

# Make the most of your money: **'Hacking'** Housing Prices

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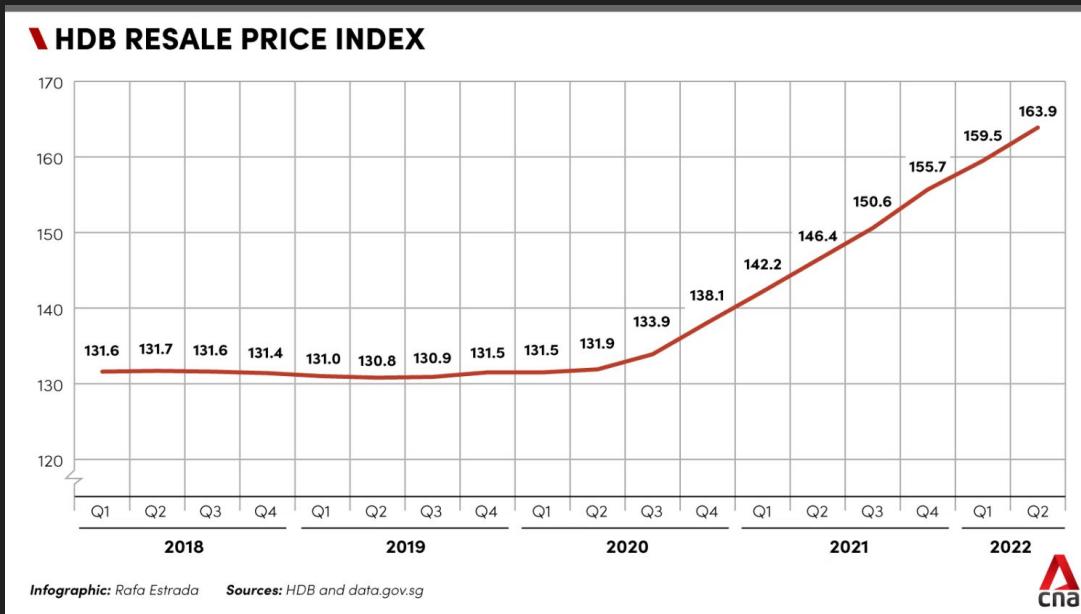


01

# Introduction & Workflow



# Increasing trend of resale prices

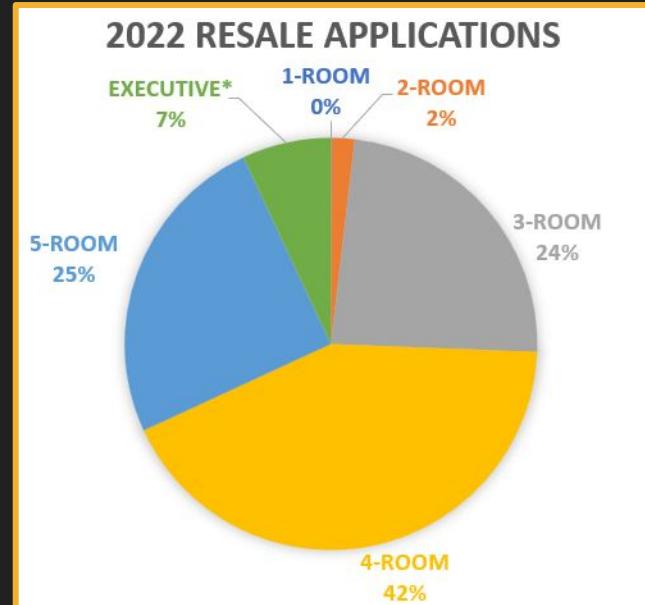


Resale prices increased 2.8% quarterly on average since 2020

Source: CNA and HDB

# Drivers for resale flats demand

- Lesser waiting time
- More spacious
- Closer to parents home
- Lesser renovation cost
- Increased CPF grant for families buying 4 or 5 Room flats
- More amenities



Source: HDB

# Problem statement

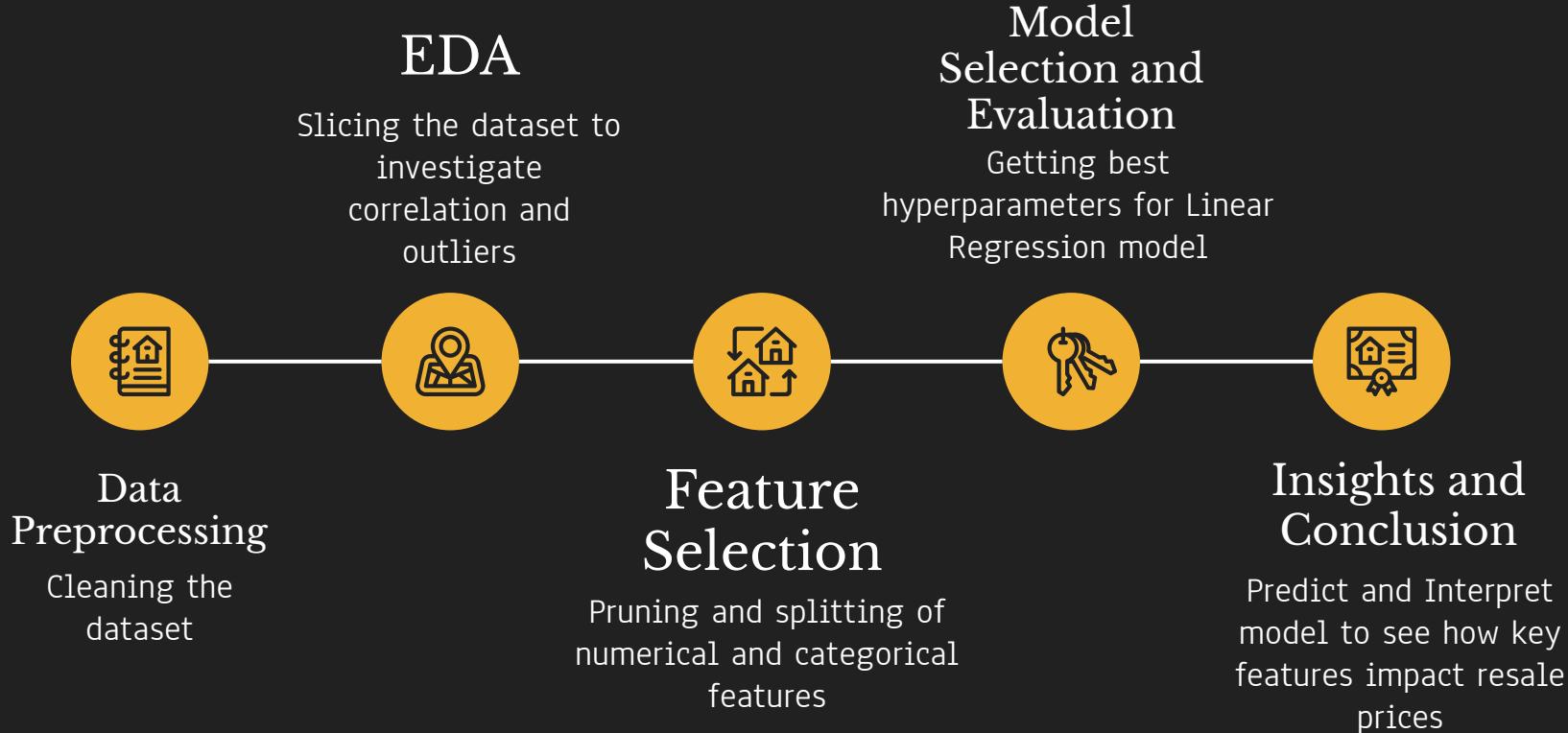
Analyse key features impacting Singapore HDB resale prices to help buyers estimate budget, and help sellers gauge flat's value to see if the prices quoted are reasonable.



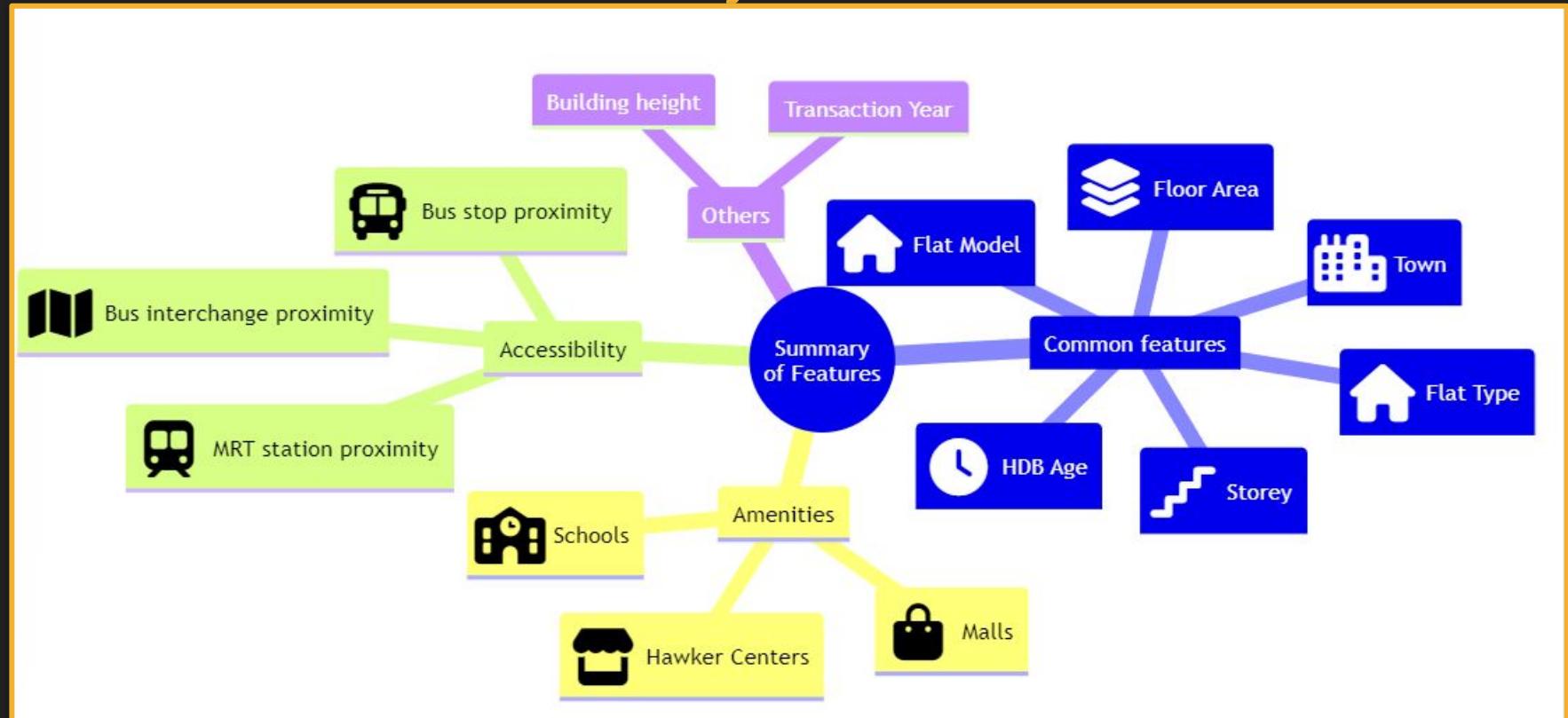
# Our scope

	Objective	Limitations	Assumption
Prospective Buyer	Predict budget for buying a flat of choice	Different buyer's needs may not be catered in a generalised model	Model is robust enough to keep buyer specific or macroeconomic variables within the error margin
Property owner	Estimate property value	Economic and infrastructure changes with time is not included	

# Our workflow



# Summary of Features



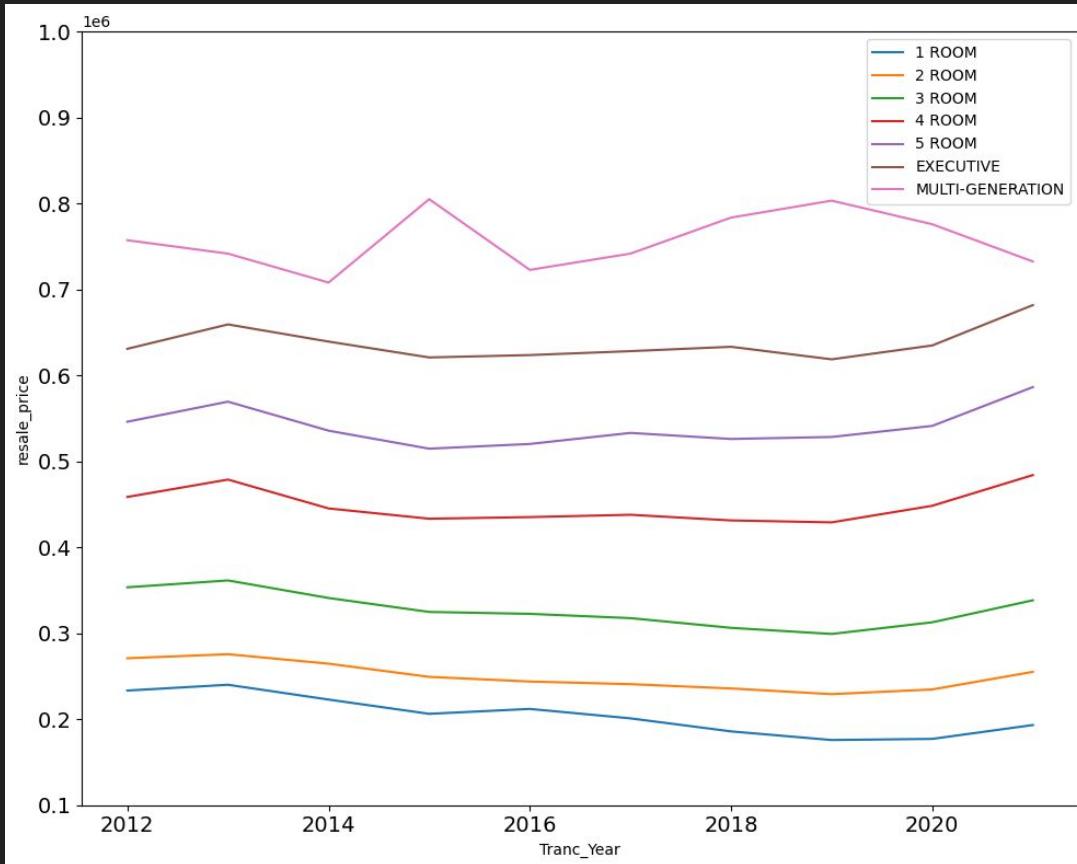


02



## Analysis

# Average Resale Price Yearly Basis



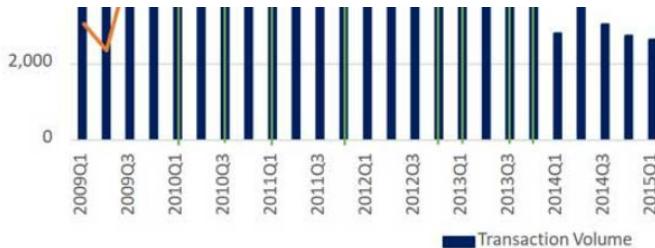
- Price ↑ as Room ↑
- Constant for Bigger Rooms 2013 onwards
- Slight Decrease for Smaller Rooms 2013 onwards

# “HELL FREEZES OVER!!

## History of Cooling Measures



**Total debt servicing ratio (TDSR)** refers to the portion of a borrower's gross monthly income that goes towards repaying the monthly debt obligations, including the loan being applied for. A borrower's TDSR should be less than or equal to 55%.



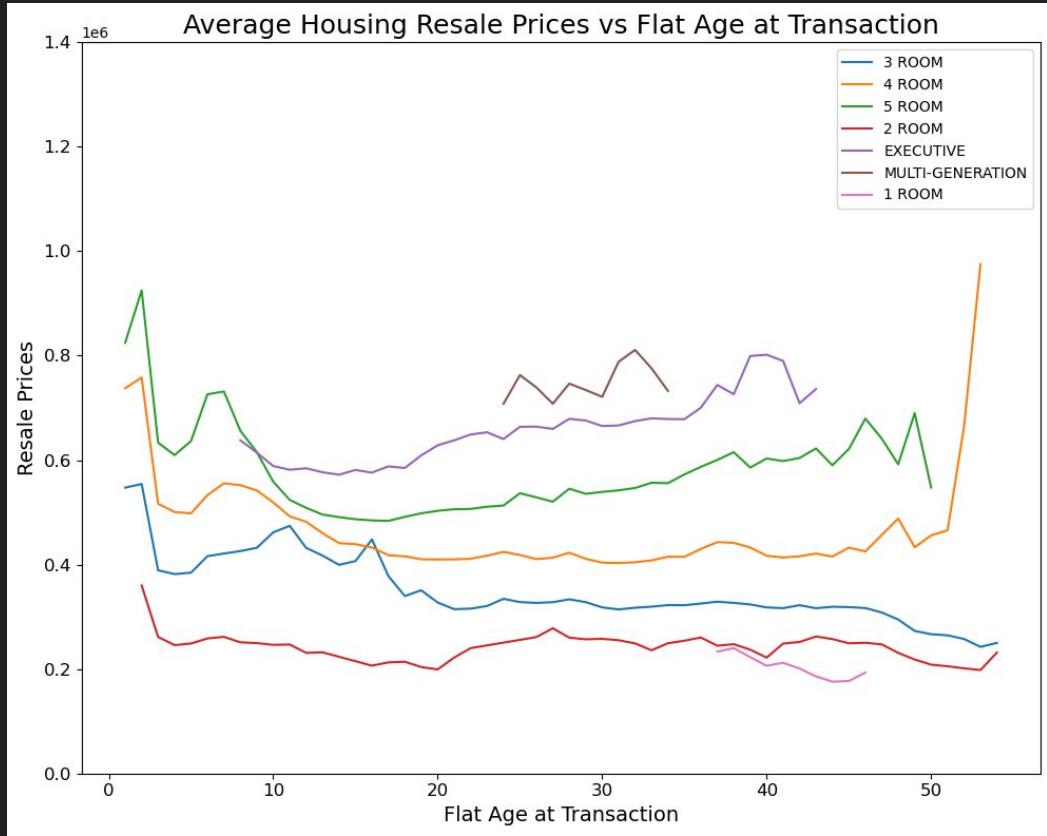
Source: URA, Huttons Research

Jun 2013

MAS's new debt servicing framework stipulates the minimum standards of how financial institutions calculate the Total Debt Servicing Ratio (TDSR) and plugs loopholes that existed previously.

- Reduction in the Debt Servicing Ratio to 30%.
- PRs who own a HDB flat are disallowed from subletting their whole flat.
- PRs who own a HDB flat must sell their flat within six months of purchasing a private residential property.

# HDB Age

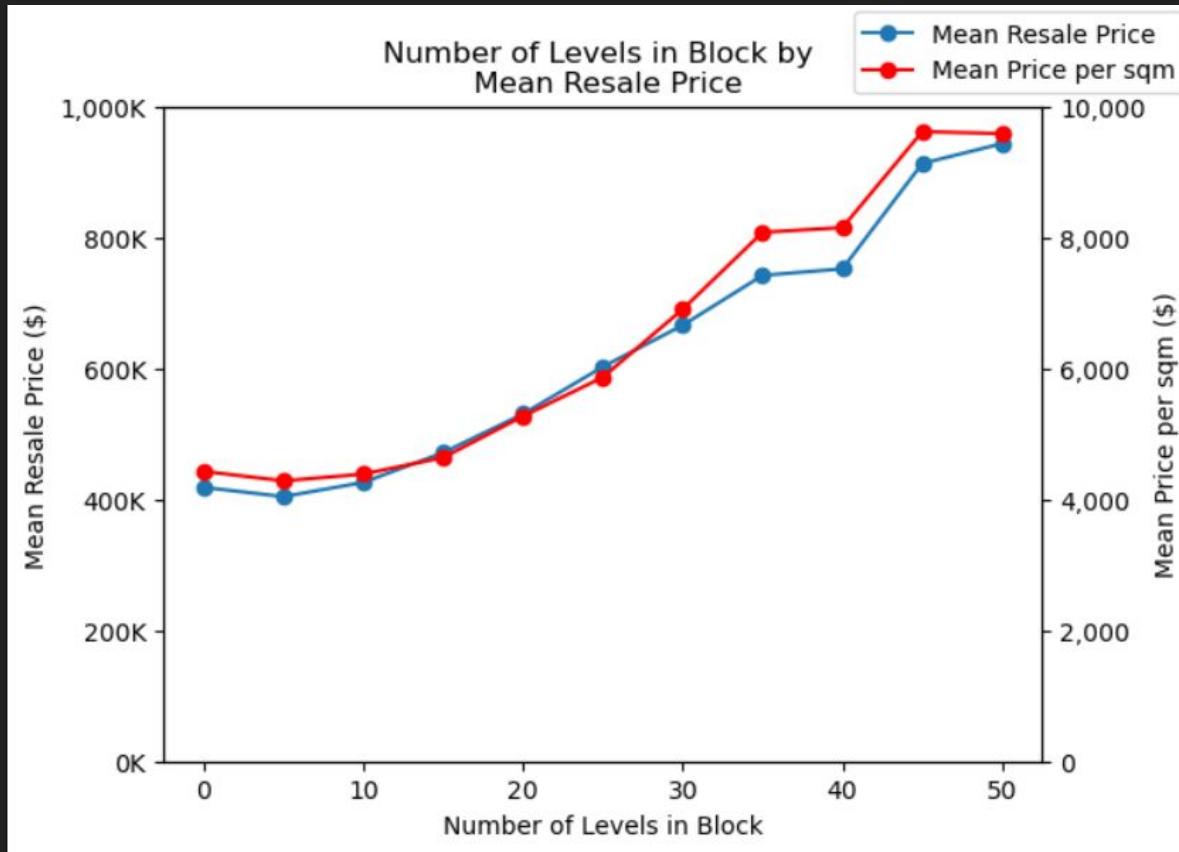


- Price ↑ as Age ↓
- MOP Effect

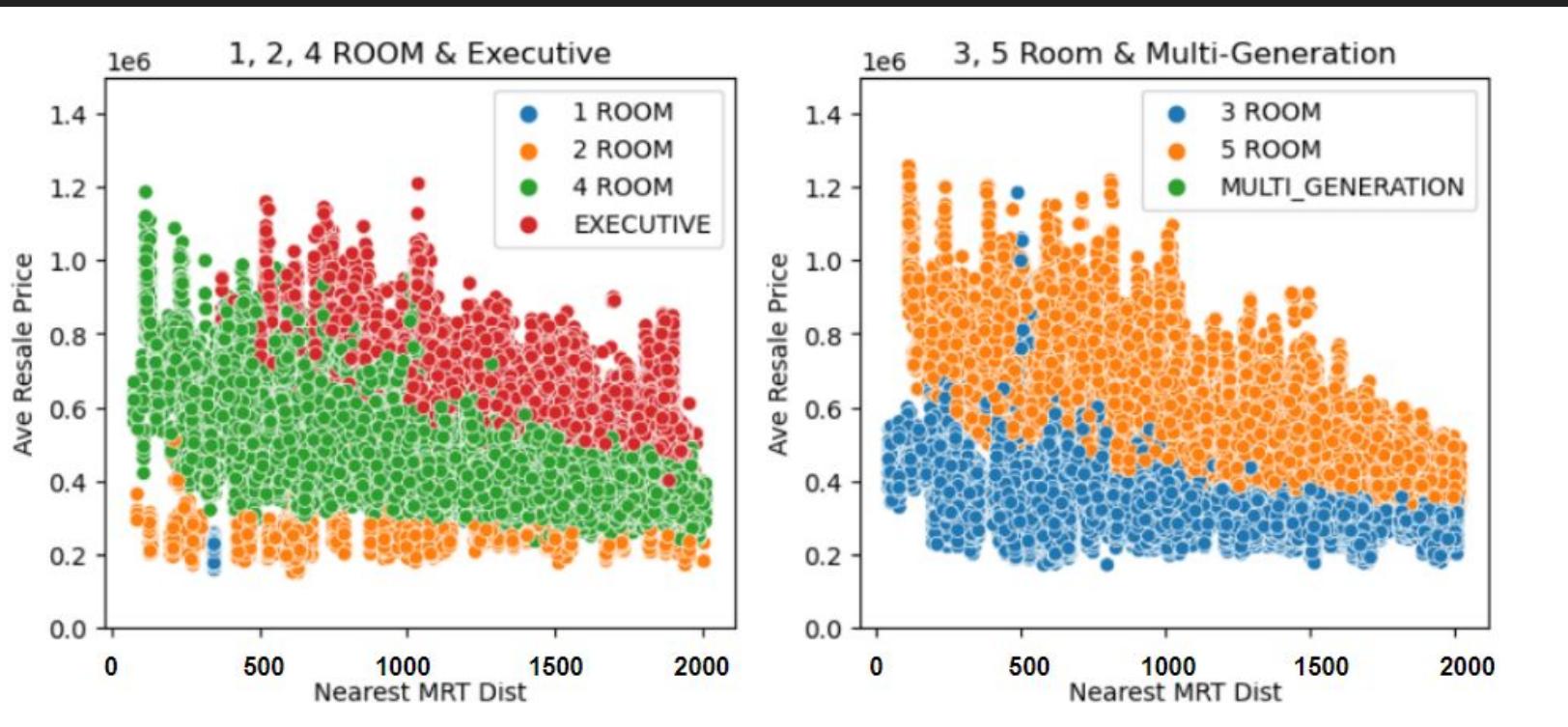
# To Infinity & Beyond!!



# Max Floor Level



# MRT Nearest Distance





03

## Analysis Part 2

# The larger the house, the more expensive it is.

flats are getting smaller

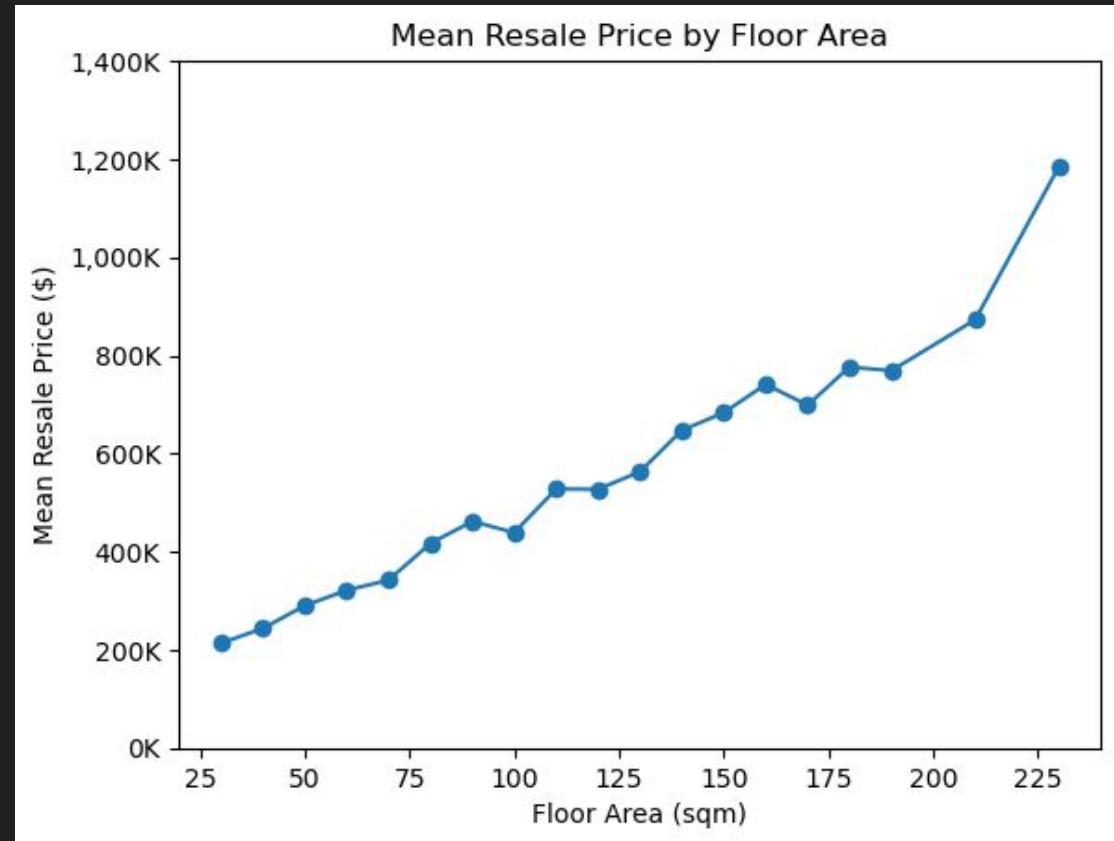
"Honey, I shrunk the kids!"

endless demand...

...stagnant supply

always expensive?

"I got 99 problems and this lease ain't one(?)"



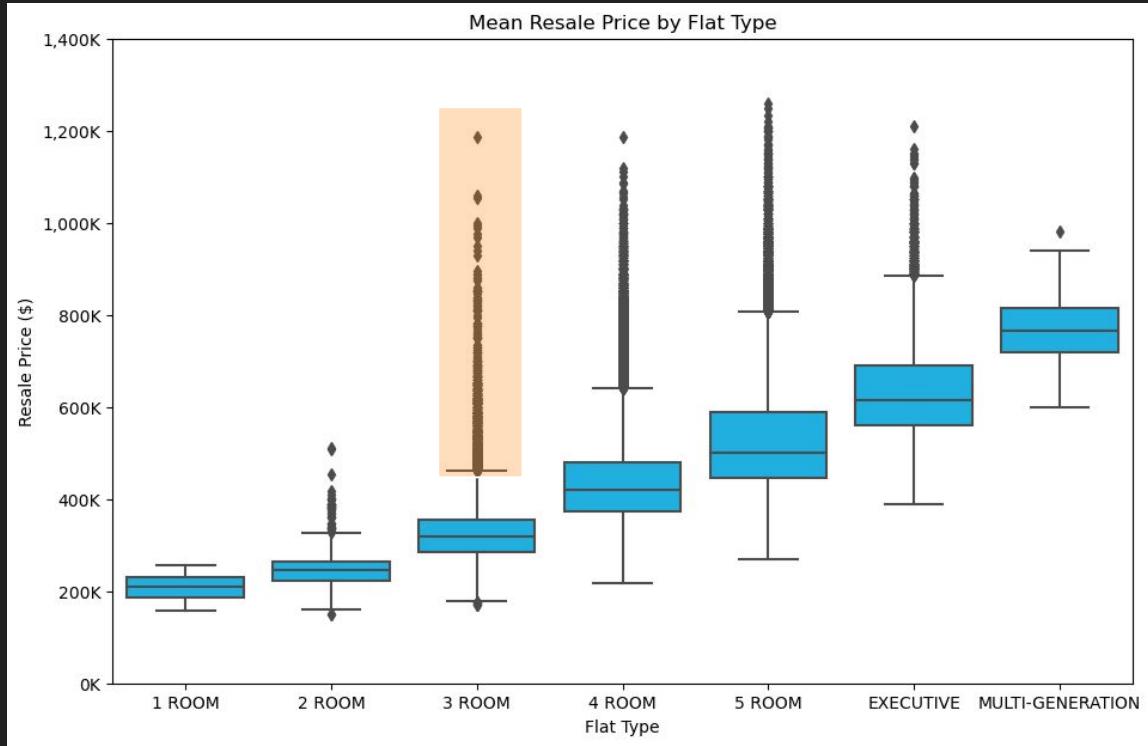
# The more rooms, the more expensive.

“it’s just math”

$n\_rooms = n\_rooms - 1$   
(...?)

5-rooms: the  
black sheep

$n\_rooms = n\_rooms - 2$   
(?!)



# Price differs by location.

connectivity

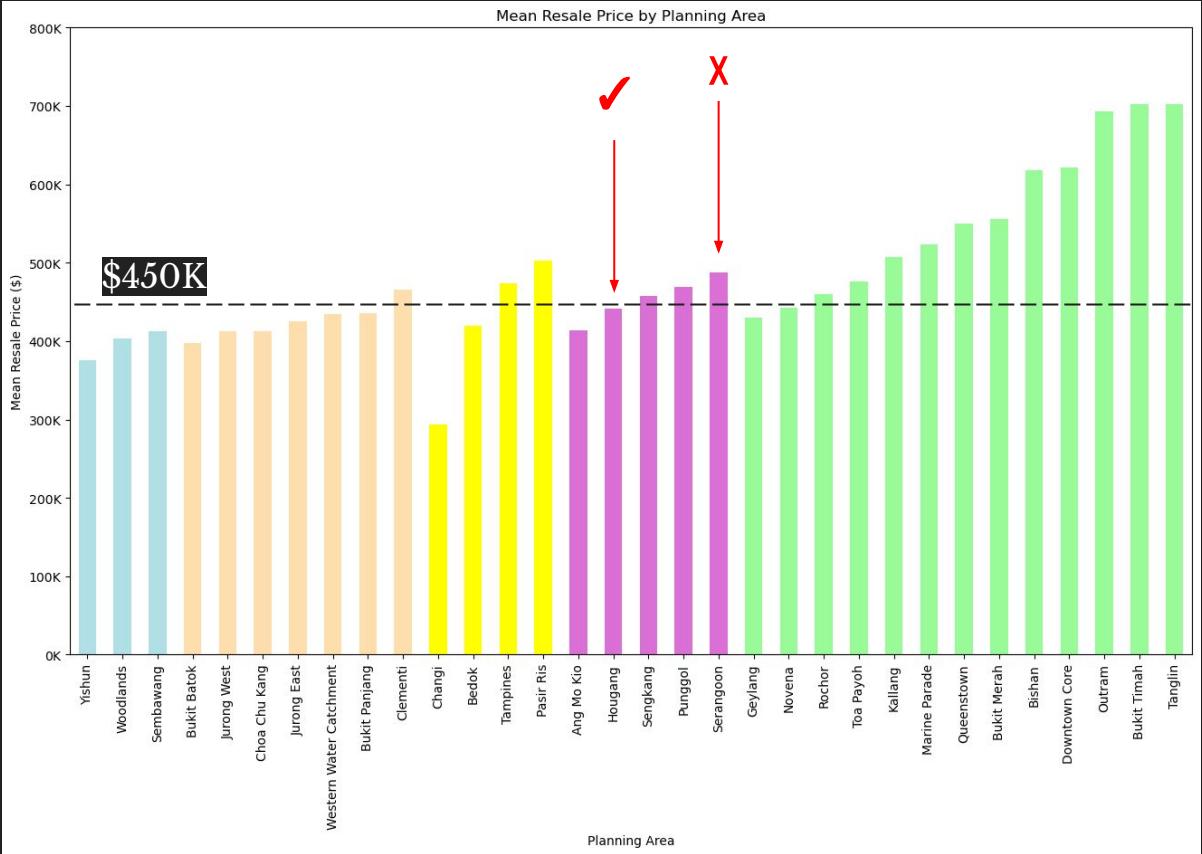


Health is wealth?  
*Time* is wealth.

compromise



...is the key to a  
healthy wallet



# Price differs by flat model.

\$1M flat?

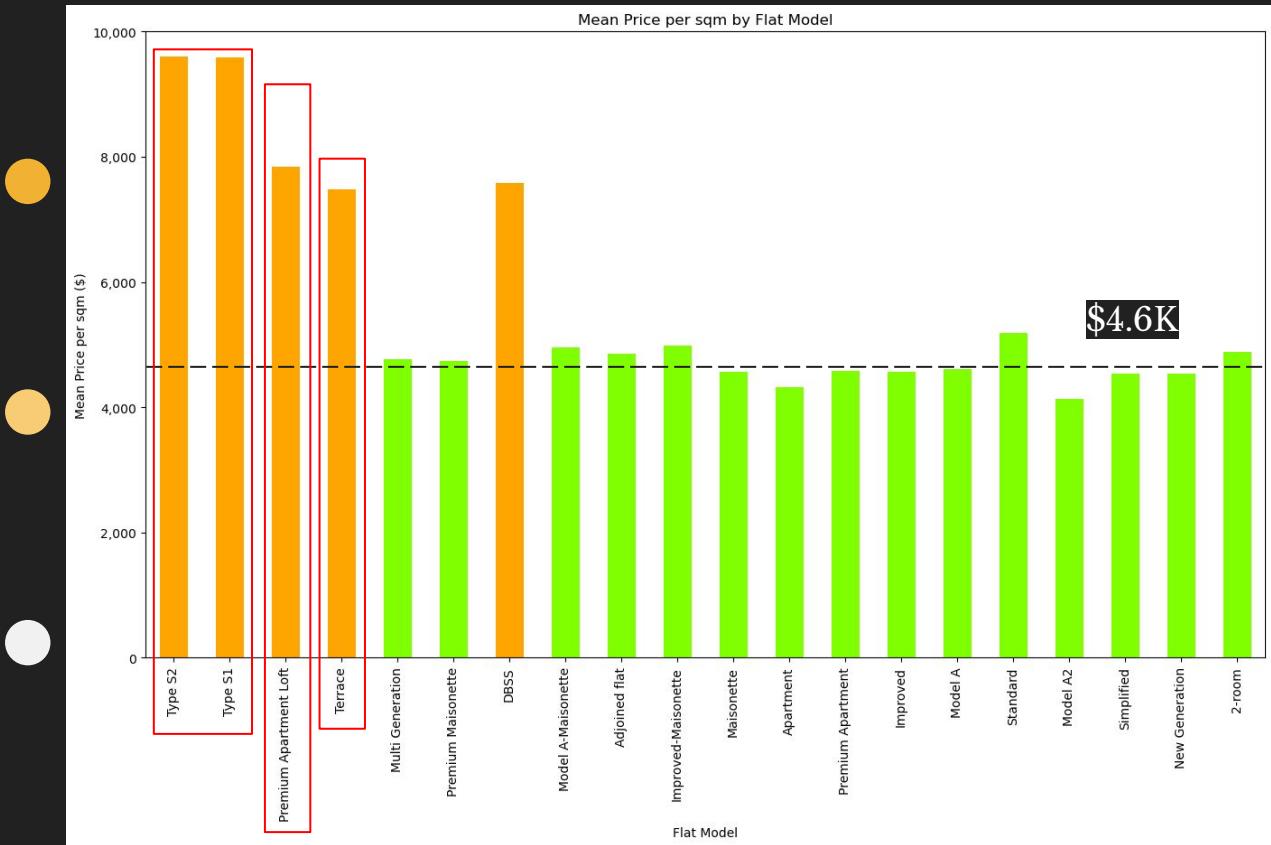
Try \$1M dollar estate!

the new  
maisonette

While stocks las-  
Sold out!

landed flat (?)

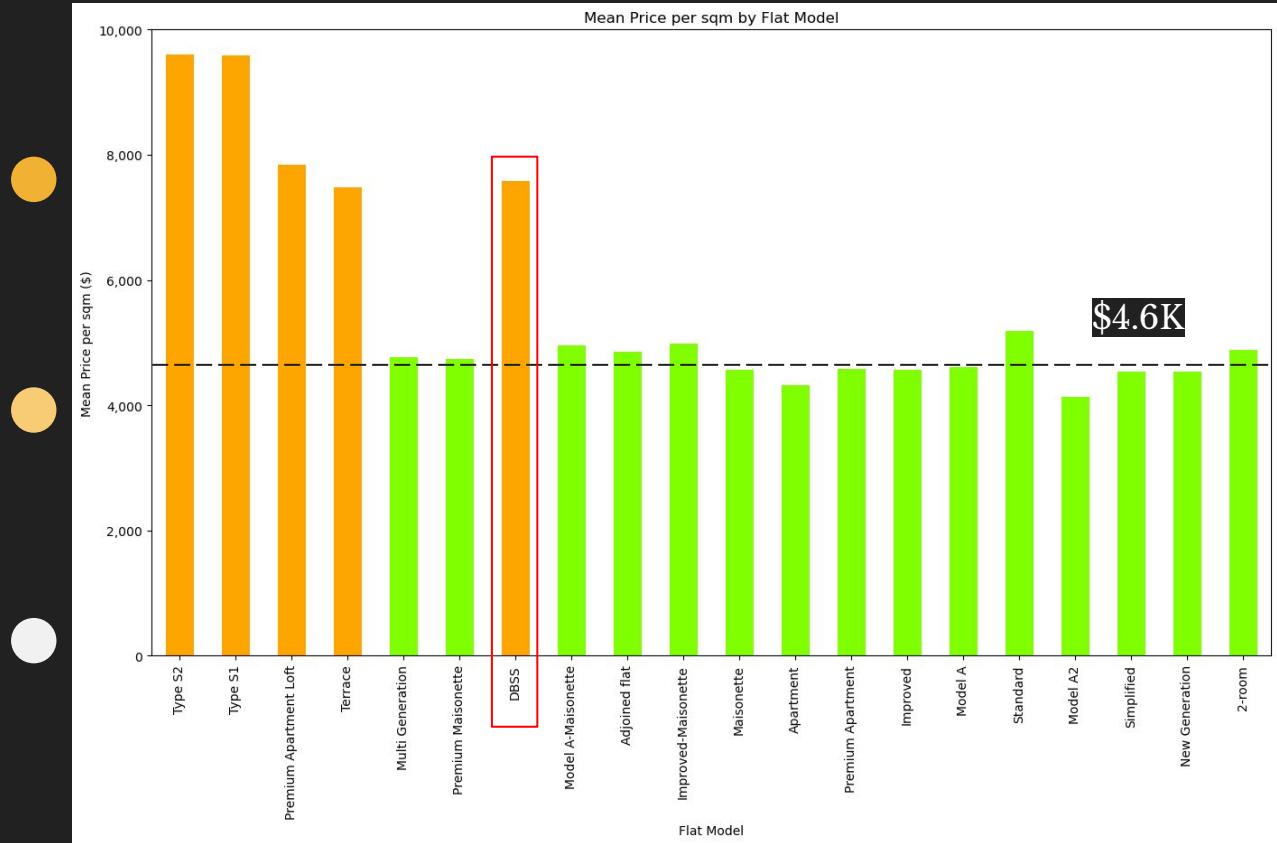
Yours for 99 55 years.



# Price differs by flat model.

DBSS

✓ 5 rooms - 1 = 4 rooms

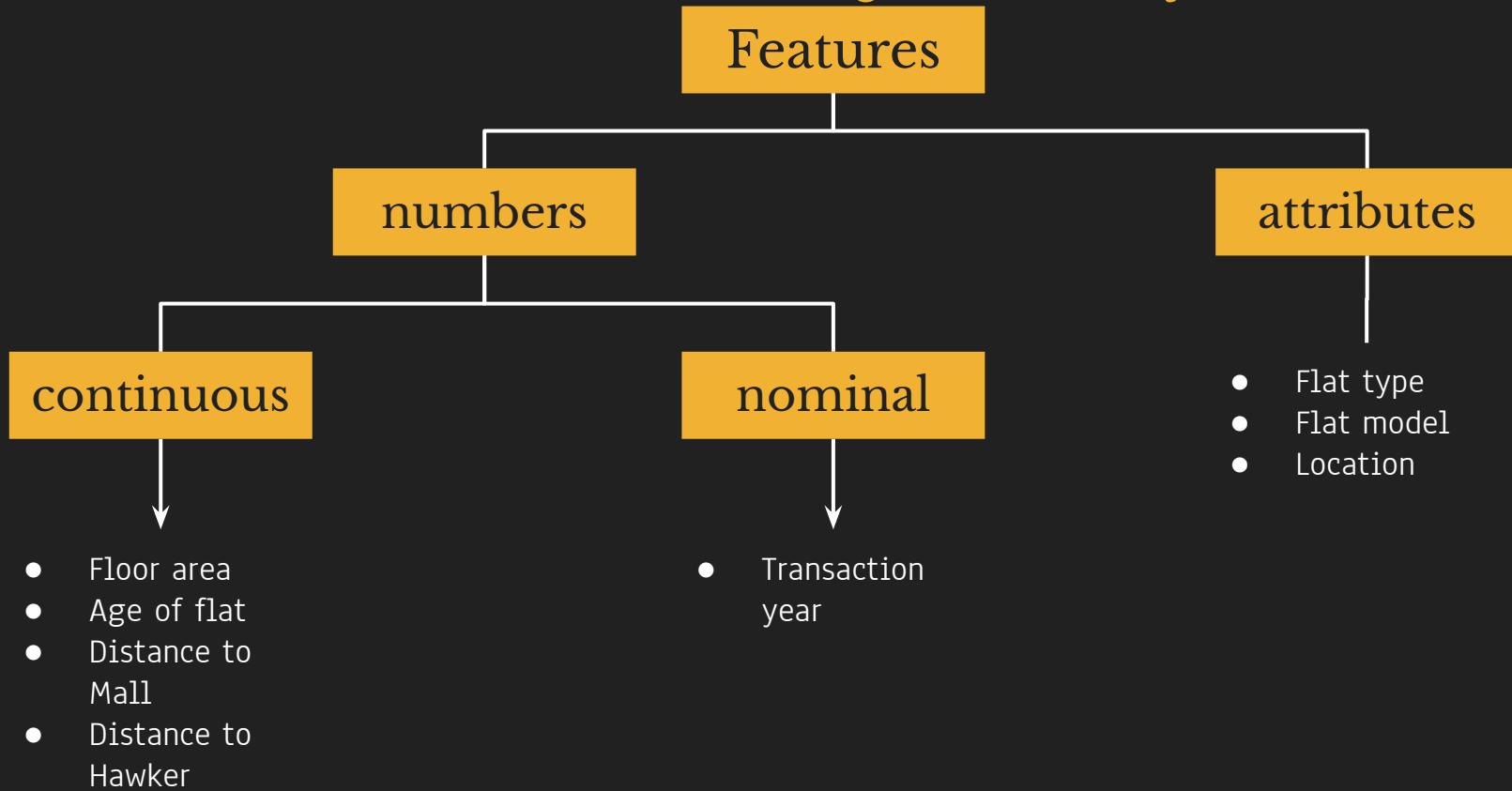


# 04

# Features, Model & Recommendations



# Some features we just analysed



# Our model is built using Linear Regression



$$resale\ price = \sum_i^N Coeff_i \times Feature_i + intercept$$

Resale price: The reason **you** are here!

Coeff\_i: How this feature affects the resale price

Feature\_i : How this feature affect the resale price

Intercept: Likely price of flat when all Feature\_i is 0



\$ 47,106.28

RMSE, or how much the predicted price can vary from actual price on average.



If we predict your flat resale price  
to be: **\$600,000**  
Actual resale price is likely to be  
somewhere between:

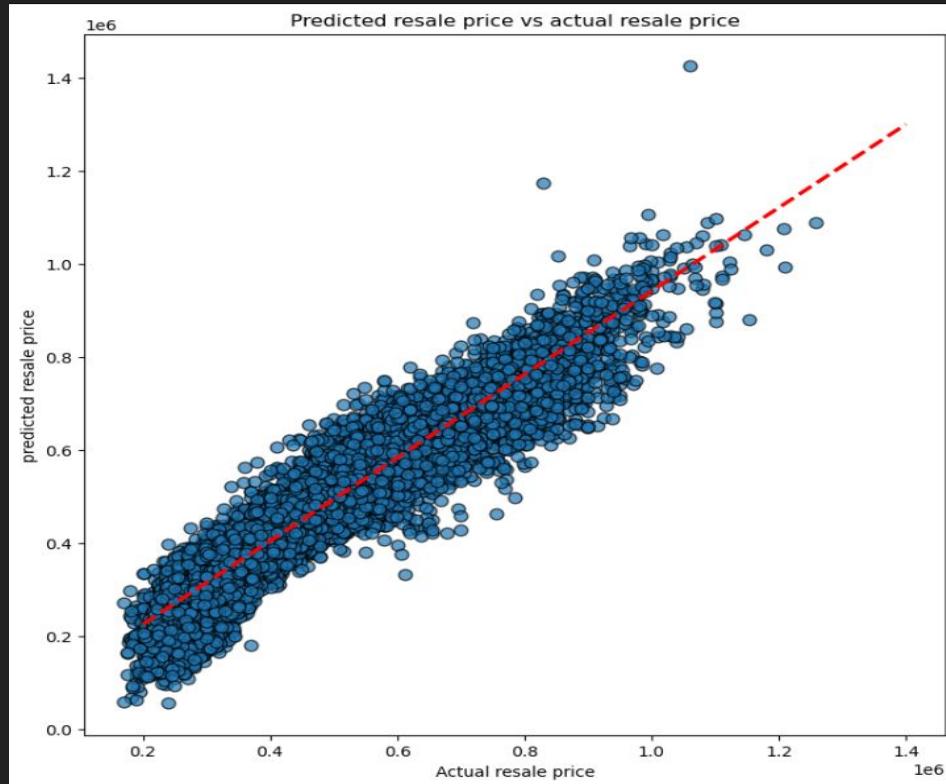
**\$647,106**  
to  
**\$552,894**

89.12% of the variation in the housing prices can be explained

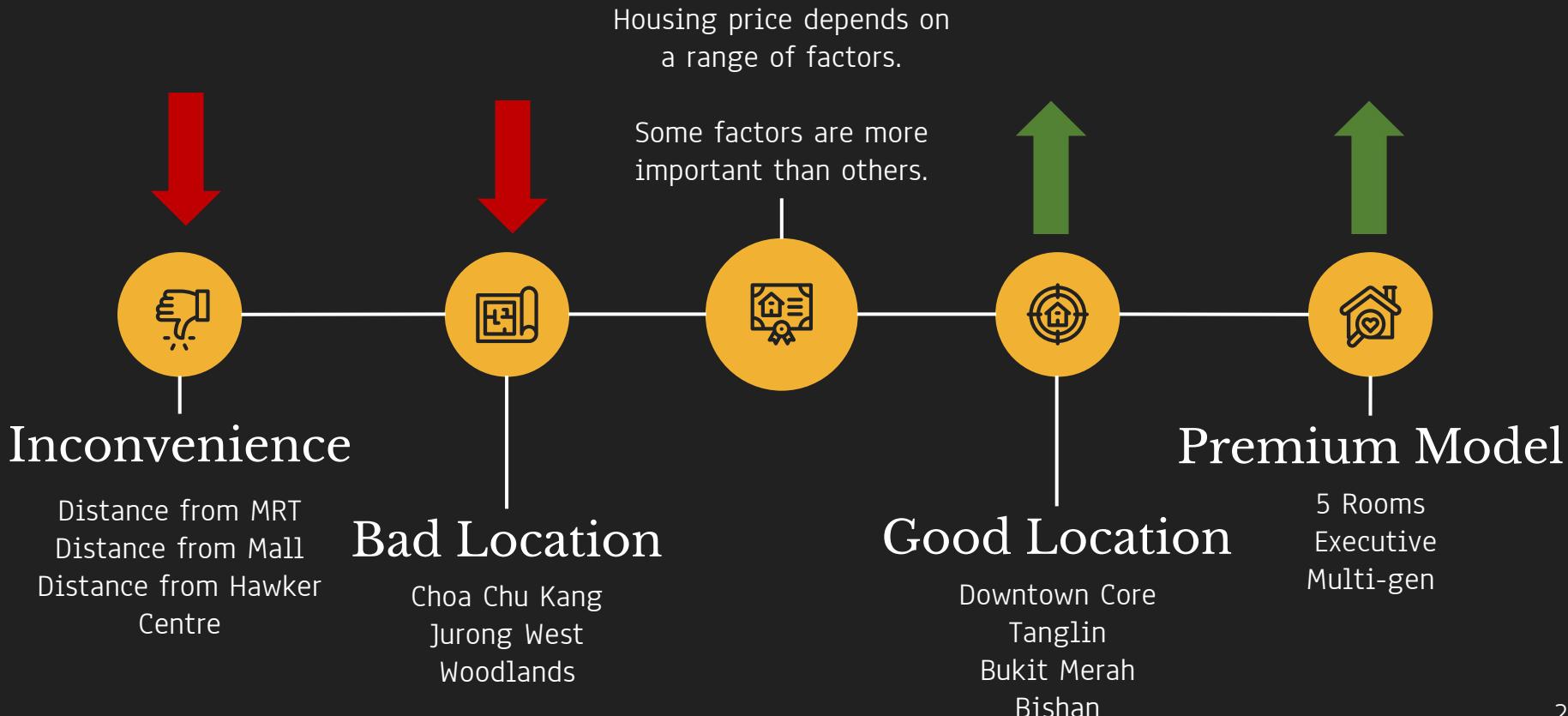
R Squared:

0.8912

model is able to account for 89.12% of the differences between the actual resale prices of the flats



# Some important factors affecting price



A photograph of a bright room with white brick walls and a large window. A pink armchair sits on a light-colored wooden floor. A thin vertical bar on the left side of the slide contains this image.

# Secret Tips just for you



## Look Around

Always check the price of nearby flats



## Look Ahead

Watchout for upcoming developments



## Furnishing

Renovation in the house can be a bargain chip



## Property Experts

Like us!

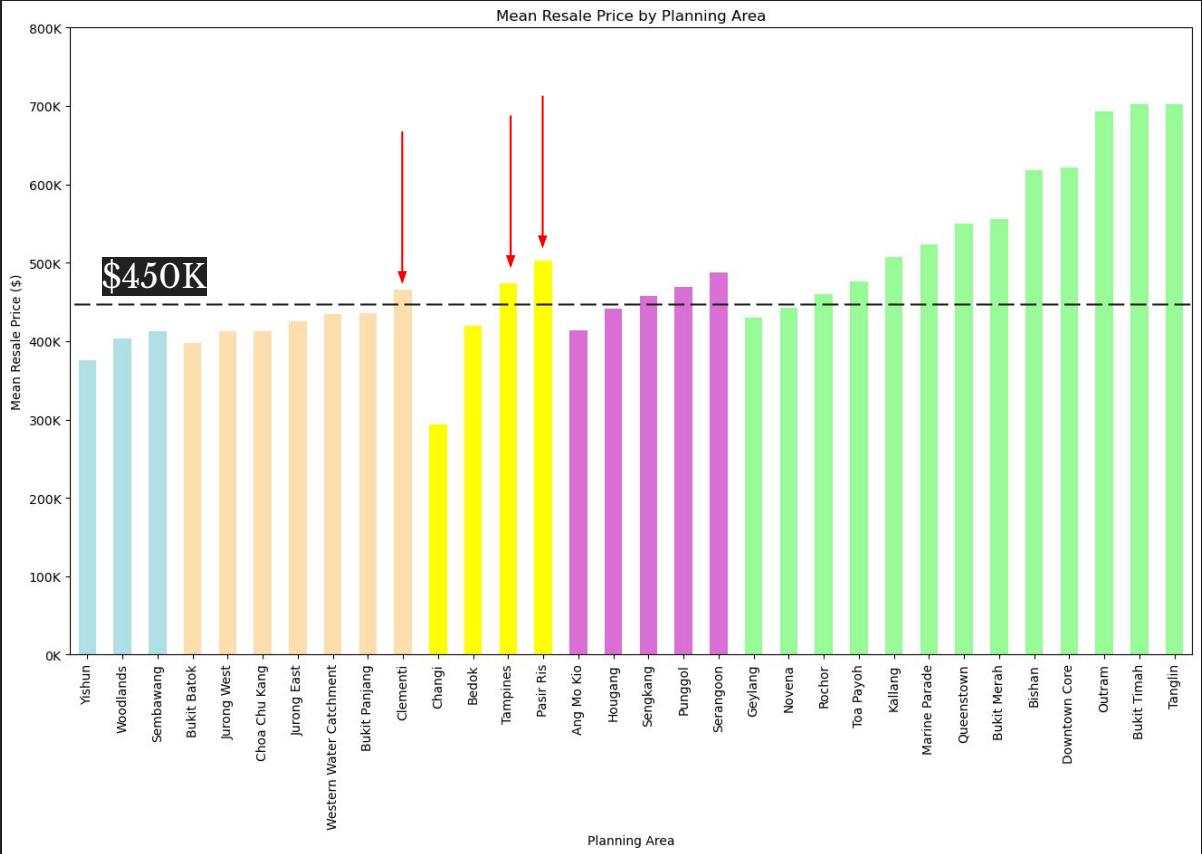
A circular inset image in the bottom-left corner shows a modern living room. It features a light-colored sofa with dark, textured pillows. To the left of the sofa is a small round table with a dark base and a white lamp with a wide, light-colored shade. The background is a dark wall.

# Thank you!

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# Price differs by location.

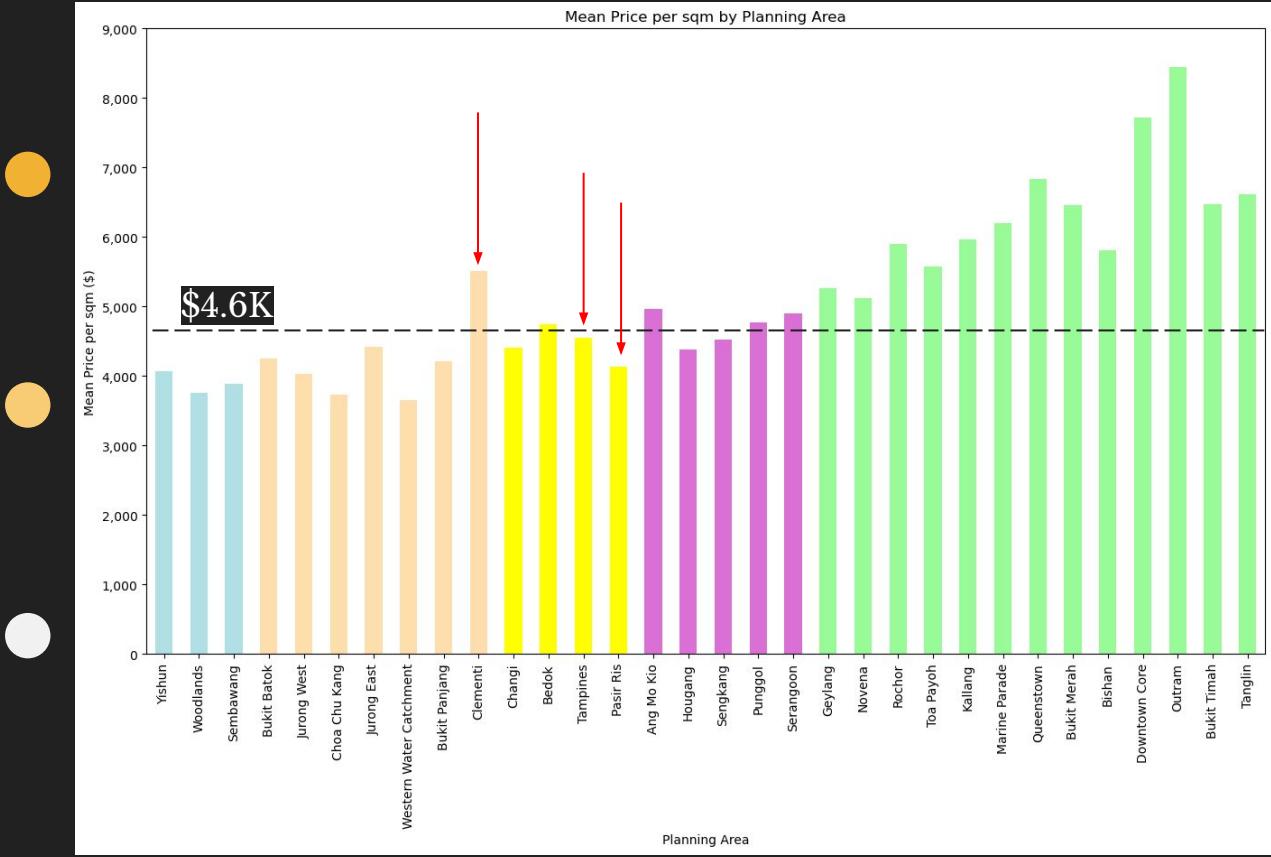
outliers?

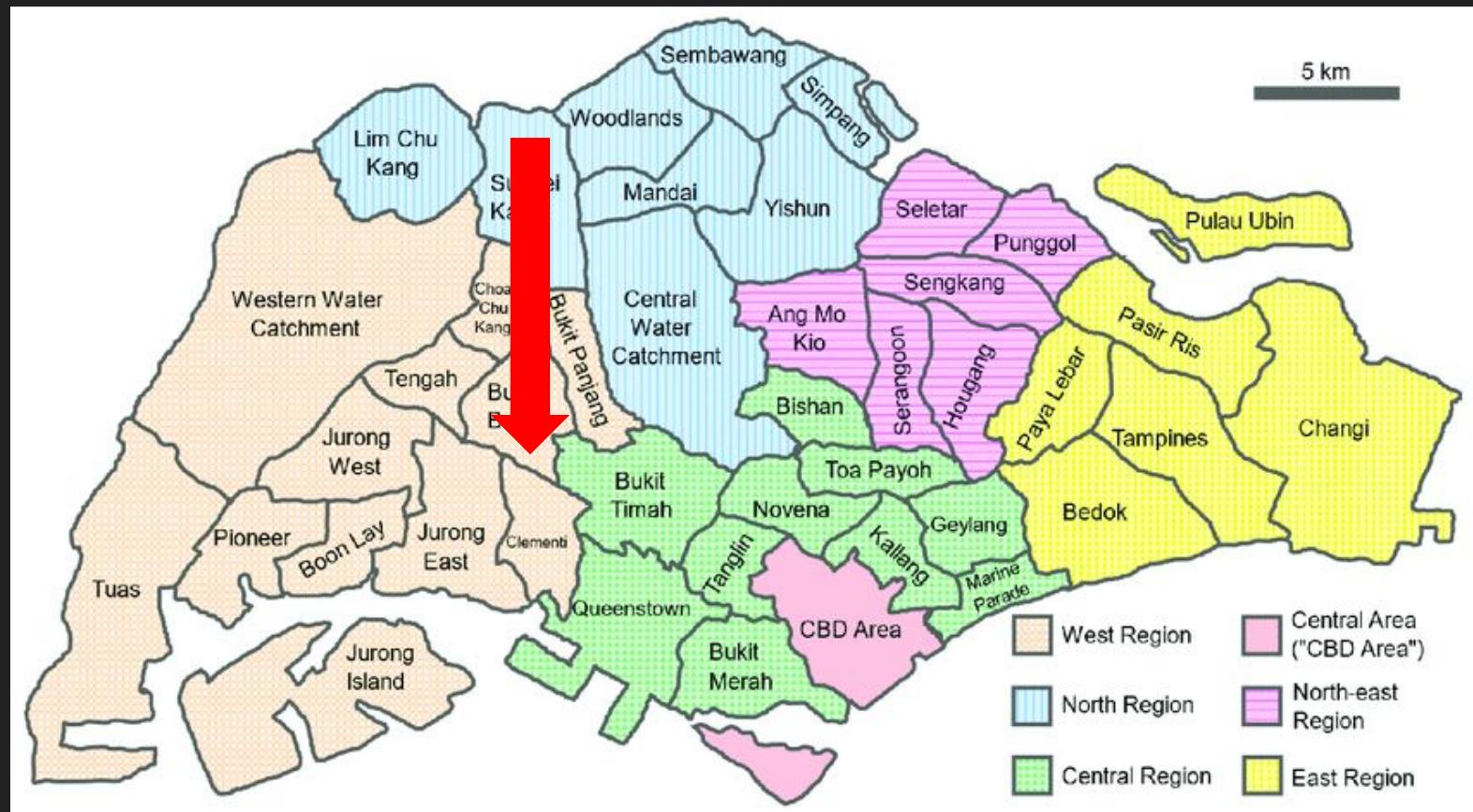


# Price differs by location.

outliers?

Outlier. Just one.





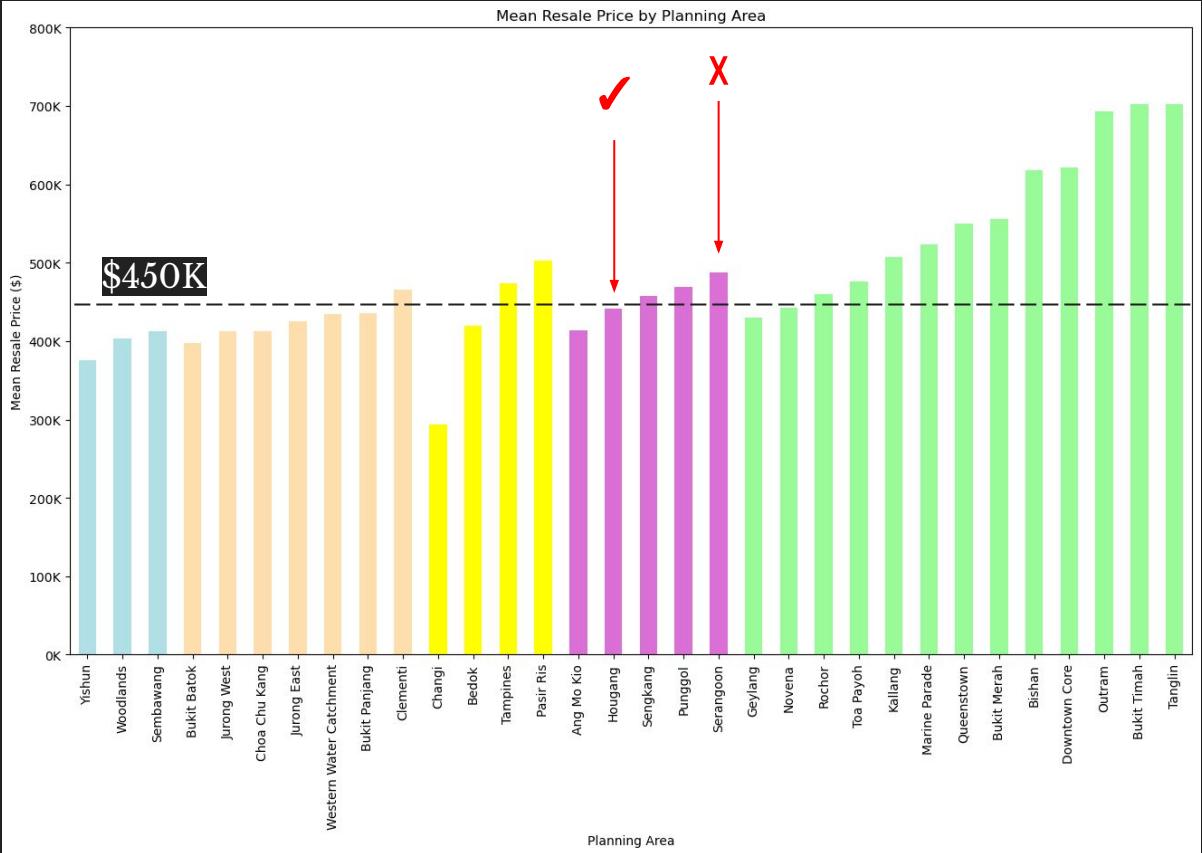
# Price differs by location.

outliers?

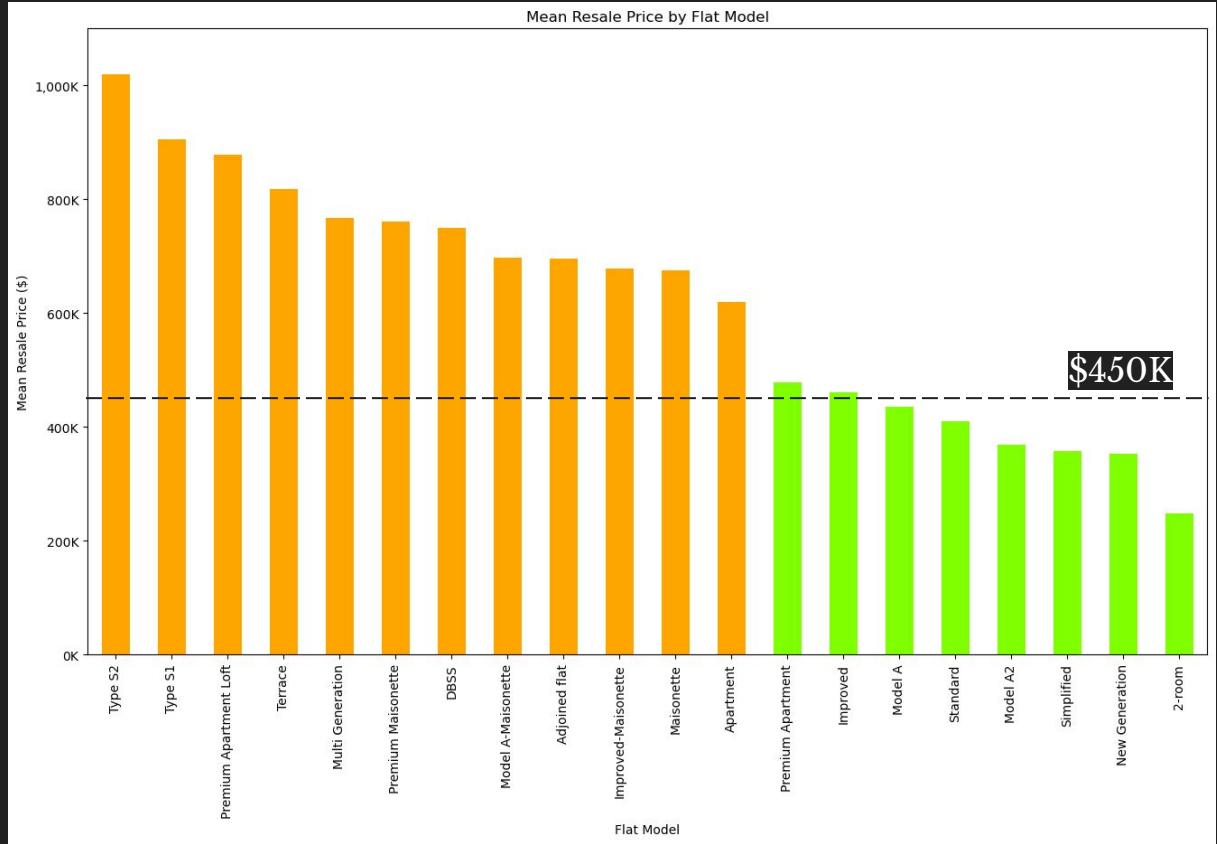
Outlier. Just one.

compromise

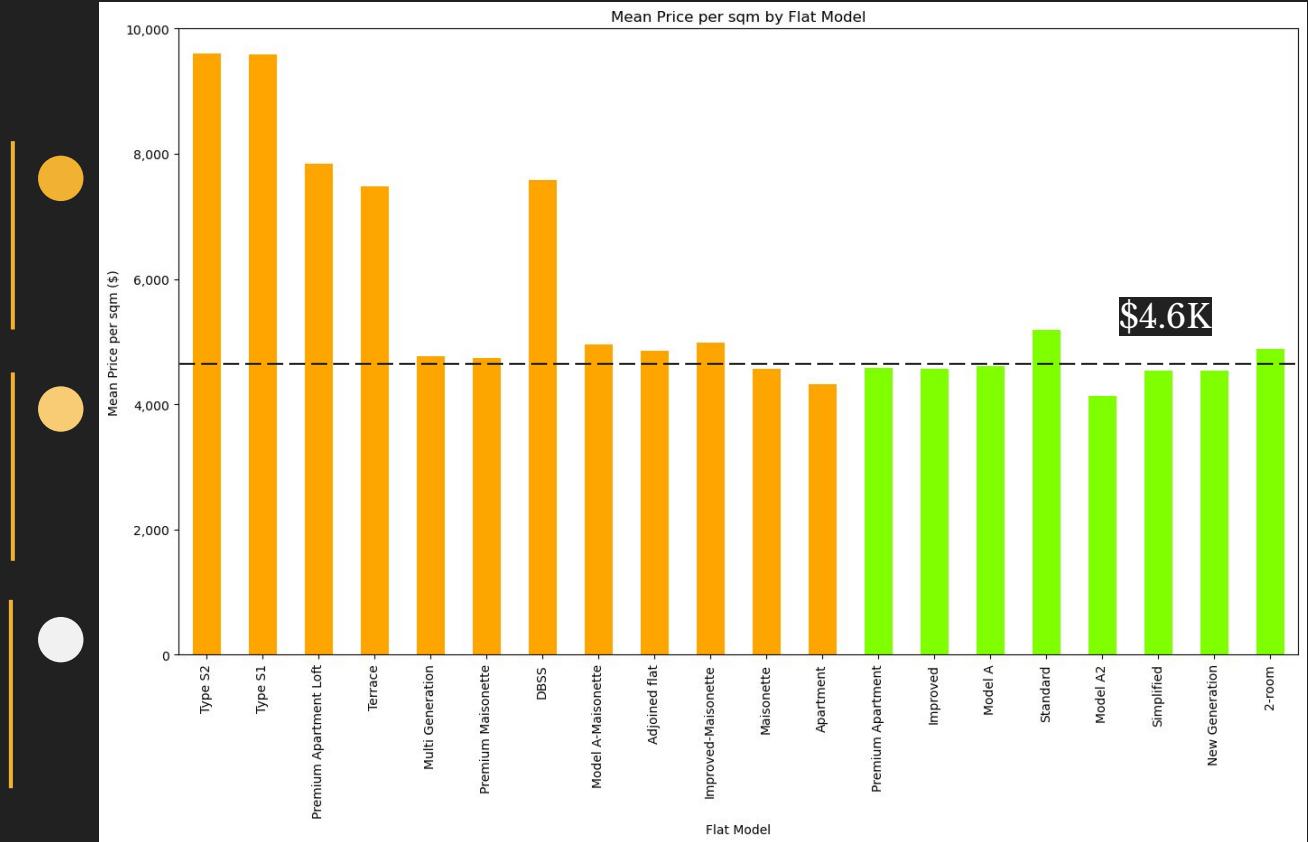
...is the key to a healthy wallet

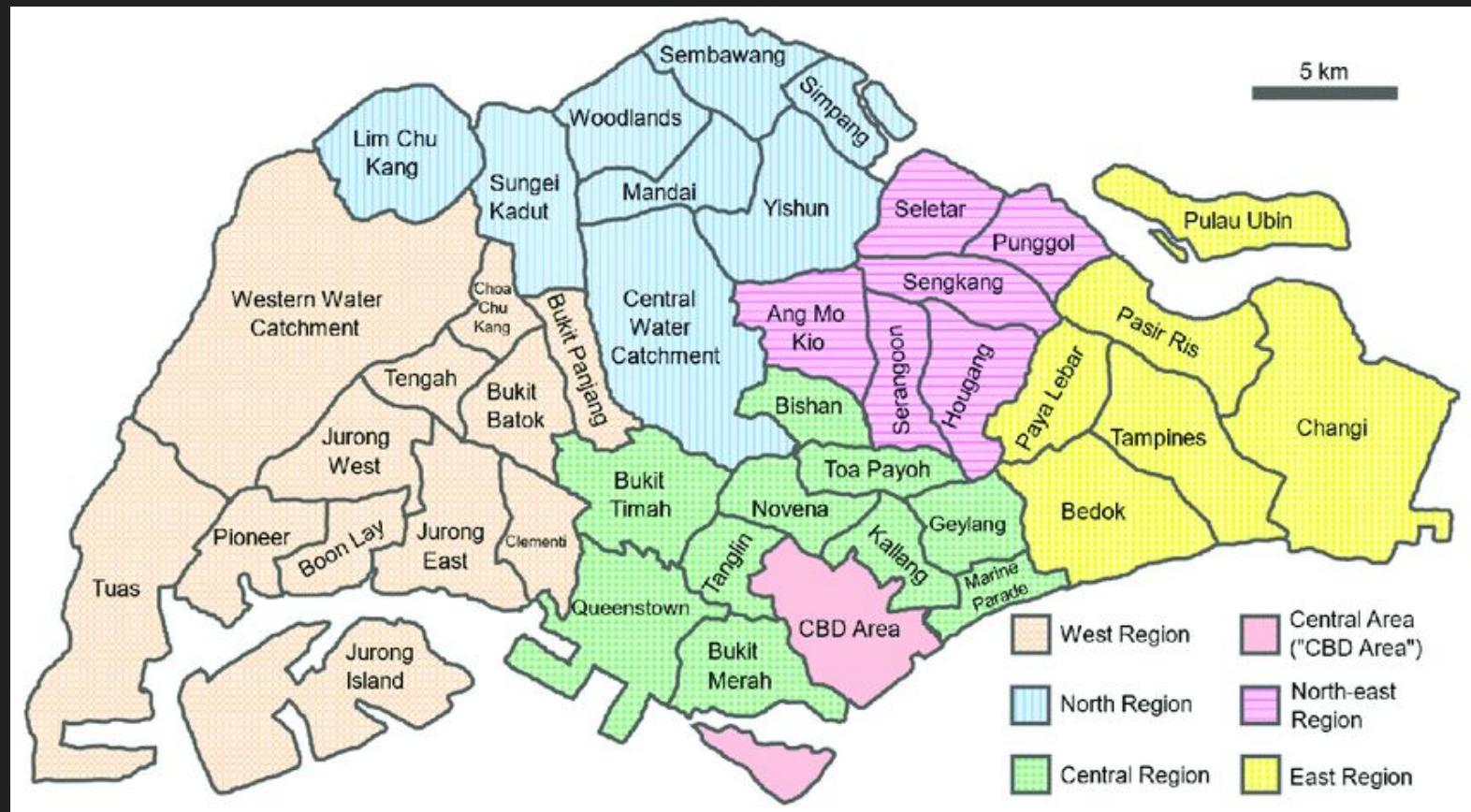


# Price differs by flat model.



# Price differs by flat model.





# Price differs by location.

connectivity



Health is wealth?  
*Time* is wealth.

land prices  
matter

(Even when you don't own  
the land)

compromise



...is the key to a  
healthy wallet

