



Project II: HDB Resale Price Prediction

Ameer
Benjamin
Leonard
Wei Yu

Problem Statement

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How can we offer competitive pricing advice for clients looking to buy or sell HDB resale flats?



Agenda

01

Overview of Dataset and Limitations

02

Exploratory Data Analysis

03

Predictive Modelling (App) and Recommendations

04

Retrospective

Dataset Overview

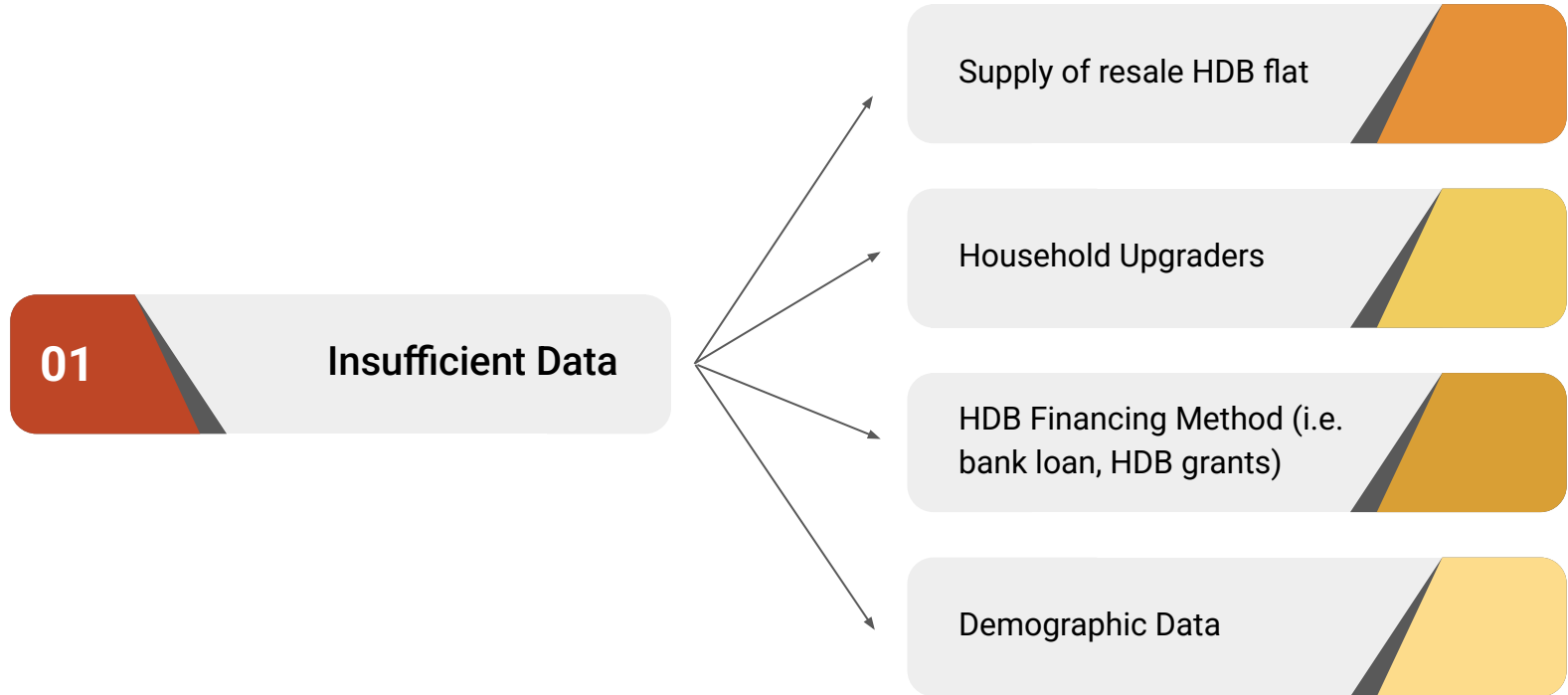


Original: 150634 rows, 78 columns

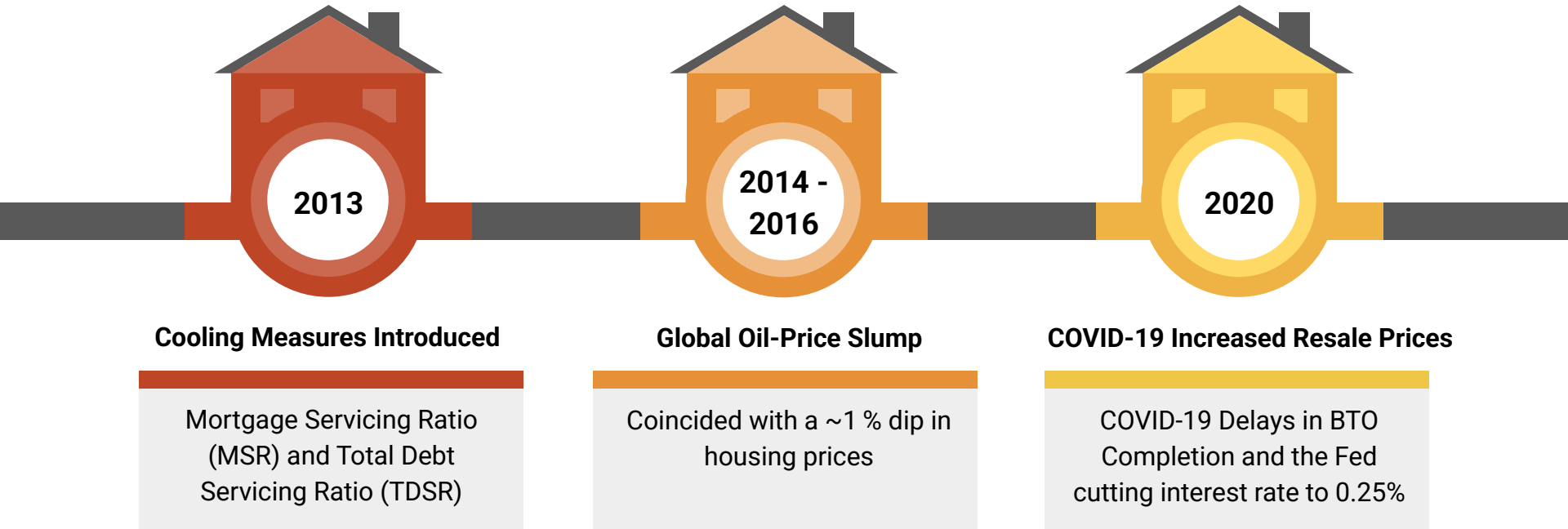
After: 103104 rows, 45 columns

- Removed **irrelevant** columns and **outliers**
- Checked for **nulls** and dropped them
- **Created** a table containing average mall nearest distance by town
- **Fill** empty values in the mall nearest distance with the average mall nearest distance by town

Dataset Limitations



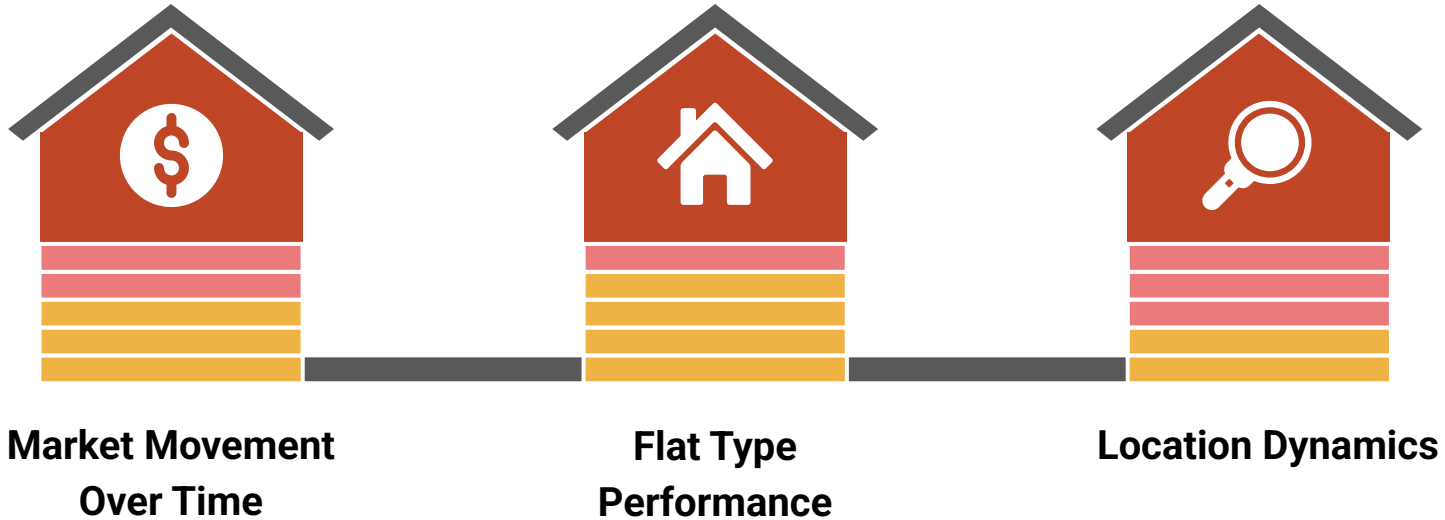
External Factors (Government Policies)



ABSD for Singaporean Citizens

	From 8 Dec 2011	On or before 5 July 2018	On or after 6 July 2018	On or after 16 Dec 2021	On or after 27 Apr 2023
Second property	3%	7%	12%	17%	20%
Third and more	3%	10%	15%	25%	30%

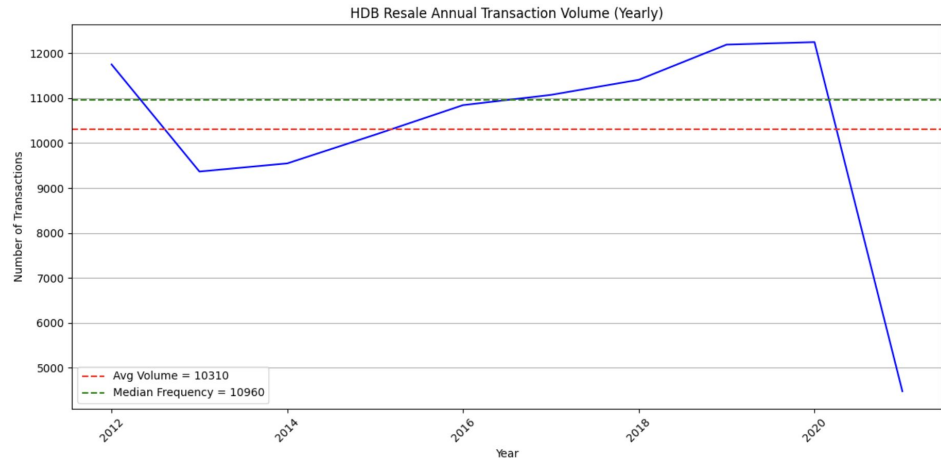
Exploratory Data Analysis



EDA: Market Movement Over Time



HDB Resale Prices and trends over time

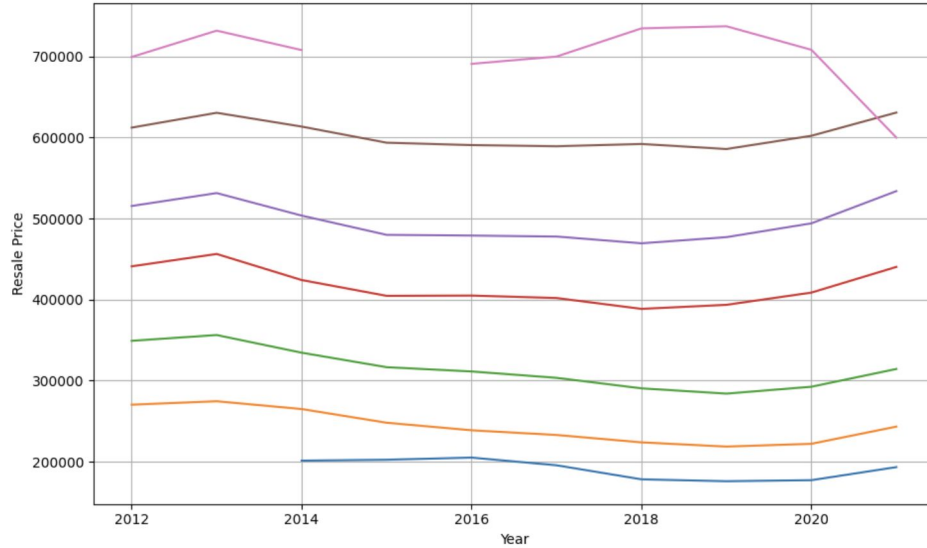


Average Transaction Volume and Frequency Over Time

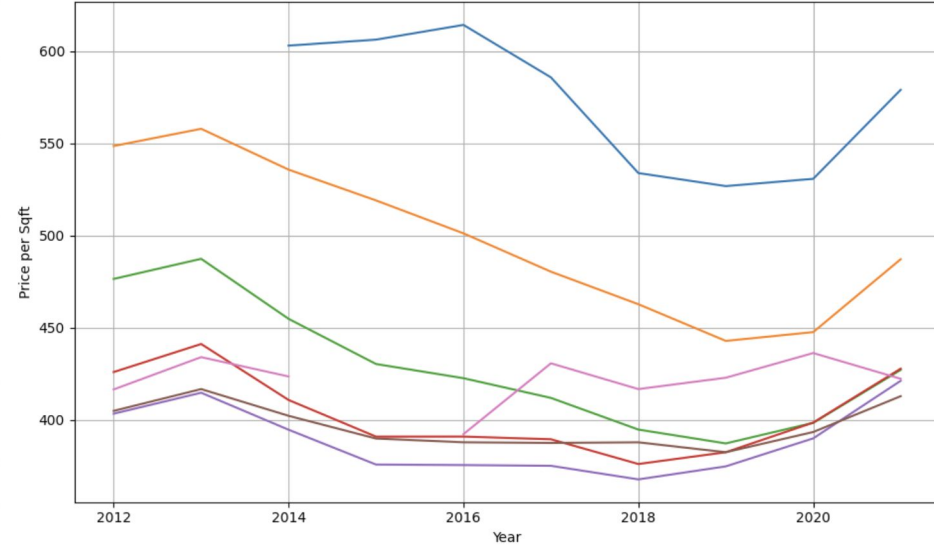
EDA: Flat Type by Performance



Average Resale Price per Flat Type Over Time

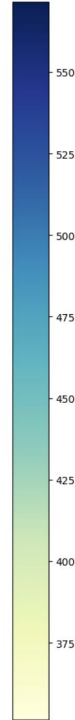
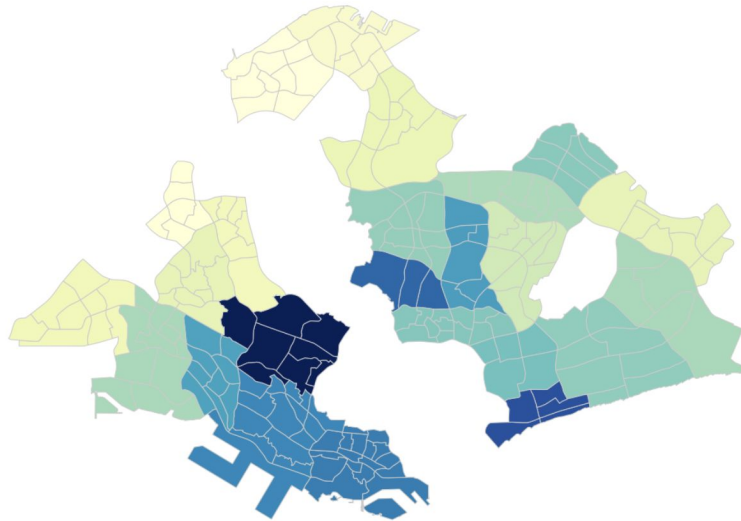


Average HDB Price per Sqft by Flat Type Over Time

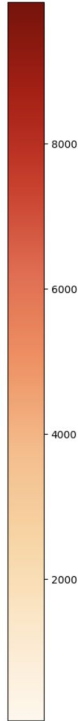
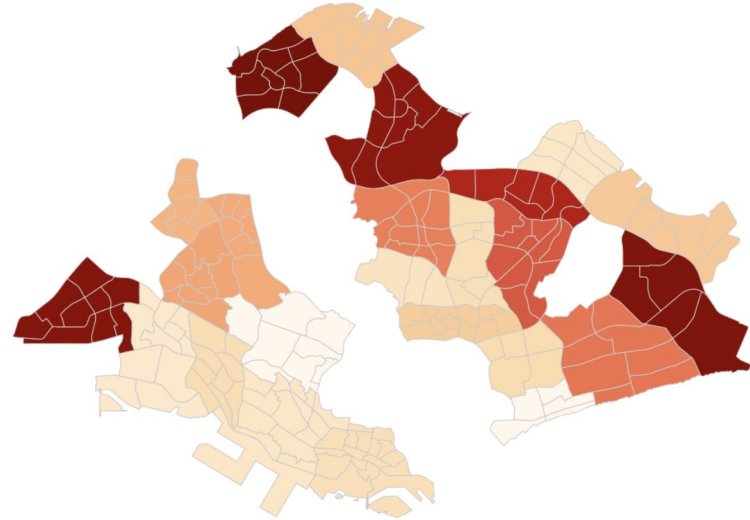


EDA: Location Dynamics

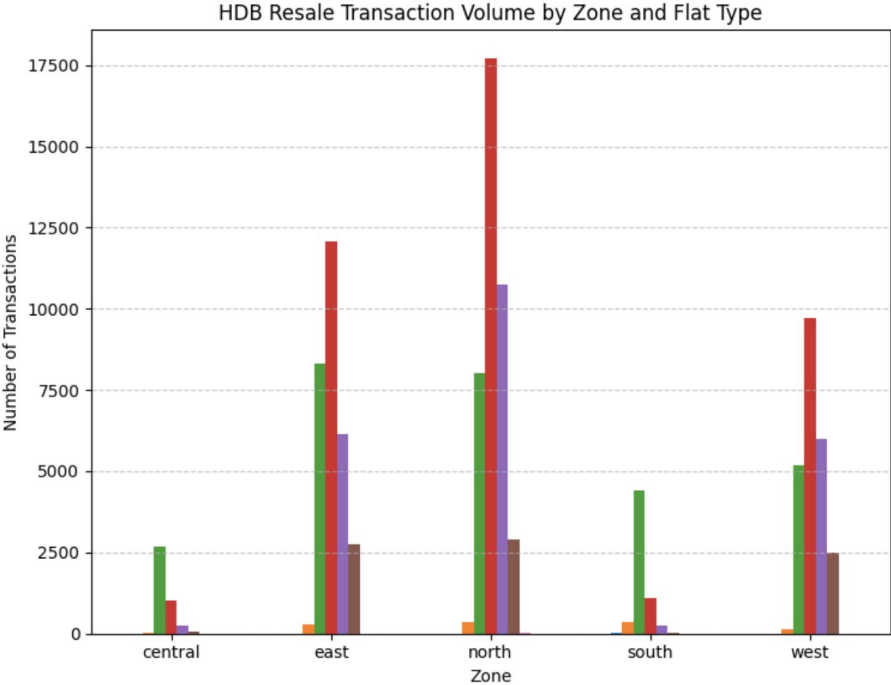
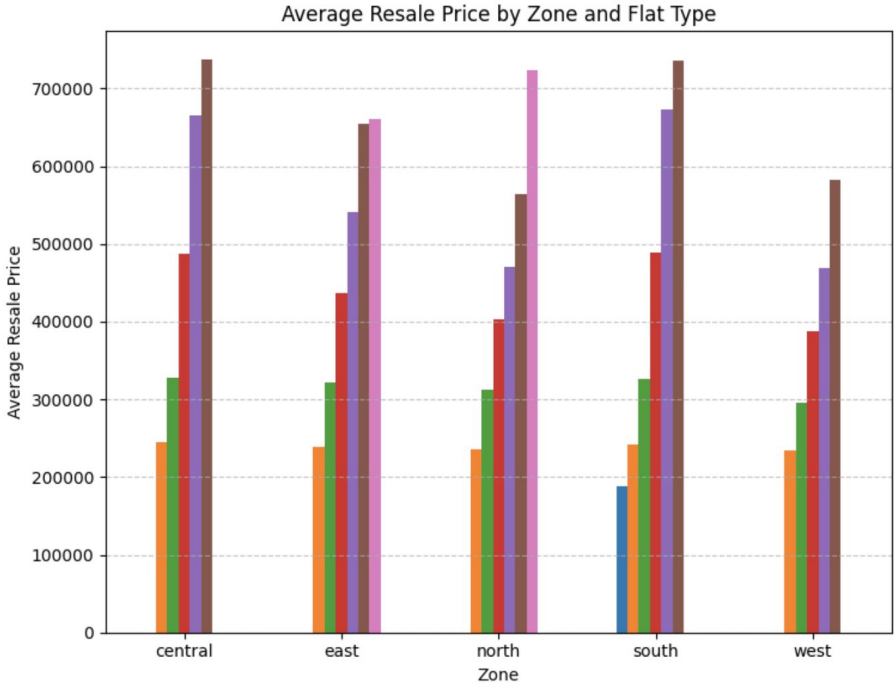
Average HDB Price per Sqft by Town



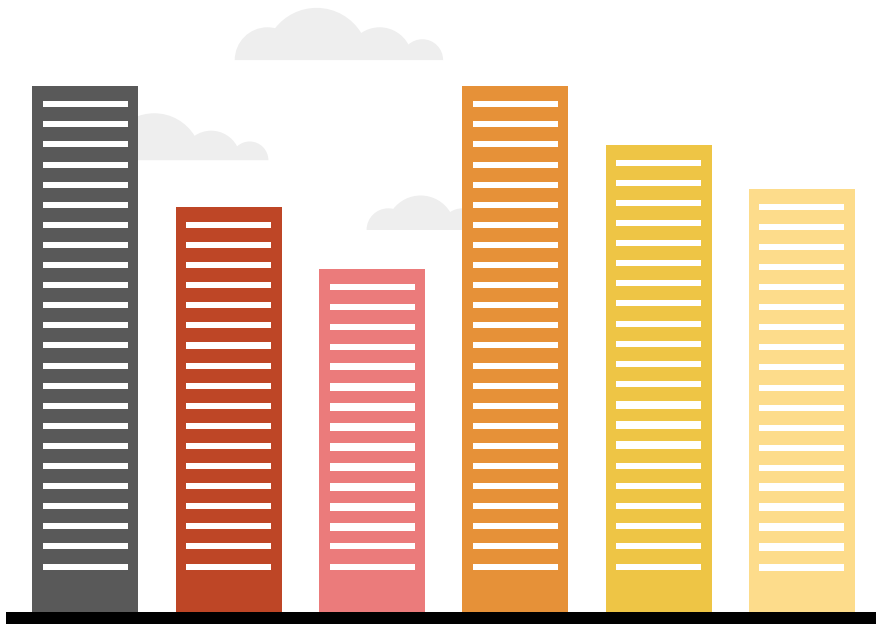
HDB Resale Transaction Volume by Town



EDA: Location Dynamics



Predictive Modelling: Choosing Numerical Features



floor_area_sqm **0.72**

exec_sold **0.46**

5room_sold **0.30**

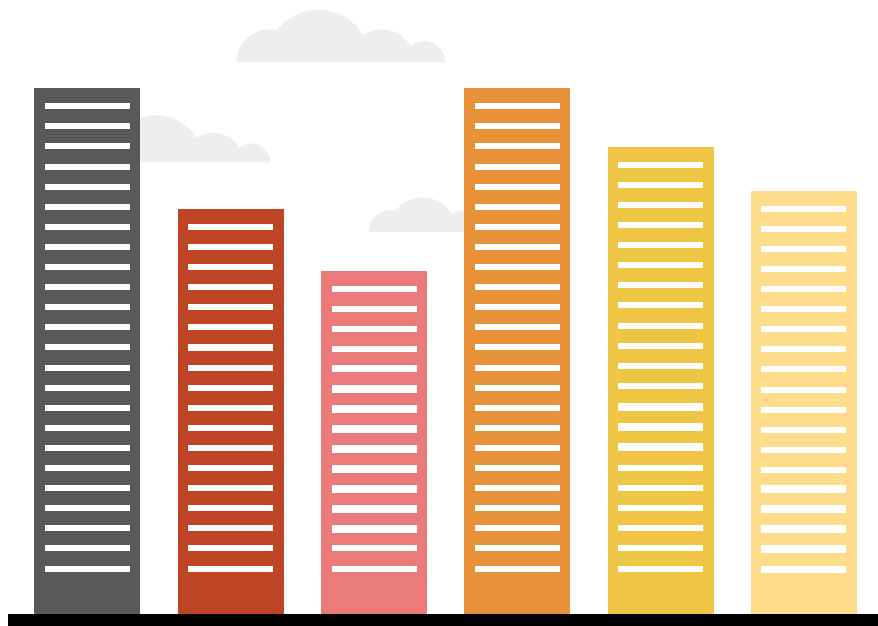
max_floor_lvl **0.23**

hdb_age **-0.36**

total_dwelling_units **-0.42**

3room_sold **-0.49**

Predictive Modelling: Choosing Categorical Features



north **39724**

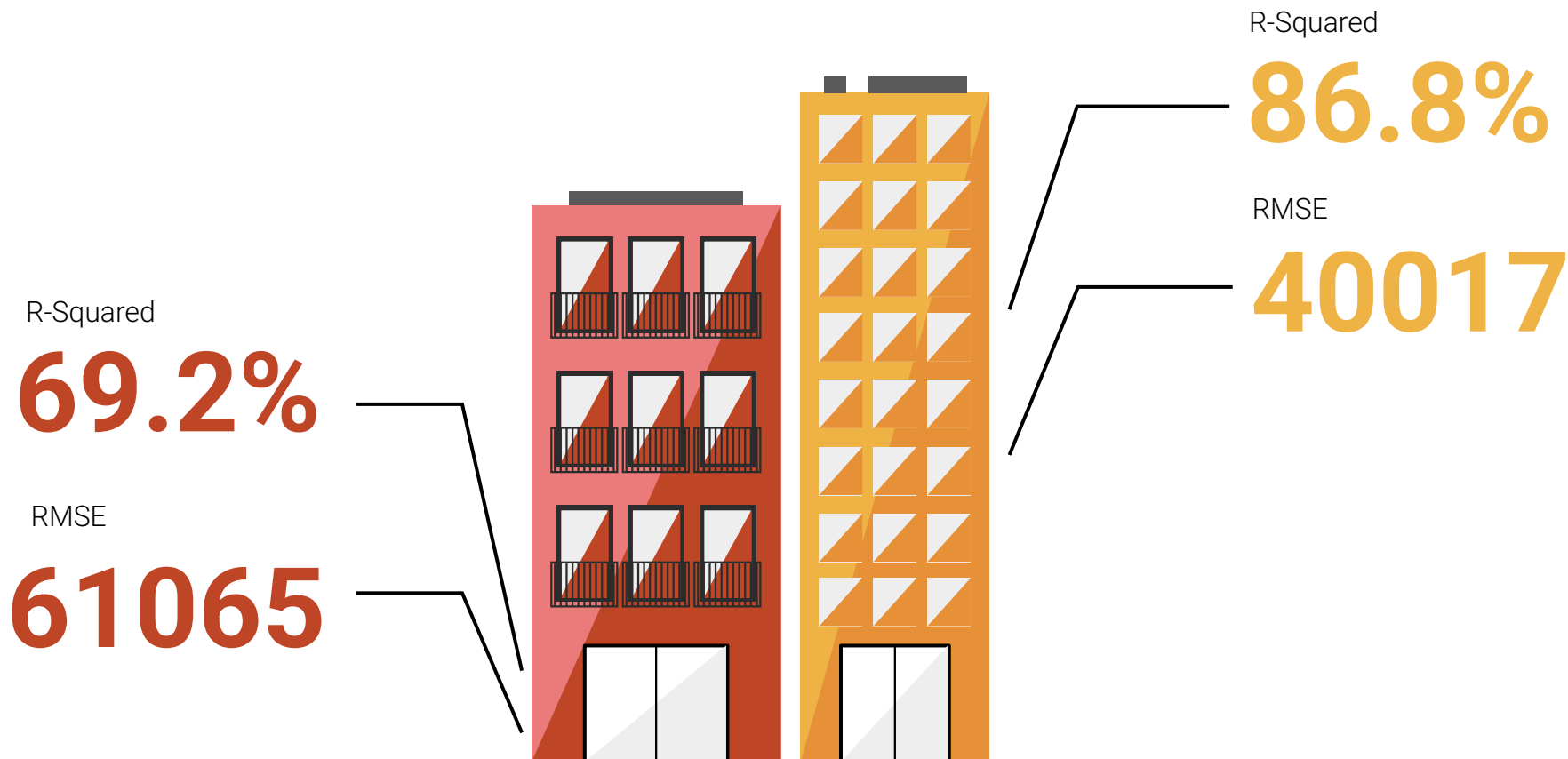
east **29555**

west **23518**

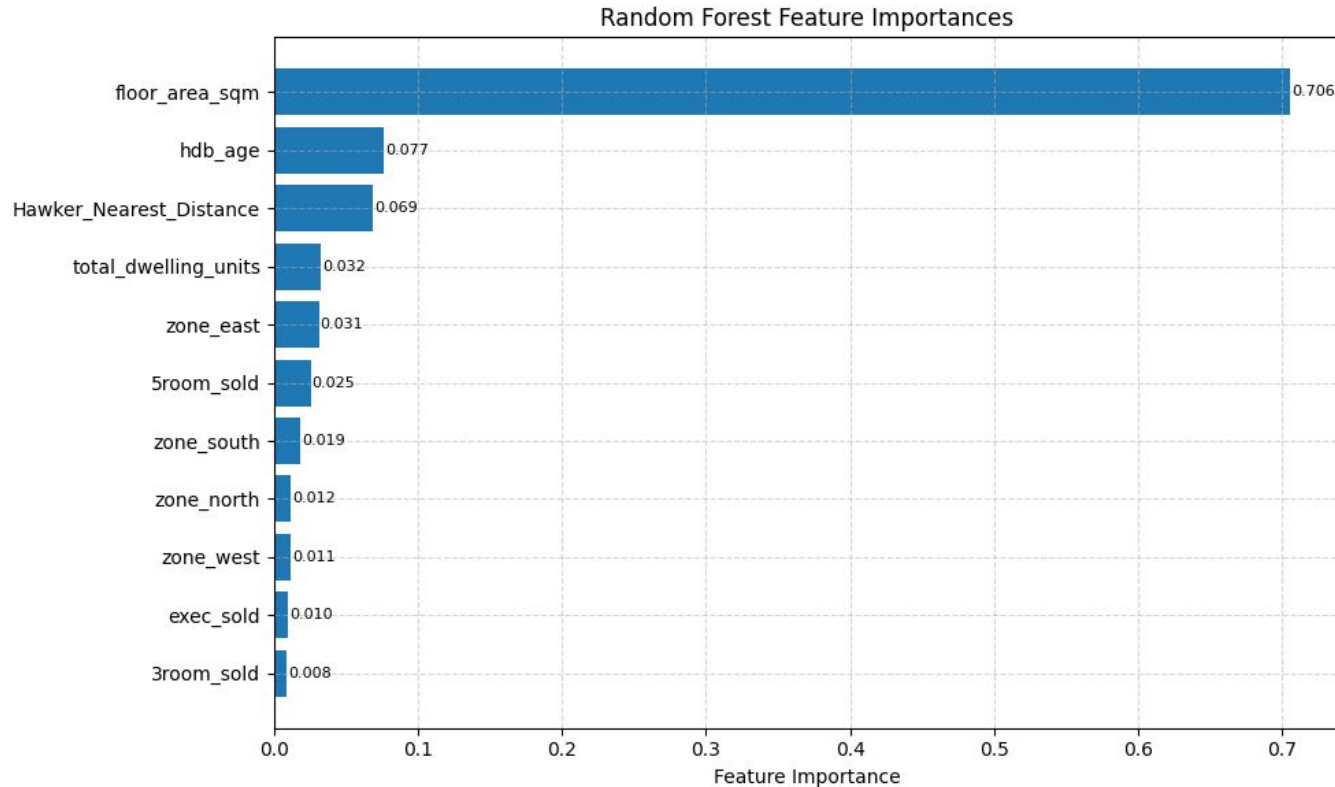
south **6203**

central **4033**

Linear Regression v.s. Random Forest



Predictive Modelling: Features Importance



Price Prediction App



HDB Resale Price Predictor

Please fill in the values below to predict the resale price:

Floor Area (sqm)

80

- +

Executive Flats Sold Nearby

0

- +

5-Room Flats Sold Nearby

0

- +

3-Room Flats Sold Nearby

0

- +

Max Floor Level

12

- +

Age of the HDB (years)

30

- +

Total Dwelling Units in Block

100

- +

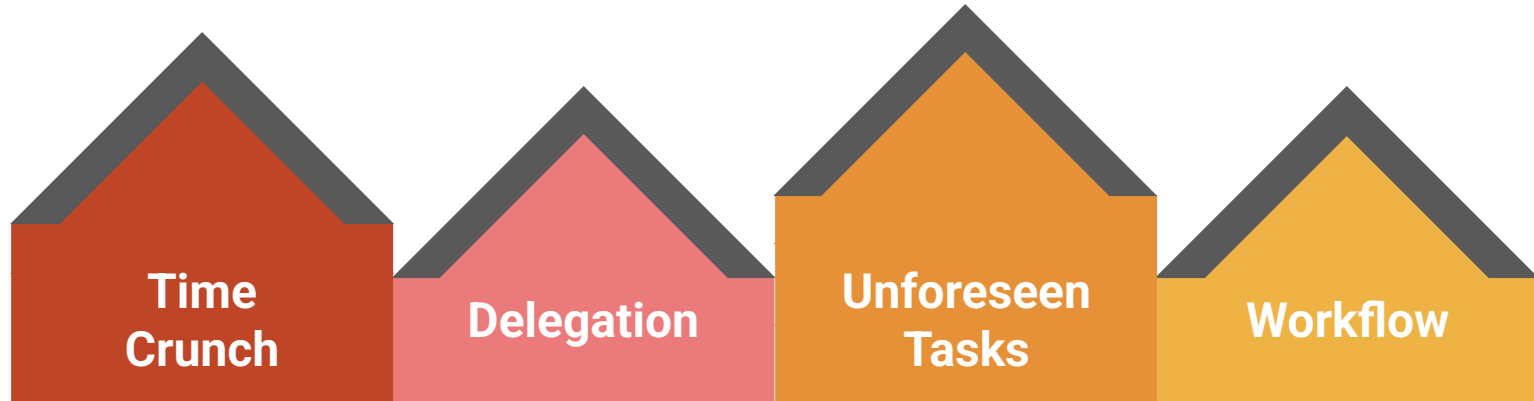
Town Region

North



Predict

Challenges



Proactiveness

Collaborative Spirit

Taking Initiatives

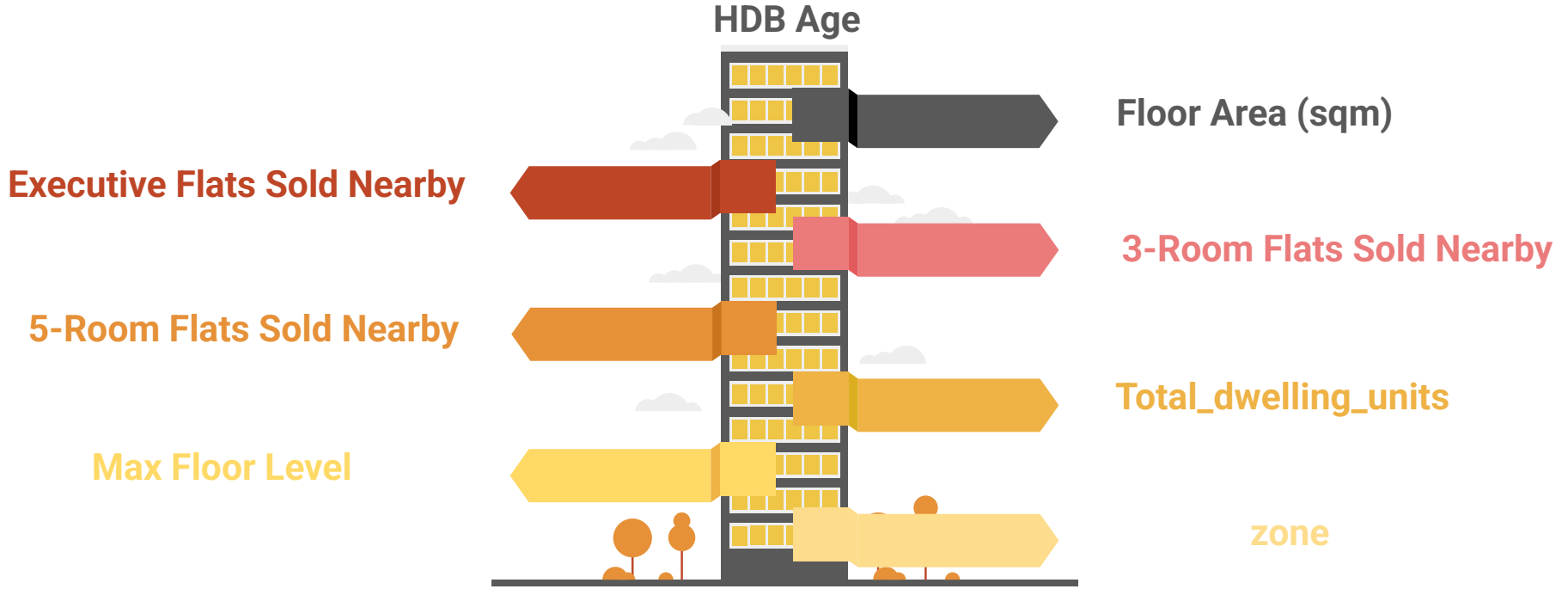
System Developed

Future Steps



- 1 Project Management
- 2 Time Allocation
- 3 Code Practices
- 4 Workflow Optimization

Recommendation



Conclusion

By implementing the recommendations, we can establish a business model that not only guides buyers and sellers but also builds long-lasting relationships based on trust and transparency.

Trello

