

Predicting HDB Resale Prices

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Background

Punggol BTO flats further delayed after HDB axes contractor's services over 'unsatisfactory' progress



Five of six blocks under phase two of Punggol Point Cove will be further delayed by three months after the termination of the main contractor's services. ST PHOTO: KUA CHEE SIONG

Source: ST

HDB ballot results for May BTO and SBF exercises delayed till August



An artist's impression of Parc Meadow @ Tengah, which is one of the BTO projects offered at the May launch. PHOTO: HDB

Source: ST

Record resale prices in 17 out of 26 HDB towns in year to date: OrangeTee & Tie

BT

Samuel Oh

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Resale prices have increased for the 13th consecutive quarter, with 105 flats changing hands for at least S\$1 million in Q2. PHOTO: BT FILE

Source: BT

1 in 3 HDB resale flat buyers paid cash over valuation this year, up from 1 in 5 in 2020



From January 2020 to April 2021, fewer than one in four resale flat buyers paid above market valuation for their flat. ST PHOTO: GAVIN FOO

Source: ST

Problem statement

- **Predictive model to estimate price for resale flats**
- **Features that have the greatest impact on resale price**

Data set

- **Transactions from 2012 to 2021**
- **Resale price**
- **Other features:**
 - **Location**
 - **Size**
 - **Accessibility**
 - **Amenities**
 - **Schools**

Exploratory Data Analysis

	Resale Price (\$\$)
Min	150,000
Max	1,258,000
Average	448,661

Fig 1: Distribution of HDB Resale Price

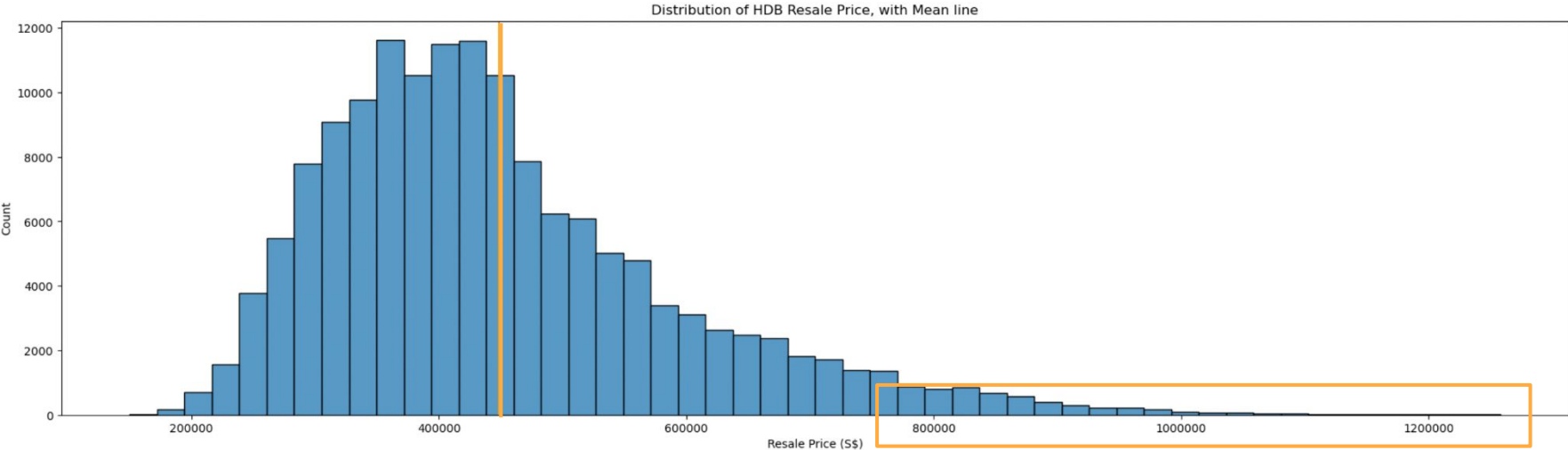
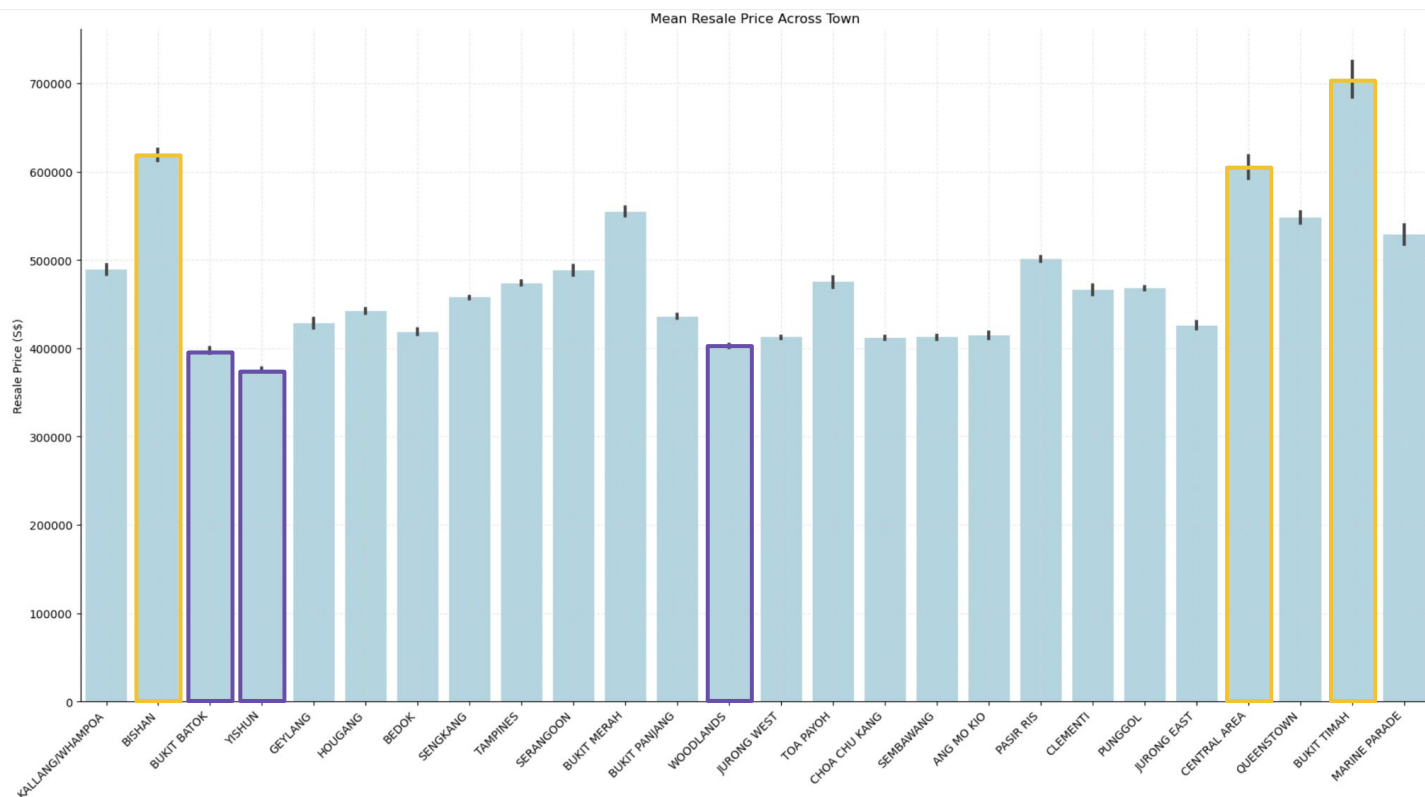


Fig 2: Mean Resale Price Across Towns



Top three average resale prices:

1. Bukit Timah
2. Bishan
3. Central Area

Bottom three average resale prices:

1. Yishun
2. Bukit Batok
3. Woodlands

Fig 3: Mean Resale Price Across Floor Area

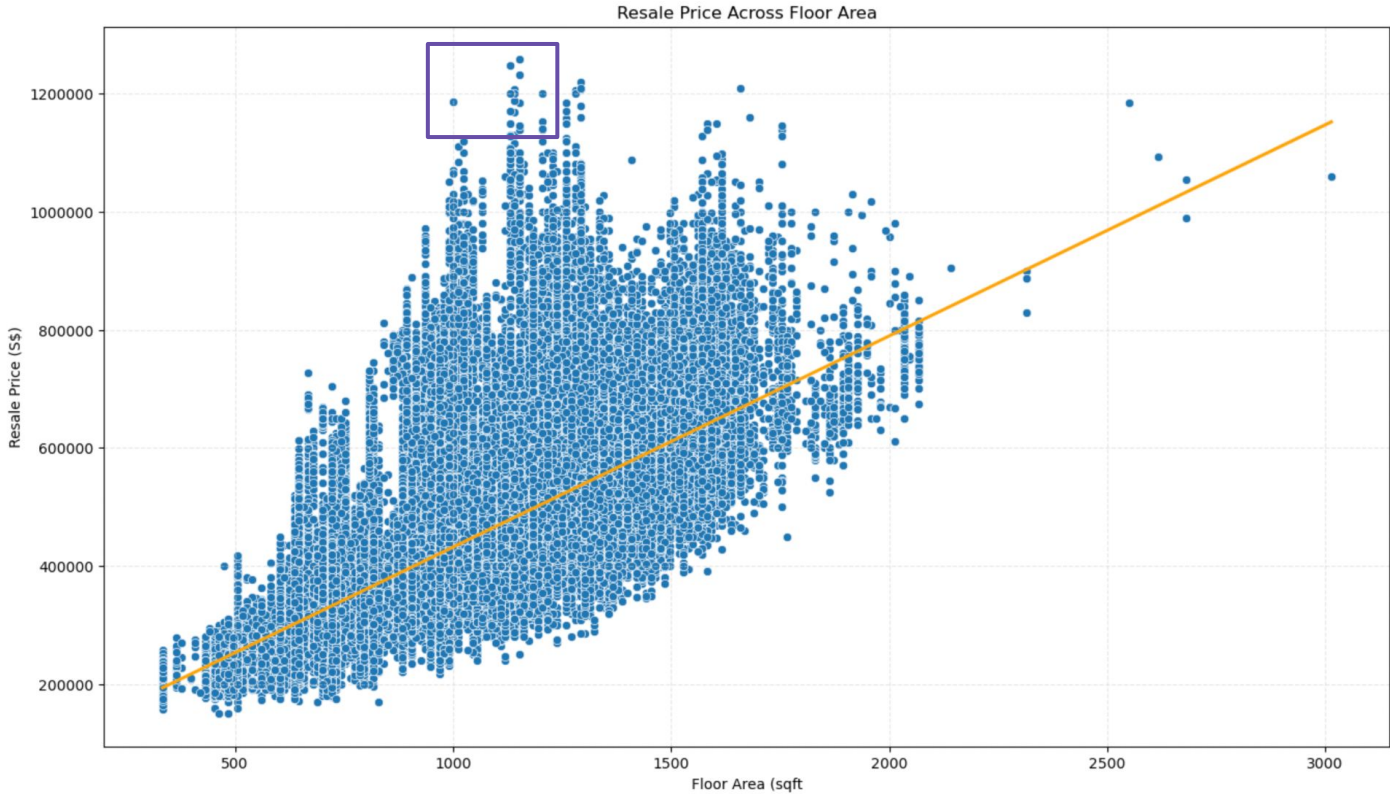
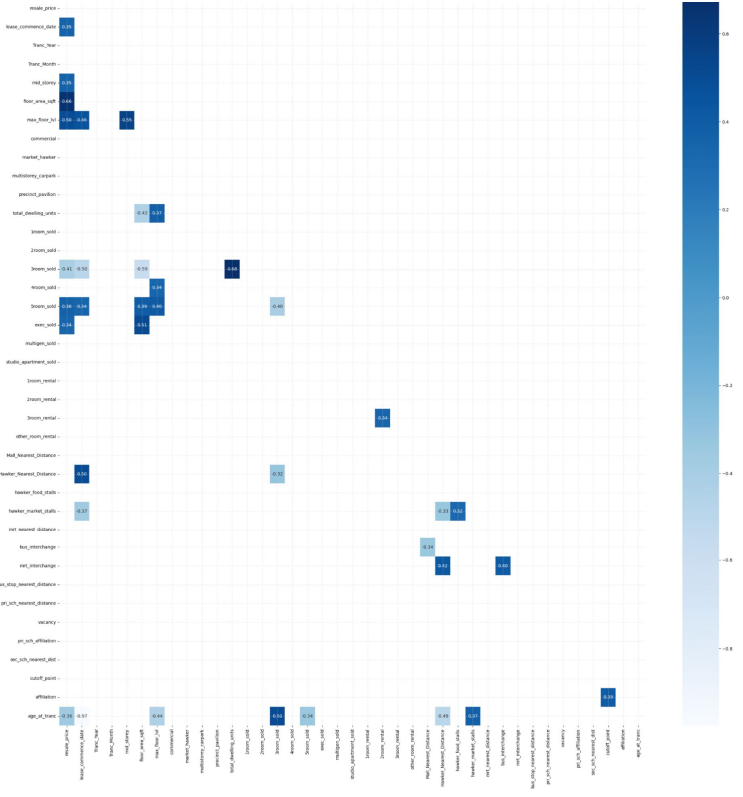


Fig 4: Correlation Heat Map



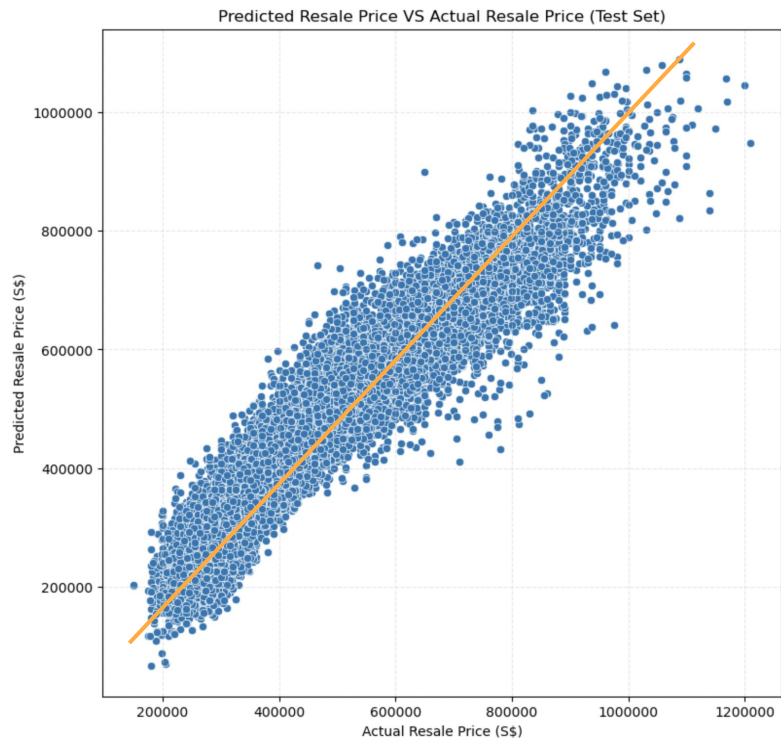
	Resale Price
Unit level	0.35
Floor area	0.66
Max. no. of levels	0.5
No. of 3-room units	-0.41
No. of 5-room units	0.36
No. of executive units	0.34
HDB age at year of transaction	-0.36

Evaluating models

	R-square score	RMSE score
Linear Regression	0.89307	46,832
Ridge Regression	0.89309	46,836
Lasso Regression	0.88733	48,072

Testing the models

Figs 5: Predicted VS Actual Resale Price on Test Set



	R-square score	RMSE score
Test set	0.89235	46,988
Independent test	NA	46,689

Features with greatest impact on resale price

- **Location**
- **Flat size**
- **Flat model**

Conclusion

Investment:

- **Regional hubs, proximity to central area**
- **Bigger is better**
- **DBSS, Maisonettes, Terraces**

Forever home:

- **Prioritise between location and size**
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