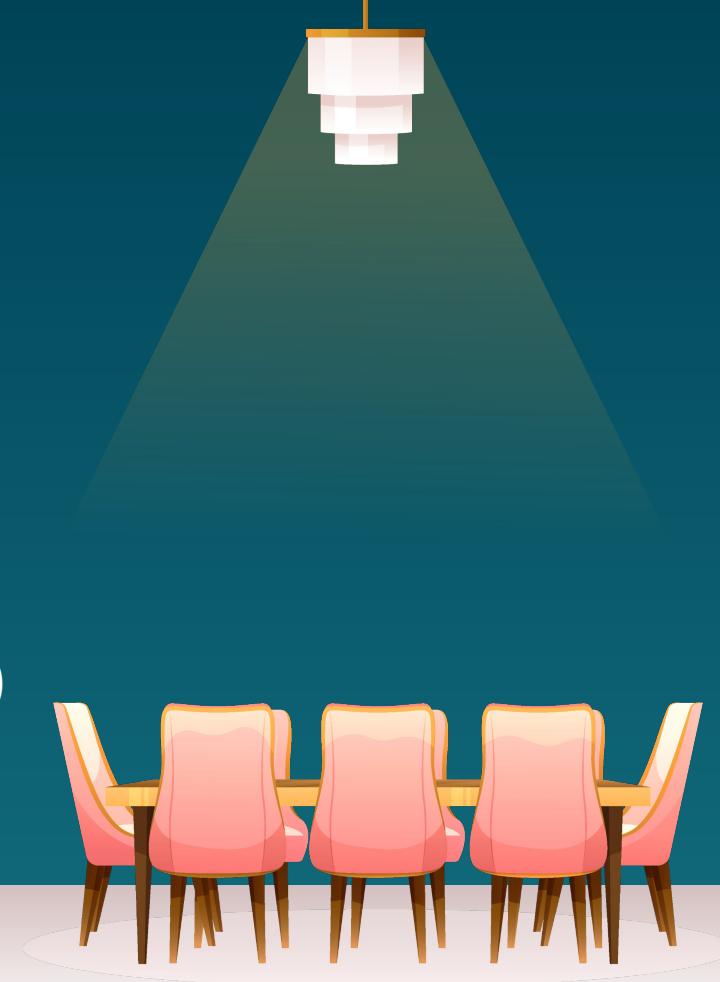


06 Conclusion & Recommendations



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



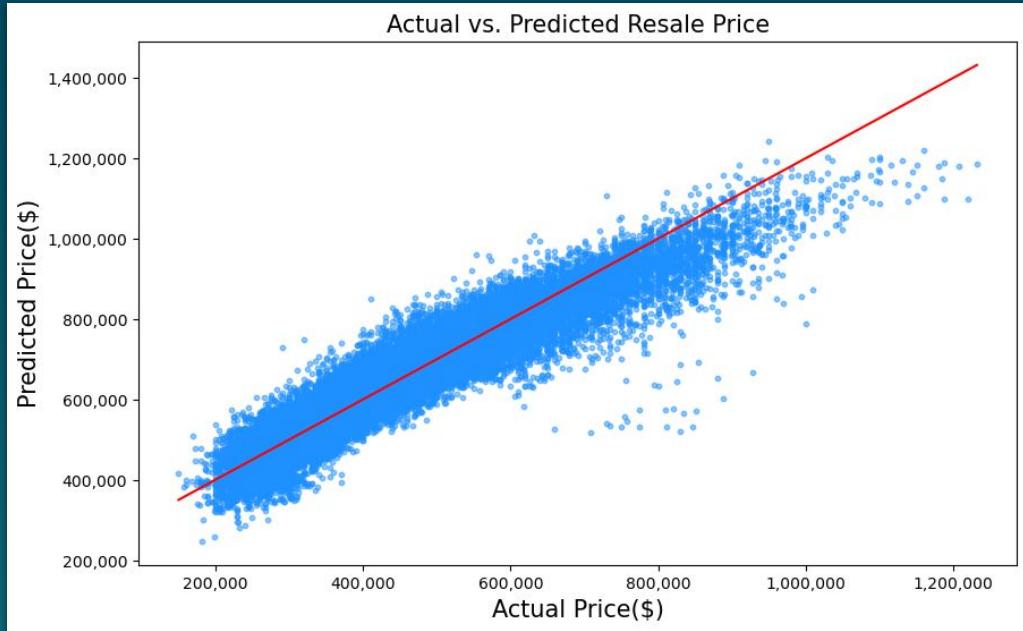
Distance to parks



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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