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1. Project Objectives

1.1 Target Audience

The target audience for this report is for young married couples around the age of 25 to 35 years old. Married couples of this age group are perhaps looking for bigger HDB flat types with the flexibility of having new additions to the family. Most of the visualizations in this report are therefore catered to 3 room, 4 room, 5 room and executive flat.

1.2 Exploratory Questions

- a. Where are the suitable towns and flat type?
 - i. What is the average resale price for each town based on flat types and remaining lease?
 - ii. What is the price range of resale price for each town based on flat types and remaining lease?
- b. What are the considerations for that will affect the price of reselling in future?
 - i. Does storey range affect resale price?
 - ii. Does number of years of remaining lease affect resale price?
- c. What is the trend of HDB flats?
 - i. Do resale prices always rise?
 - ii. What is the trend of volume of resale flat transactions?
 - iii. How did HDB flat sizes change over time?

2. Data Preparation

2.1 State of Data

The state of data is generally clean. However, there are some inconsistencies in the data.

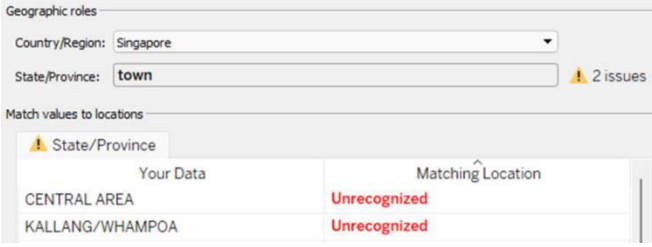
- a. Under “flat_type” column, there are 2 categories for the same flat type, ie. “MULTI GENERATION” and “MULTI-GENERATION”.
- b. Under “storey_range” column, majority of the data sets are in groups of 3 (ie. 01 TO 03). However, from Mar 2012 to May 2012, they are in groups of 5 (ie. 01 TO 05).
- c. “remaining_lease” data column is only provided from Jan 2015 onwards. In addition, there are 2 different data types, ie. “70” and “69 years 03 months”.

2.2 Preparation of Data

- a. The data source was provided in 5 files in CSV format. Union of the data sets for the 5 files were performed.
- b. The following data type was changed:

Column Field	Data Type (From Original Dataset)	Data Type (After Data Preparation)
month	String	Date
town	String	Geographical Role -> State/Province
lease_commence_date	Number (Whole)	Date

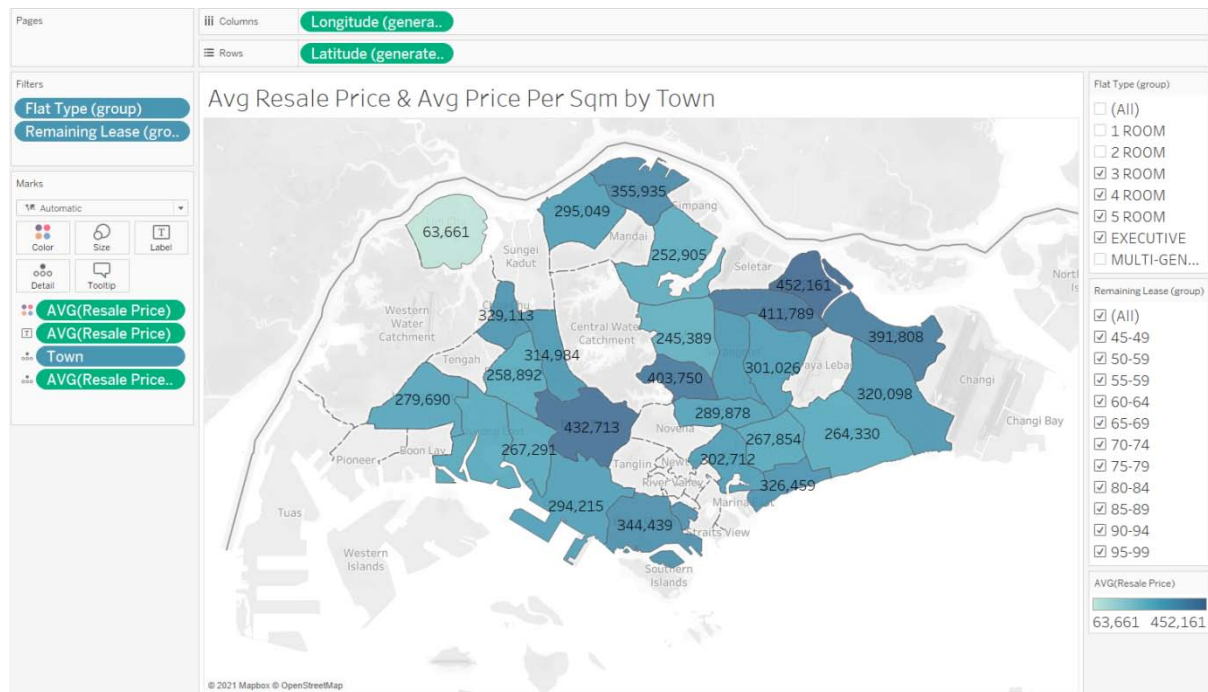
c. The following data was grouped / calculated / cleaned:

Column Field	New Column Field (After Data Preparation)	Data (After Data Preparation)
month	Transaction Month	Renamed field name to "Transaction Month" to avoid confusion with "lease_commence_date" (another date type)
Transaction Month	Transaction Month (group)	Data were grouped in 5 yearly period (1990-1994)
town	-	<p>2 towns were unrecognized in tableau geographical database.</p>  <p>Alias for the 2 towns were changed. "CENTRAL AREA" -> "OUTRAM" and "KALLANG/WHAMPOA" -> "KALLANG".</p>
flat_type	Flat Type (group)	"MULTI-GENERATION" and "MULTI GENERATION" were grouped together and named "MULTI-GENERATION".
storey_range	-	3 months of data (Mar 2012 to May 2012) is a relatively small subset of the entire data, it is manually excluded at the visualizations of the corresponding graphs.
lease_commence_date	Lease Commence Date (group)	Data were grouped in decades (ie. 1970-1979)
-	Remaining Lease (Calculation)	Created a new calculated field with the code: <code>99-(year([Transaction Month])-year([Lease Commence Date]))</code>
Remaining Lease (Calculation)	Remaining Lease (group)	Data were grouped in 5 yearly period (ie. 45-49)
resale_price	Resale Price Per Sqm (Calculation)	Created a new calculated field with the code: <code>[Resale Price]/[Floor Area Sqm]</code>

3. Exploratory Data Analysis and Visualisations

3.1 Avg Resale Price & Avg Price Per Sqm by Town

This visualization allows buyers to have an overview on suitable towns and flat types and assess their affordability based on average resale price and average resale price per sqm.



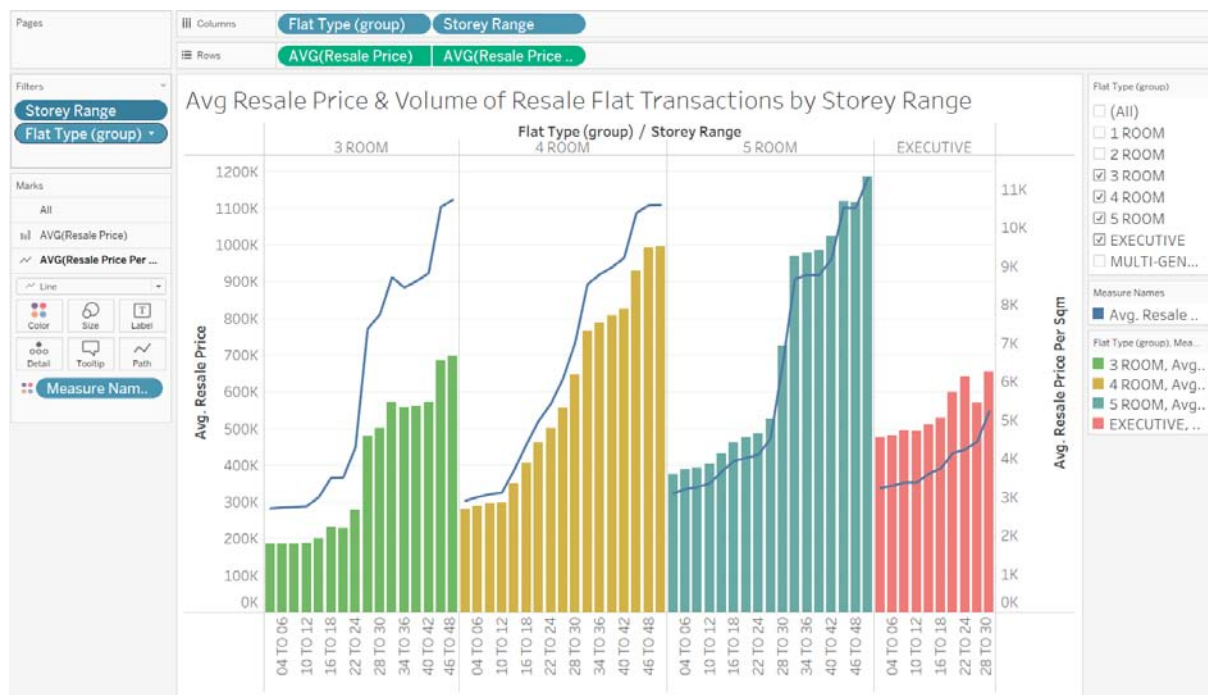
3.2 Price Range of Resale Flat Prices by Town & Flat Type

This visualization allows buyers to know on the price range of resale flat prices for each town and flat type.



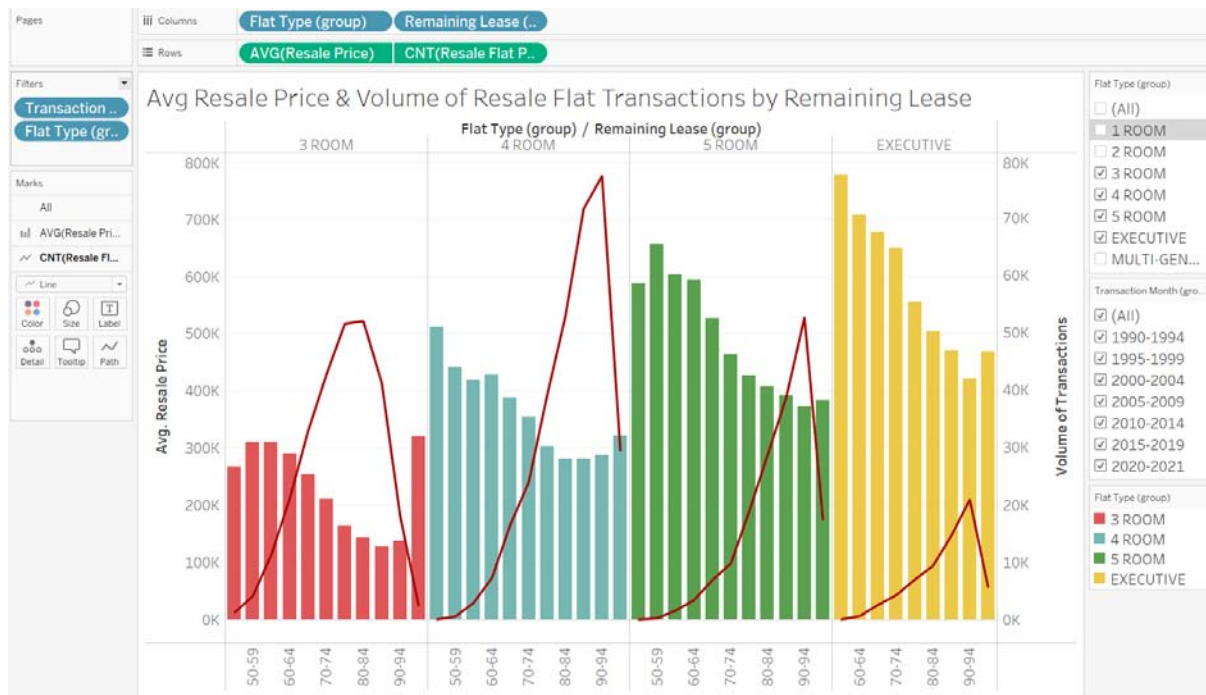
3.3 Avg Resale Price & Volume of Resale Flat Transactions by Storey Range

This visualization shows how storey range affects resale price and volume of transactions.



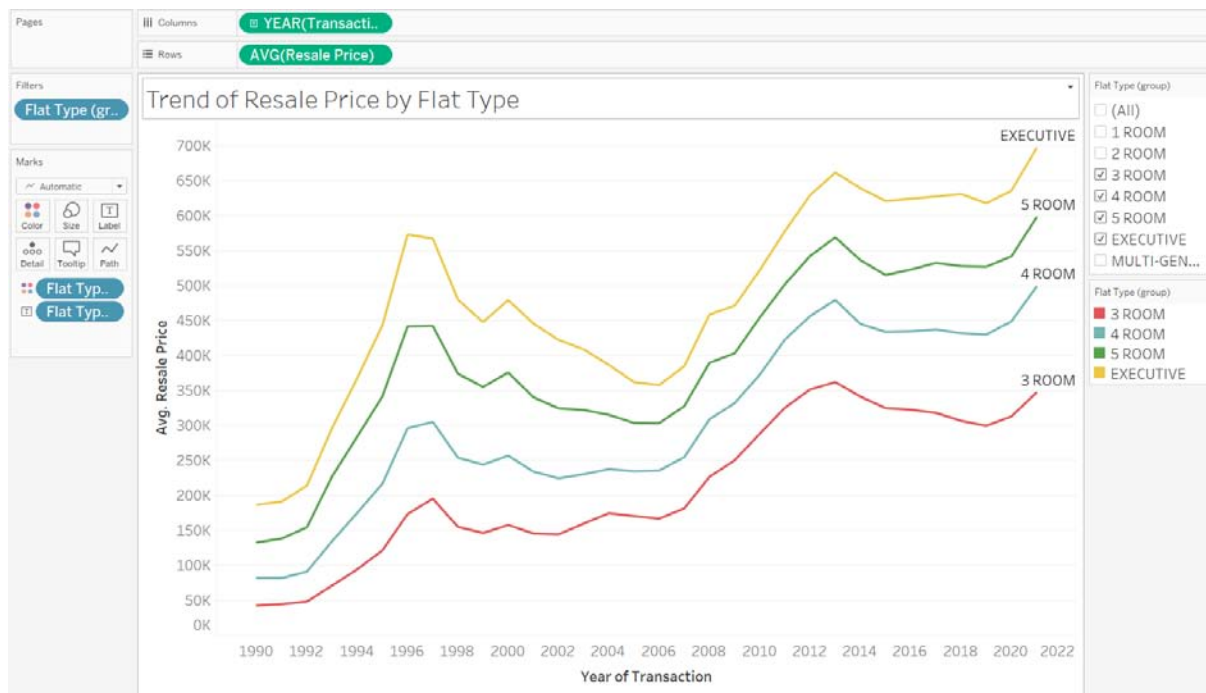
3.4 Avg Resale Price & Volume of Resale Flat Transactions by Remaining Lease

This visualization shows how remaining lease of the flat affects resale price and volume of transactions.



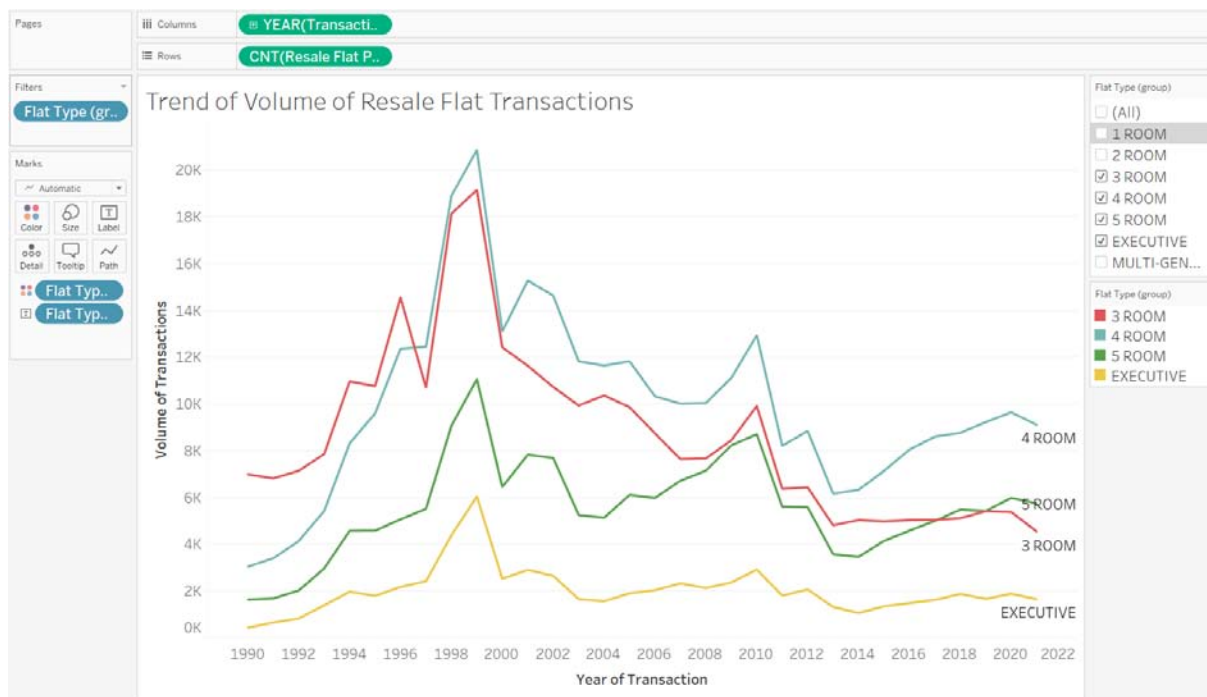
3.5 Trend of Resale Price by Flat Type

This visualization shows the trend of resale price over the years.



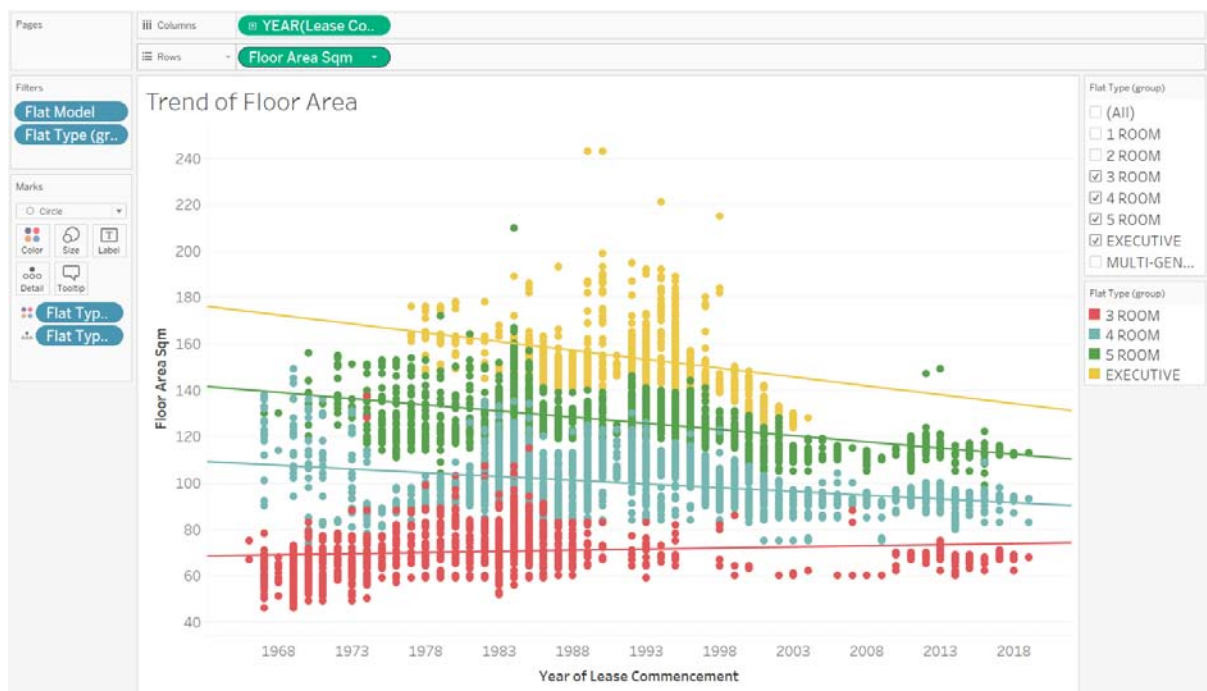
3.6 Trend of Volume of Resale Flat Transactions

This visualization shows the trend of volume of resale flat transactions over the years.



3.7 Trend of Floor Area

This visualization shows the trend of floor area of HDB flats over the years.

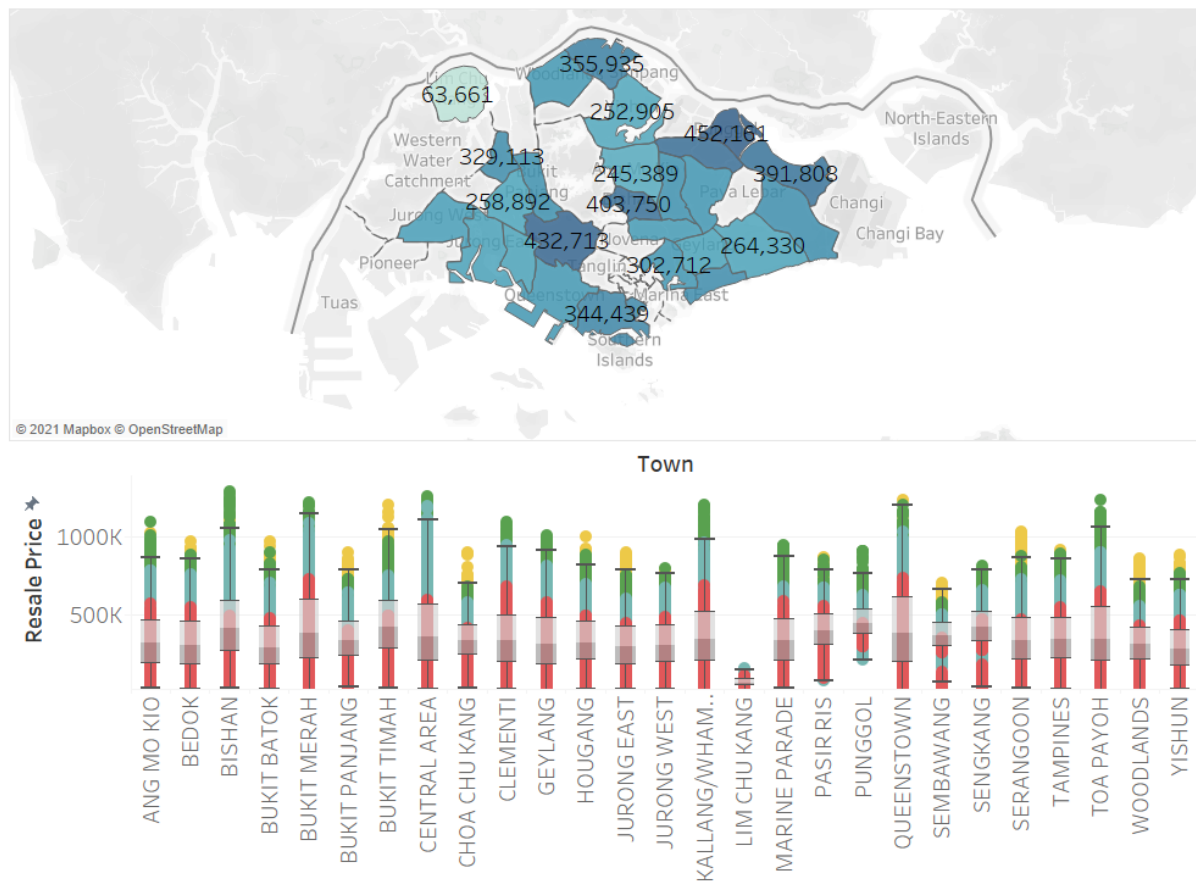


4. Dashboard

4.1 Historical Resale Price by Town

This dashboard allows buyers to drill down on suitable towns and flat types and access their affordability.

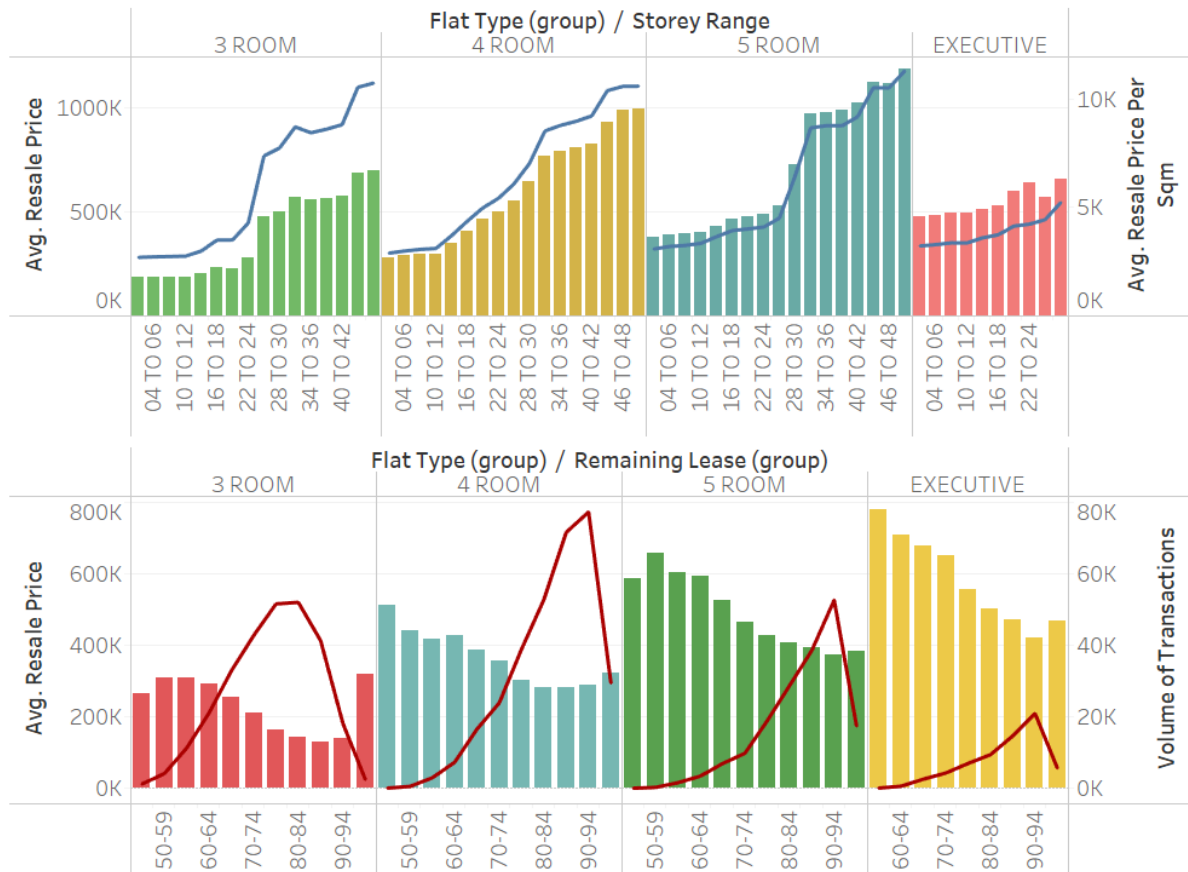
Historical Resale Price by Town



4.2 Considerations For Future Resales

This dashboard shows additional considerations for the future reselling of their flat.

Considerations For Future Resales



4.3 Trend of HDB Flats

This dashboard shows the trend of HDB flats over the years, in terms of price, volume of transactions and floor area.

Trend of HDB Flats

