



# REAL ESTATE BUSINESS ANALYTICS

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2024

# EXECUTIVE SUMMARY

This dashboard provides a comprehensive analysis of the real estate market in Singapore, focusing on property characteristics, market dynamics, sales data analytics, and property location. The primary goal of the dashboard is to offer an intuitive and data-driven overview of key trends, property valuations, and market dynamics, empowering stakeholders to make informed decisions.

## Objectives of the Report

1. Visualize Market Dynamics:  
To provide a **clear and intuitive visualization of the real estate market** dynamics in Singapore, including supply and demand trends, sales volumes, and price variations across different regions and properties.
2. Support Informed Decision-Making:  
To **equip stakeholders**—such as investors, developers, and policy makers—with actionable insights.
3. Highlight Key Trends and Patterns:  
To identify and **emphasize key trends in the real estate market**, such as the performance of different property models over time, the impact of property age and remaining lease on resale values, and the geographical distribution of property transactions.
4. Provide Comprehensive Market Analysis:  
To offer a **detailed analysis of property characteristics**, sales data, and location-based insights, enabling a thorough understanding of the market landscape and future potential opportunities.

## Recommendations

1. Target High-Demand Areas for Investment:  
**Focus on regions with high transaction volumes** and significant price appreciation, such as "Jurong West" and "Tampines". These areas demonstrate strong market activity and potential for profitable investments.
2. Diversify Investments Across Property Types:  
While 4-room flats are the most common, there is **potential value in diversifying investments across different property types**, including premium models like "Multi-Generation" flats, which tend to command higher resale prices.
3. Capitalize on Trends in High-Density Areas:  
**High-density towns, where average prices per sqm are higher**, should be considered for future development projects or real estate investments. These areas are likely to continue experiencing strong demand due to their urban appeal and accessibility.
4. Leverage Data for Strategic Marketing:  
For example, **targeting specific flat models** or locations with high demand and aligning offerings **with the preferences of prospective buyers**.
5. Develop Long-Term Plans for Lower-Density:  
While high-density areas show immediate profitability, **lower-density areas could offer long-term growth potential** as urban sprawl continues. Strategic investments in these areas might yield substantial returns as demand increases over time.

## AGENDA SLIDE

**01.**

### Data Preparation

Understanding the dataset, the processing and transformations needed for analysis

**02.**

### Property Characteristics

This section presents a detailed overview of the types and characteristics of properties in the market

**03.**

### Sales Data Analytics

This section provides a deep dive into sales performance, price trends, and key financial metrics

**04.**

### Property Location

This page visualizes the geographical distribution of property transactions

**05.**

### Market Dynamics

Focuses on the interaction between supply and demand, and pricing trends across different areas

**06.**

### Recommendations

The recommendations and conclusions from the comprehensive report

# DATA PREPARATION

## About this project

The project revolves around a dataset of HDB resale flats in Singapore. Key columns include block, flat\_model, flat\_type, floor\_area\_sqm, lease\_commence\_date, month, remaining\_lease, resale\_price, story\_range, street\_name, town, street\_lat, street\_lon, town\_lat, and town\_lon.

This report was produced in Microsoft Power BI (desktop and published [here](#)) and tools such DAX, Power Query and data modeling were used to transform and configure the data for analysis.

## Column Transformation

- Converted the remaining\_lease text column into a usable numerical format.
- Combined responses in the same column with spelling errors or similar names into one e.g Premium Apartment had three variations of the same name, and these were renamed to Premium Apartment
- Created calculated columns to derive meaningful data, such as the year of the lease commencement.
- Implemented various DAX measures for calculating key metrics like average resale price, resale volume, and forecasted prices.

## Custom Measures for some Key Performance Indicators

### 1. YoY Sales Volume =

```
VAR LastYear = CALCULATE(MAX('HDB_Resale_Flats'[lease_commence_date]))
VAR PreviousYear = LastYear - 1
VAR LastYearSales =
    CALCULATE(
        COUNT('HDB_Resale_Flats'[resale_price]),
        'HDB_Resale_Flats'[lease_commence_date] = LastYear
    )
VAR PreviousYearSales =
    CALCULATE(
        COUNT('HDB_Resale_Flats'[resale_price]),
        'HDB_Resale_Flats'[lease_commence_date] = PreviousYear
    )
RETURN
    IF(
        NOT(ISBLANK(LastYearSales)) && NOT(ISBLANK(PreviousYearSales)) &&
        PreviousYearSales > 0,
        (LastYearSales - PreviousYearSales) / PreviousYearSales,
        BLANK())
```

### 2. Top 5 Flat Models Average Resale Value Over Time =

```
TOPN(
    5,
    SUMMARIZE(
        'HDB_Resale_Flats',
        'HDB_Resale_Flats'[flat_model],
        "Resale Count", COUNT('HDB_Resale_Flats'[resale_price])
    ),
    [Resale Count],
    DESC)
```

## Visualization and Dashboard Setup

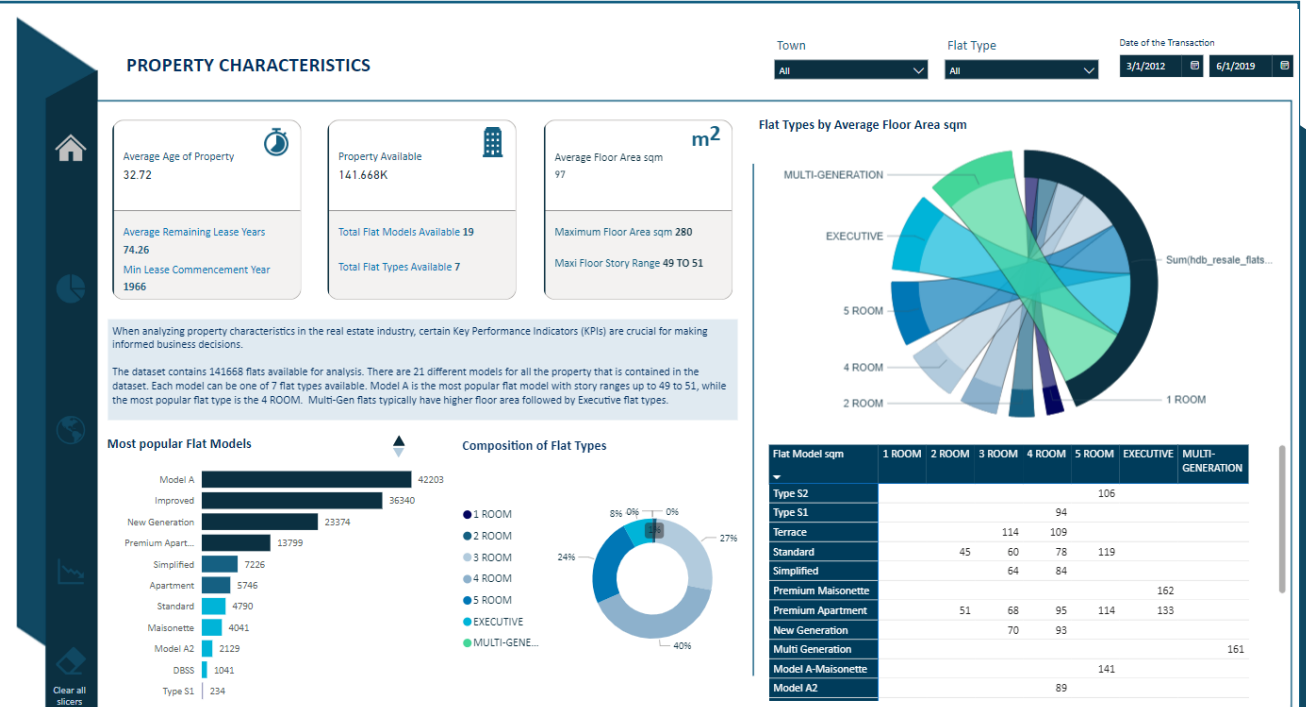
We utilized default and custom visuals such as Deneb for bespoke data visualizations, filters and tooltips to enable users to drill down into specific regions, flat models, and time periods for more detailed analysis.

# PROPERTY CHARACTERISTICS

## About this page

The dataset contains 141,668 flats available for analysis. There are 21 different models for all the property that is contained in the dataset. Each model can be one of 7 flat types available. Model A is the most popular flat model with story ranges up to 49 to 51, while the most popular flat type is the 4 ROOM. Multi-Gen flats typically have higher floor area followed by Executive flat types.

- Average Age of Property is 32 years while the Average Remaining Lease period is 74 years.
- The average floor area is about 92m<sup>2</sup>
- Flat Types by Floor Area m<sup>2</sup> shows that the Multi-Generation flat types typically have larger floor area.
- The most popular flat models (by quantity of properties in the market) are the Model A models with flat types from 1 to 5 ROOMs, followed by the Improved flat model with flat types from 1 to 5 ROOMs as well.
- The lease popular flat models are Premium Maisonette, Improved Maisonette and the Multi-Generation flat models.



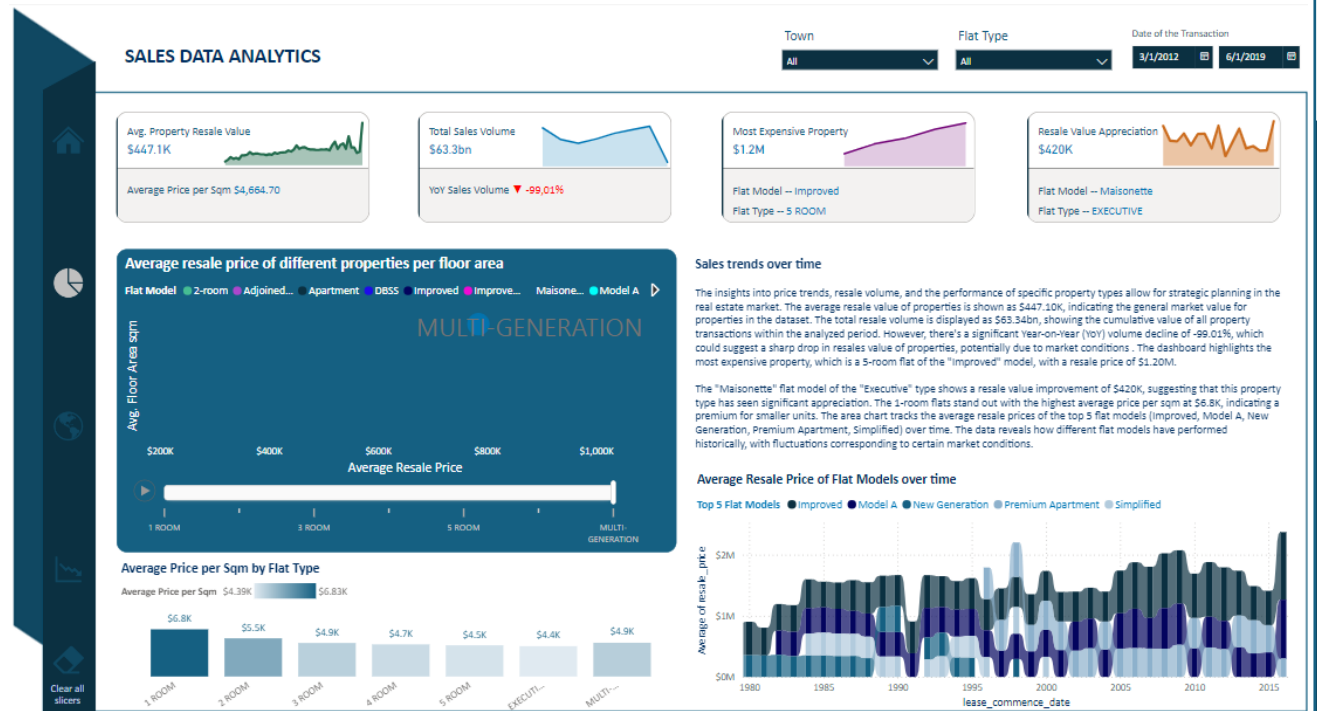
The market for flats is dominated by mid-sized properties, particularly Model A and 4 ROOM flats, which are the most popular choices among buyers. Larger, more specialized flats like Multi-Generation and Executive models, while less common, cater to niche segments looking for more space. The market also consists of older properties, averaging 32 years in age, with a substantial remaining lease period of 74 years, which could influence resale values and long-term investment potential. Overall, the market favors practicality and affordability, with a strong demand for mid-sized, well-located flats.

# SALES DATA ANALYTICS

## About this page

The insights into price trends, resale volume, and the performance of specific property types allow for strategic planning in the real estate market.

- The **average resale value of properties** is shown as **\$447.10K**, indicating the general market value for properties in the dataset.
- The **total resale volume** is displayed as **\$63.34bn**, showing the cumulative value of all property transactions within the analyzed period.
- However, there's a significant **Year-on-Year (YoY) volume decline of -99.01%**, which could suggest a sharp drop in resales value of properties, potentially due to market conditions.
- The dashboard highlights the **most expensive property**, which is a **5-room flat of the "Improved" model**, with a resale price of **\$1.20M**.
- The **1-room flats** stand out with the **highest average price per sqm at \$6.8K**, indicating a premium for smaller units



The "Maisonette" flat model of the "Executive" type shows a resale value improvement of \$420K, suggesting that this property type has seen significant appreciation. The area chart tracks the average resale prices of the top 5 flat models (Improved, Model A, New Generation, Premium Apartment, Simplified) over time. The data reveals how different flat models have performed historically, with fluctuations corresponding to certain market conditions.

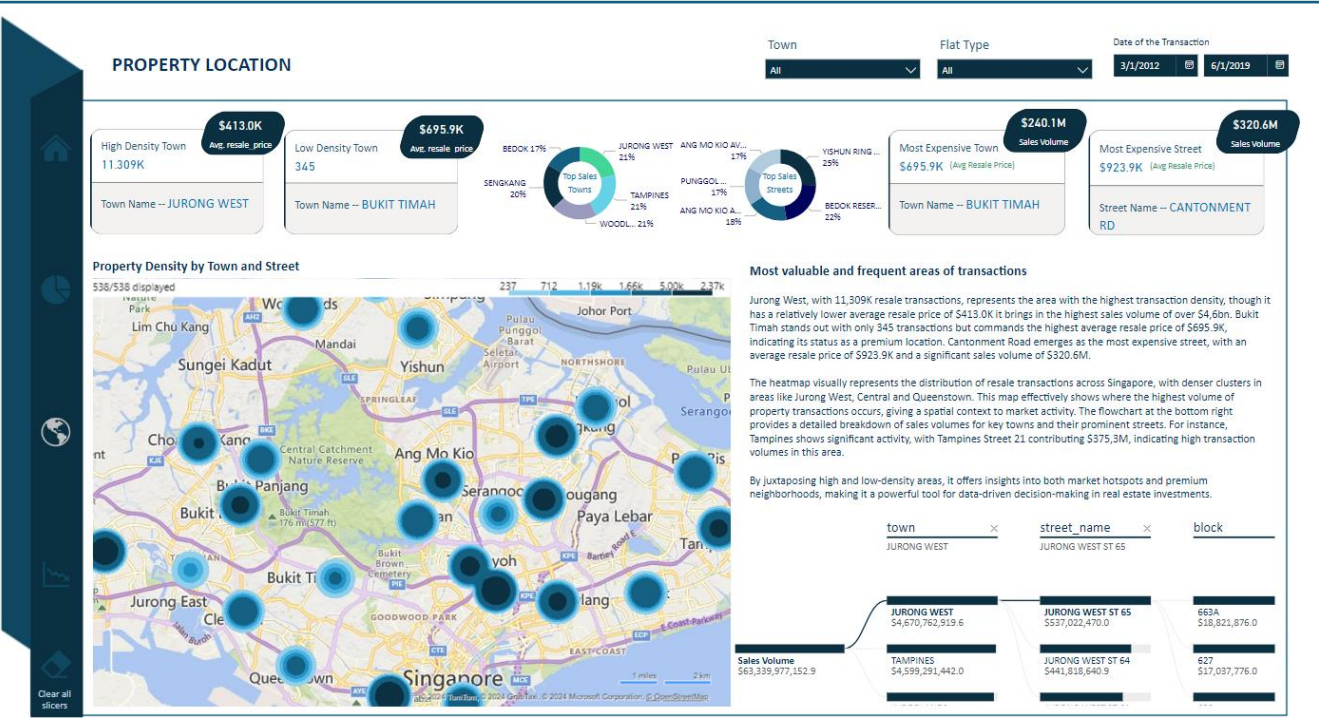


# PROPERTY LOCATION

## About this page

By juxtaposing high and low-density areas, it offers insights into both market hotspots and premium neighborhoods, making it a powerful tool for data-driven decision-making in real estate investments.

- Jurong West, with 11,309K resale transactions, represents the area with the highest transaction density, though it has a relatively lower average resale price of \$413.0K it brings in the highest sales volume of over \$4,6bn.
- Bukit Timah stands out with only 345 transactions but commands the highest average resale price of \$695.9K, indicating its status as a premium location.
- Cantonment Road emerges as the most expensive street, with an average resale price of \$923.9K.
- The heatmap visually represents the distribution of resale transactions across Singapore, with denser clusters in areas like Jurong West, Central and Queenstown.
- Tampines shows significant activity, with Tampines Street 21 contributing \$375,3M, indicating high transaction volumes in this area.



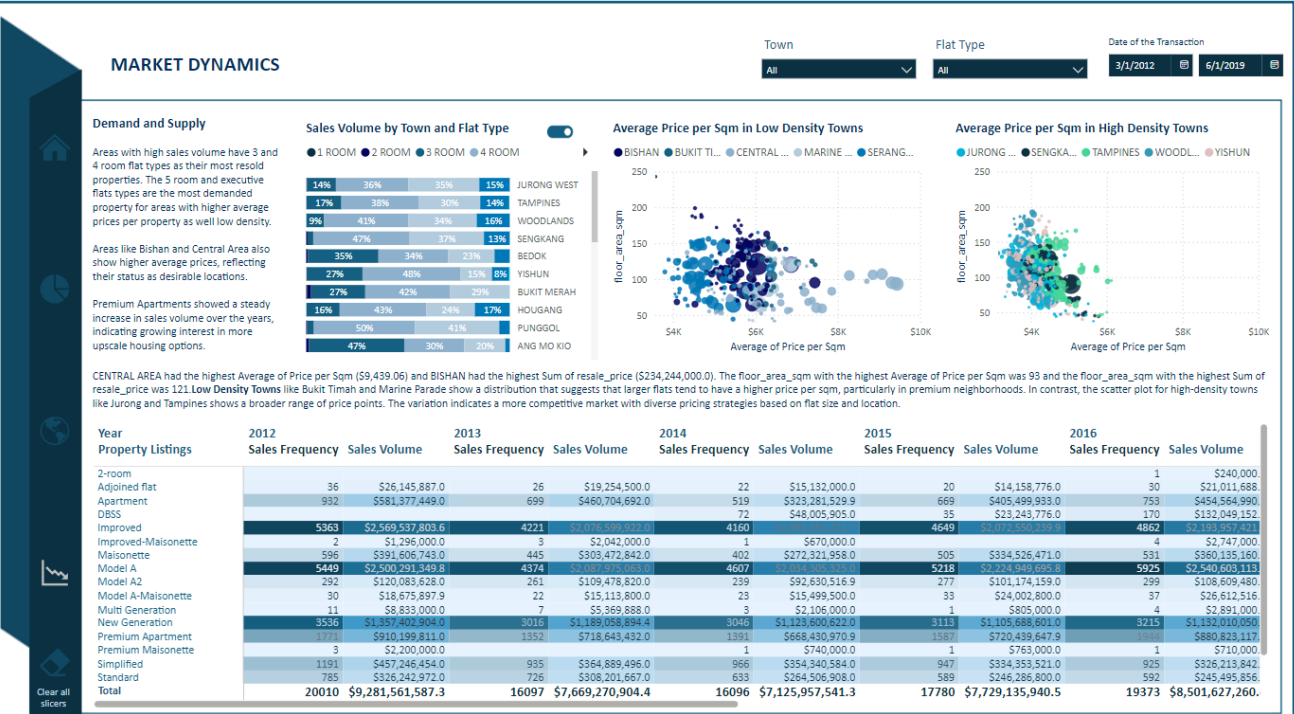
"Jurong West" and "Bukit Timah" are shown as areas with significant market activity, indicating high demand and potentially lucrative investment opportunities. The map visualization helps stakeholders easily identify regions with high transaction volumes, guiding strategic decisions on where to focus resources. The report also highlights key areas with high transaction values and frequency, providing actionable insights for investment opportunities.

# MARKET DYNAMICS

## About this page

Premium Apartments showed a steady increase in sales volume over the years, indicating growing interest in more upscale housing options.

- Areas with high sales volume have 3 and 4 room flat types as their most resold properties. The 5 room and executive flats types are the most demanded property for areas with higher average prices per property as well low density.
- Areas like Bishan and Central Area also show higher average prices, reflecting their status as desirable locations.
- Central Area had the highest Average of Price per Sqm (\$9 439,06) and Bishan had the highest sum of resale\_price (\$234 244 000,0).
- Low Density Towns like Bukit Timah and Marine Parade show a distribution that suggests that larger flats tend to have a higher price per sqm, particularly in premium neighborhoods. In contrast, the scatter plot for high-density towns like Jurong and Tampines shows a broader range of price points. The variation indicates a more competitive market with diverse pricing strategies based on flat size and location.



The demand is concentrated in certain areas, suggesting where future developments could be most profitable. For instance, there is high upscale housing demand, and areas with mid-size flats are popular among average households. On the other hand, in high-price, low-density areas, 5 room and executive flats are most in demand, reflecting a preference for spacious, luxury homes. While larger flats in low-density areas tend to have higher prices per square meter, than areas of high density like Jurong and Tampines.



## RECOMMENDATIONS

1. Given the rising sales volume of Premium Apartments, developers and investors **should consider increasing their focus on upscale housing projects**. This could include luxury developments or high-end renovations in desirable locations.
2. In areas with consistently high sales volumes, it's crucial to **continue offering 3 and 4 room flats**, as these are the most in-demand property types. Ensuring a steady supply can help meet market demand and stabilize prices in areas such as "Jurong West" and "Tampines". These areas demonstrate strong market activity and potential for profitable investments
3. In low-density, high-price areas, there is **strong demand for larger flats**. Developers should prioritize these types of properties in affluent neighborhoods to meet the preferences of buyers seeking more spacious, luxurious living spaces.
4. Focus on **Central Area and Bishan**, these areas **command higher prices**, making them attractive for investment in premium or luxury developments. High-return opportunities may exist in acquiring, renovating, or developing properties in these locations.
5. Leverage **High Price per Sqm in low-density towns like Bukit Timah and Marine Parade**, the higher price per square meter for larger flats suggests potential for significant returns.

## Conclusion

The report concludes that Singapore's real estate market presents diverse opportunities for investment, driven by varying demand patterns across different property types and locations.

The analysis highlights the **importance of strategically targeting high-demand areas, such as Jurong West and Tampines**, where strong market activity and significant price appreciation offer promising returns.

**Diversification across property types** is emphasized, particularly in considering premium models like Multi-Generation flats, which command higher resale prices. Additionally, high-density towns are identified as key areas for future developments due to their sustained demand and higher average prices per square meter.

For long-term success, it is recommended to **leverage data-driven insights for strategic marketing**, ensuring that offerings align with buyer preferences in targeted locations. Moreover, lower-density areas, while offering immediate profitability, should be included in long-term investment plans as **urban expansion drives demand in these regions**.

Overall, the report underscores the **necessity of a nuanced investment approach** that balances immediate opportunities in high-demand areas with future growth potential in emerging markets.

THANK YOU.



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