

# BANDUNG HOUSING MARKET

*An Analysis of Bandung's Housing Prices and Market Trends*

PORTFOLIO PROJECT  
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# Introduction

The housing market in Bandung is constantly evolving, shaped by factors such as location, property size, and economic conditions. This analysis explores key trends in house prices, the main factors influencing property values, and how prices vary across different areas. By leveraging a data-driven approach, this report aims to provide valuable insights for better decision-making.

Through the ETL process and Exploratory Data Analysis (EDA), we identified the key drivers of house prices, including location, land size, and building area.

- **Objective:** Understand housing price patterns in Bandung.
- **Data Source:** Scraping from online real estate platforms & property listings.
- **Key Metrics:** Price distribution, segmentation, and influencing factors.
- **Analysis Tools:** Python
- **Data Visualization:** Tableau & Seaborn



# Dataset Overview

This dataset consists of 4,185 house listings collected from an online property platform, filtered specifically for the Bandung area using Web Scraping techniques. It includes key details such as price, location, land size, building size, number of bedrooms, number of bathrooms, and garage capacity.

	column	data_type	sample_values
0	id_listing	object	[hos13355611, hos13440338, hos16919960]
1	judul	object	[Rumah Classic Bergaya Victorian Setraduta Ful...]
2	harga	object	[Rp 2,65 Miliar, Rp 925 Juta, Rp 8,2 Miliar]
3	alamat	object	[Setra Duta, Bandung, Kopo, Bandung, Setra Dut...]
4	kamar_tidur	float64	[3.0, 2.0, 4.0]
5	kamar_mandi	float64	[3.0, 1.0, 3.0]
6	garasi/carport	float64	[2.0, 2.0, 3.0]
7	luas_tanah	object	[: 76 m <sup>2</sup> , : 168 m <sup>2</sup> , : 389 m <sup>2</sup> ]
8	luas_bangunan	object	[: 225 m <sup>2</sup> , : 45 m <sup>2</sup> , : 400 m <sup>2</sup> ]

# Data Transformation



## Data Preprocessing & Standardization

To ensure data consistency and accuracy, several preprocessing and standardization steps were applied:

- Converted house prices into integer format (harga\_rp).
- Standardized numerical values for bedrooms, bathrooms, and garage/carport capacity as integers.
- Formatted land size and building size as integers in square meters (sqm).



## Feature Engineering

New features were added to enhance the analysis:

- Price segmentation and area segmentation for better property classification.
- Extracted district (Kecamatan) from the address (alamat) column.
- Added Latitude & Longitude to calculate the distance to the city center, enabling deeper analysis of location-based pricing factors.



## Data Filtering

Approximately 1,883 listings were identified as being located in Bandung Regency, while this analysis focuses exclusively on Bandung City. These listings were removed, refining the dataset to 2,302 house listings for further analysis.

	column	data_type
0	id_listing	object
1	judul	object
2	harga	object
3	alamat	object
4	kamar_tidur	float64
5	kamar_mandi	float64
6	garasi/carport	float64
7	luas_tanah	object
8	luas_bangunan	object

	column	data_type
0	id_listing	object
1	judul	object
2	harga	object
3	alamat	object
4	kamar_tidur	int64
5	kamar_mandi	int64
6	garasi/carport	int64
7	harga_rp	int64
8	luas_tanah_sqm	int64
9	luas_bangunan_sqm	int64
10	kecamatan	object
11	wilayah	object
12	segmen_harga	object
13	segmen_lt	object
14	latitude	float64
15	longitude	float64
16	jarak_pusat_kota(km)	float64

# Central Tendency Measure

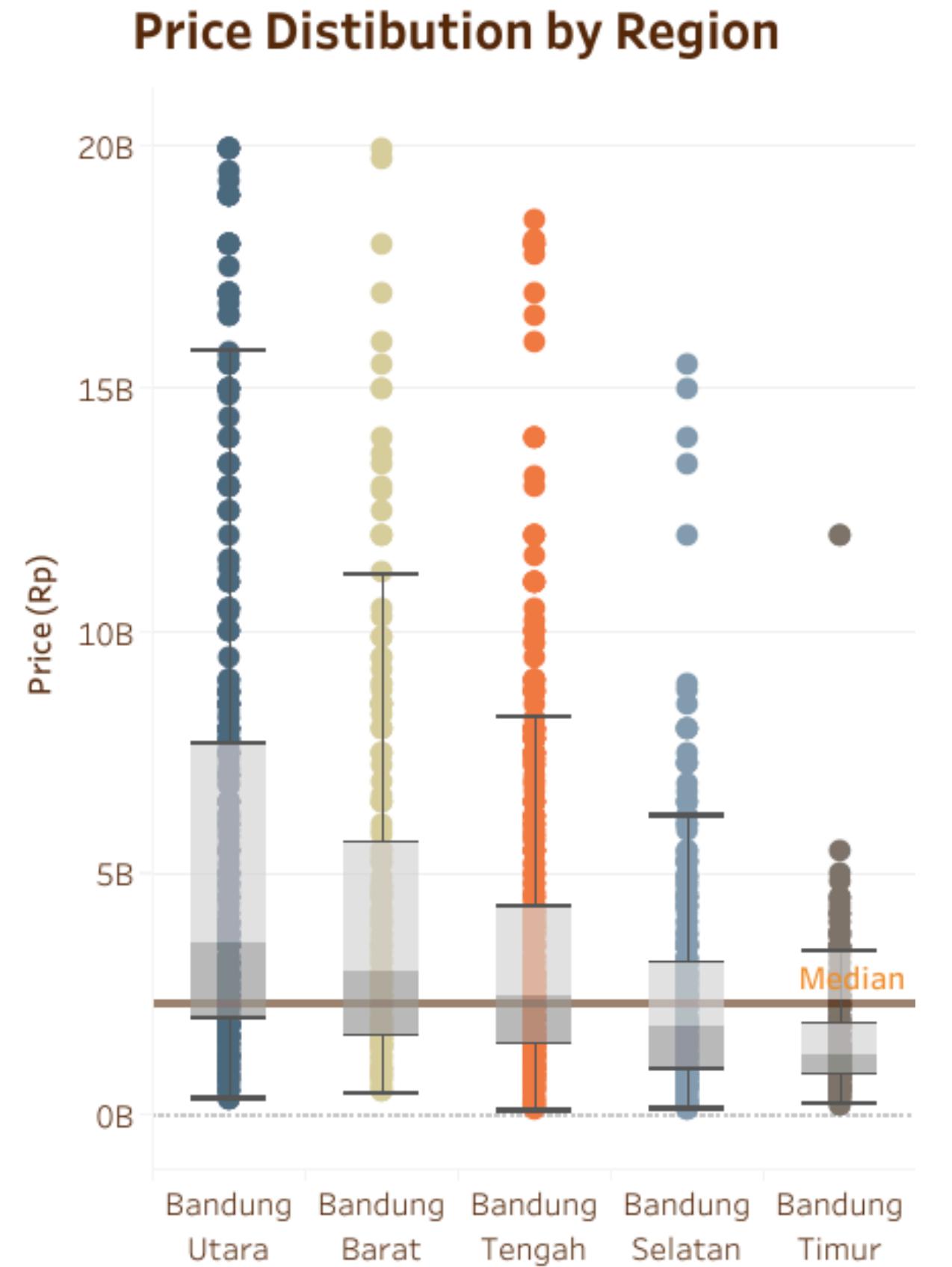
In this analysis and moving forward, the median is used as the central tendency measure due to the presence of numerous outliers in the dataset. However, these outliers are not removed to ensure that the dataset accurately represents the actual distribution of house prices.

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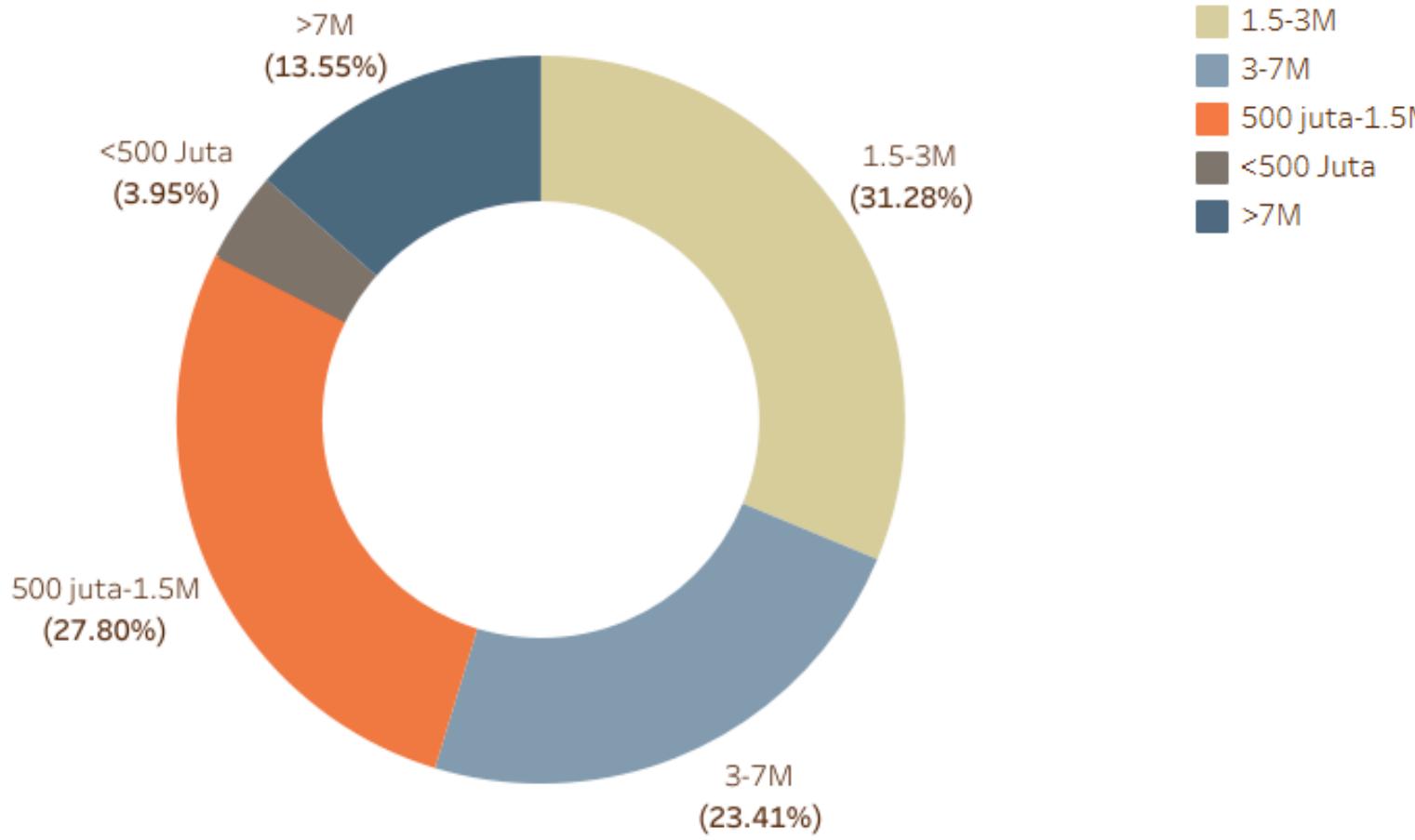
# Price Distribution

House prices in North Bandung vary significantly, with the lowest prices starting at around IDR 400 million and the highest reaching up to IDR 20 billion. The presence of numerous outliers reflects the wide price disparities in this area.

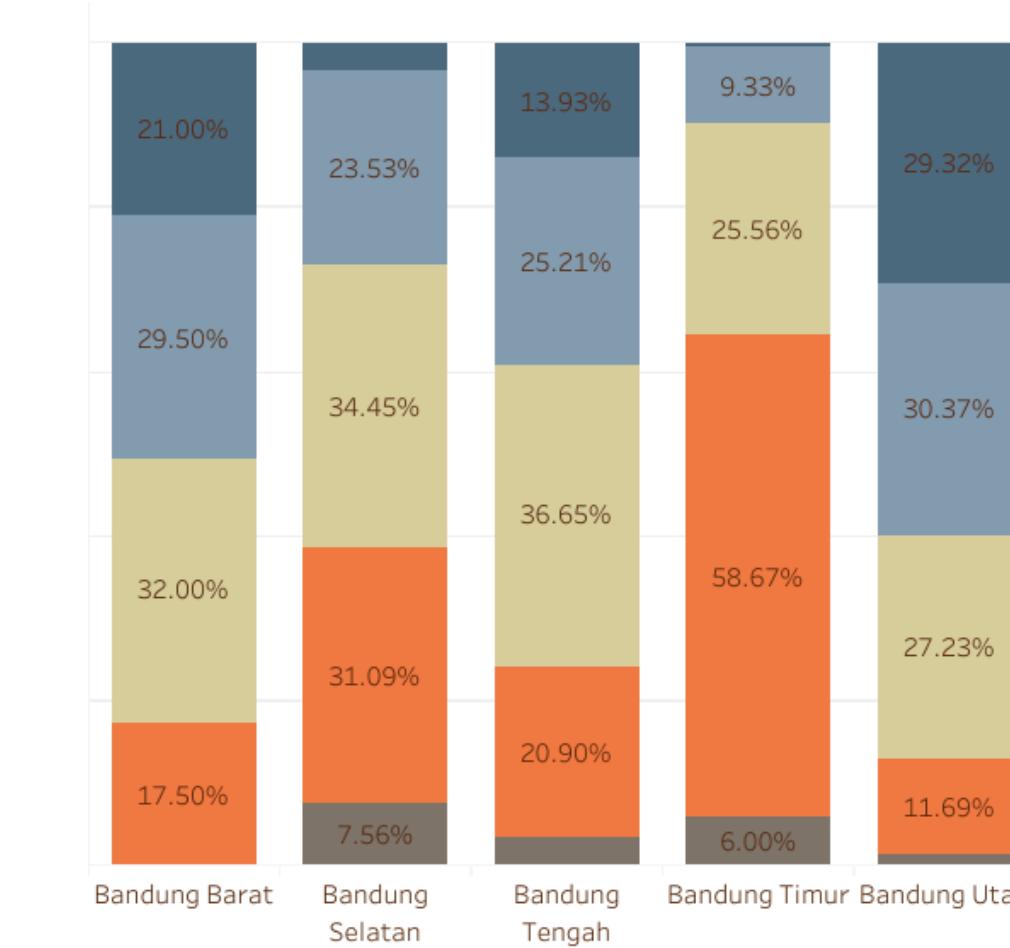
North Bandung also has the highest median house price, at IDR 3.6 billion, followed by West Bandung at IDR 3 billion and Central Bandung at IDR 2.5 billion. These three areas have a higher median house price compared to Bandung City's overall median, which stands at IDR 2.3 billion.



# Price Segmentation

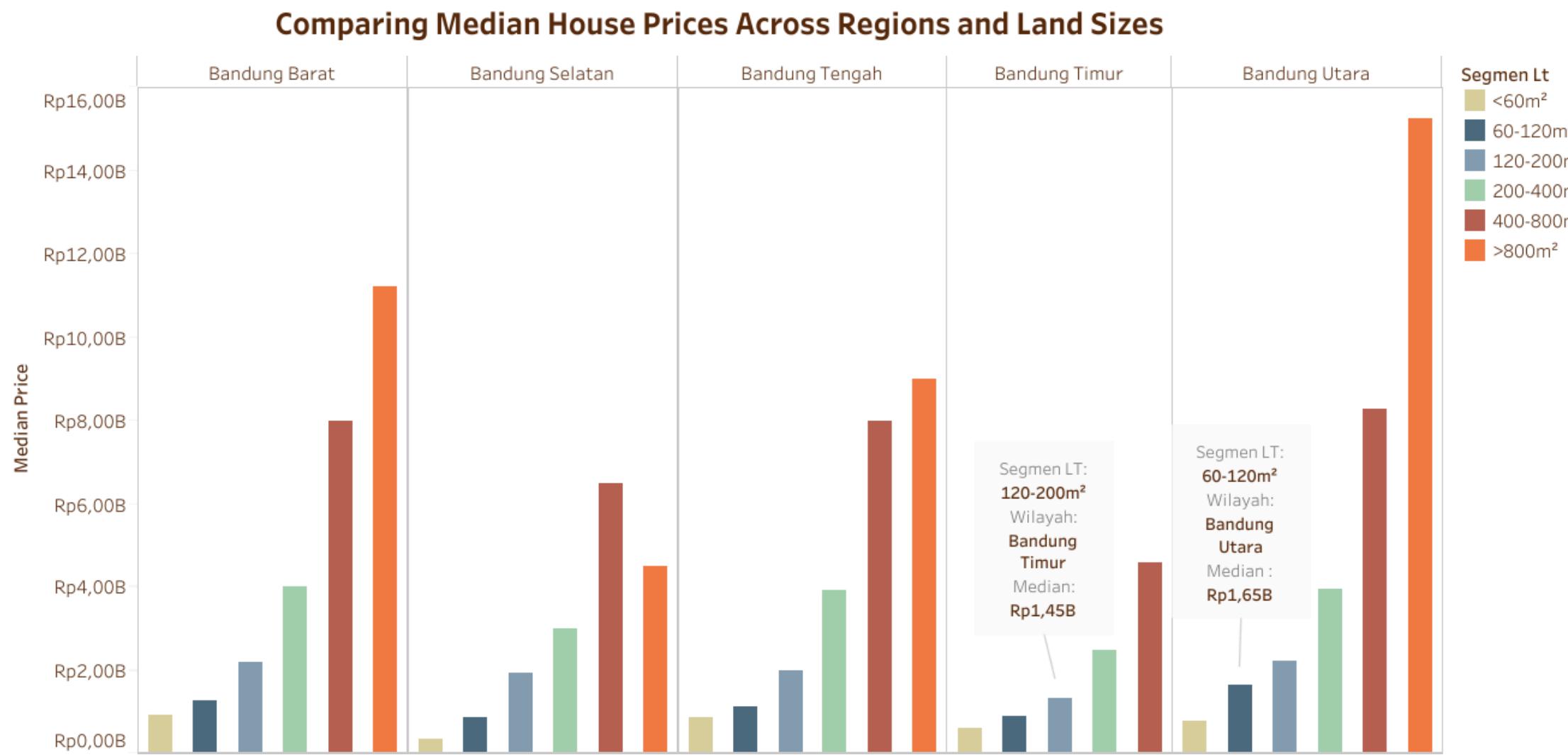


The Bandung property market has a wide range of prices. Most houses are priced between IDR 1.5 – 3 billion (31.28%) and IDR 500 million – 1.5 billion (27.80%). Meanwhile, only 13.55% of properties are priced above IDR 7 billion, while affordable homes under IDR 500 million are quite rare (3.95%).



East Bandung is the most affordable area, with 58.67% of its properties priced between IDR 500 million and 1.5 billion. In contrast, North Bandung has the highest share of luxury homes, with 29.32% of properties priced above IDR 7 billion, highlighting its status as a premium residential area.

# North Bandung is the Most Expensive Area



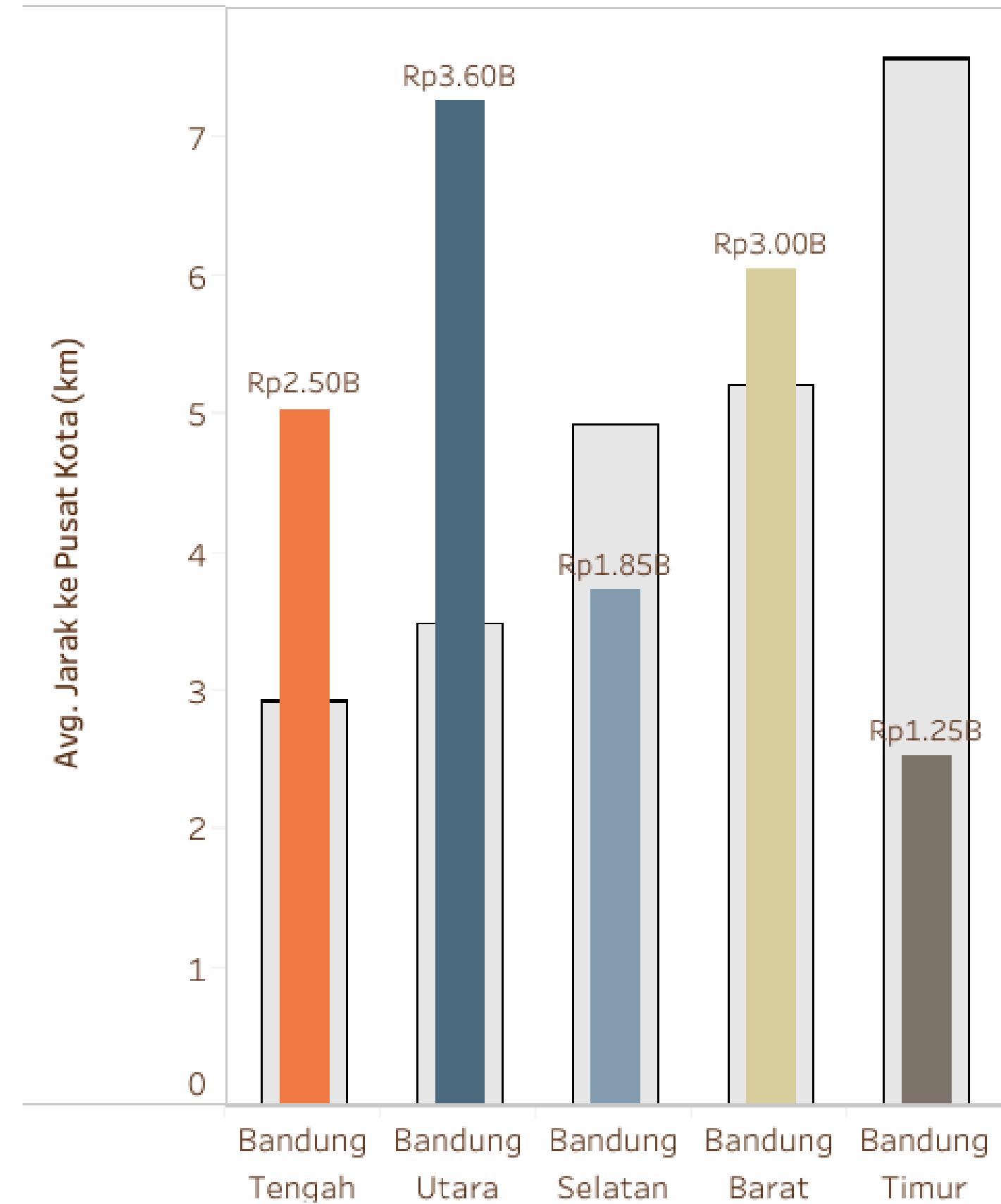
The data reveals that houses in North Bandung with a land size of 61–120m<sup>2</sup> are priced 12% higher (around IDR 200 million) than larger houses (120–200m<sup>2</sup>) in East Bandung.

Additionally, across almost all land size segments, North Bandung consistently has the highest median house prices compared to other areas. This confirms its status as a premium property market in Bandung.

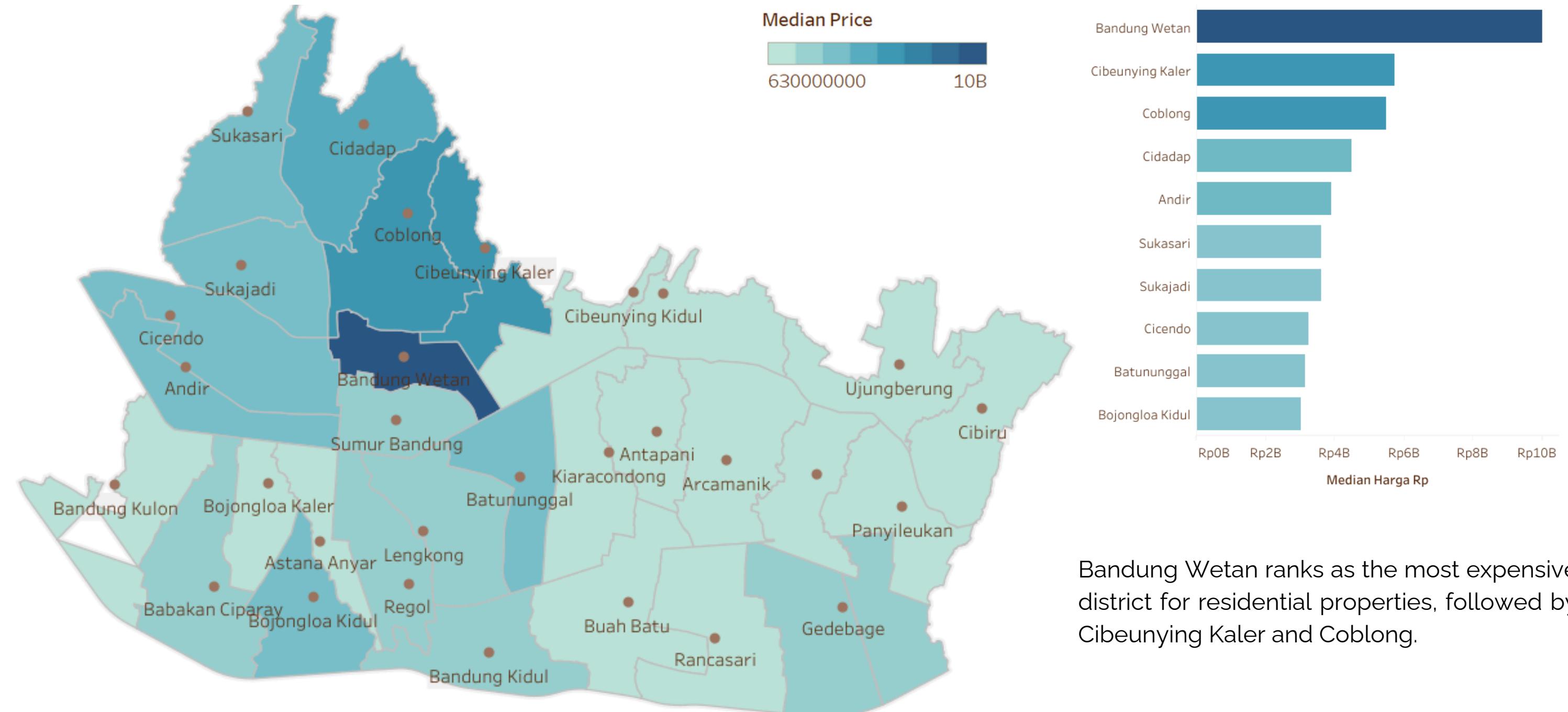
# Proximity to City Center

One of the key reasons behind North Bandung's high property prices is its relatively short distance to the city center, averaging 3.5 km. This makes it the second closest area after Central Bandung, with only a 500-meter difference between them.

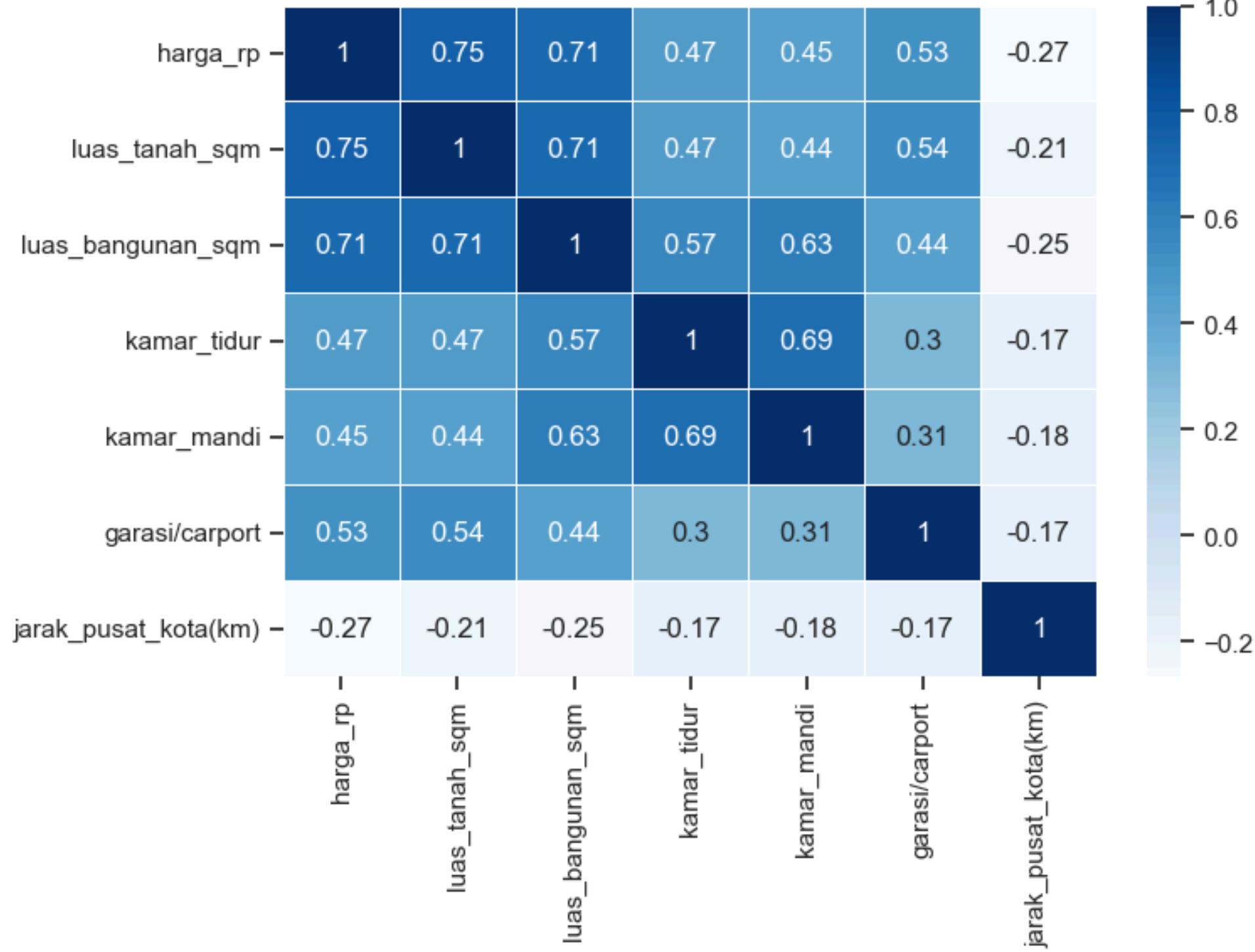
## House Price vs Distance to City Center



# Top 10 Most Expensive Districts in Bandung



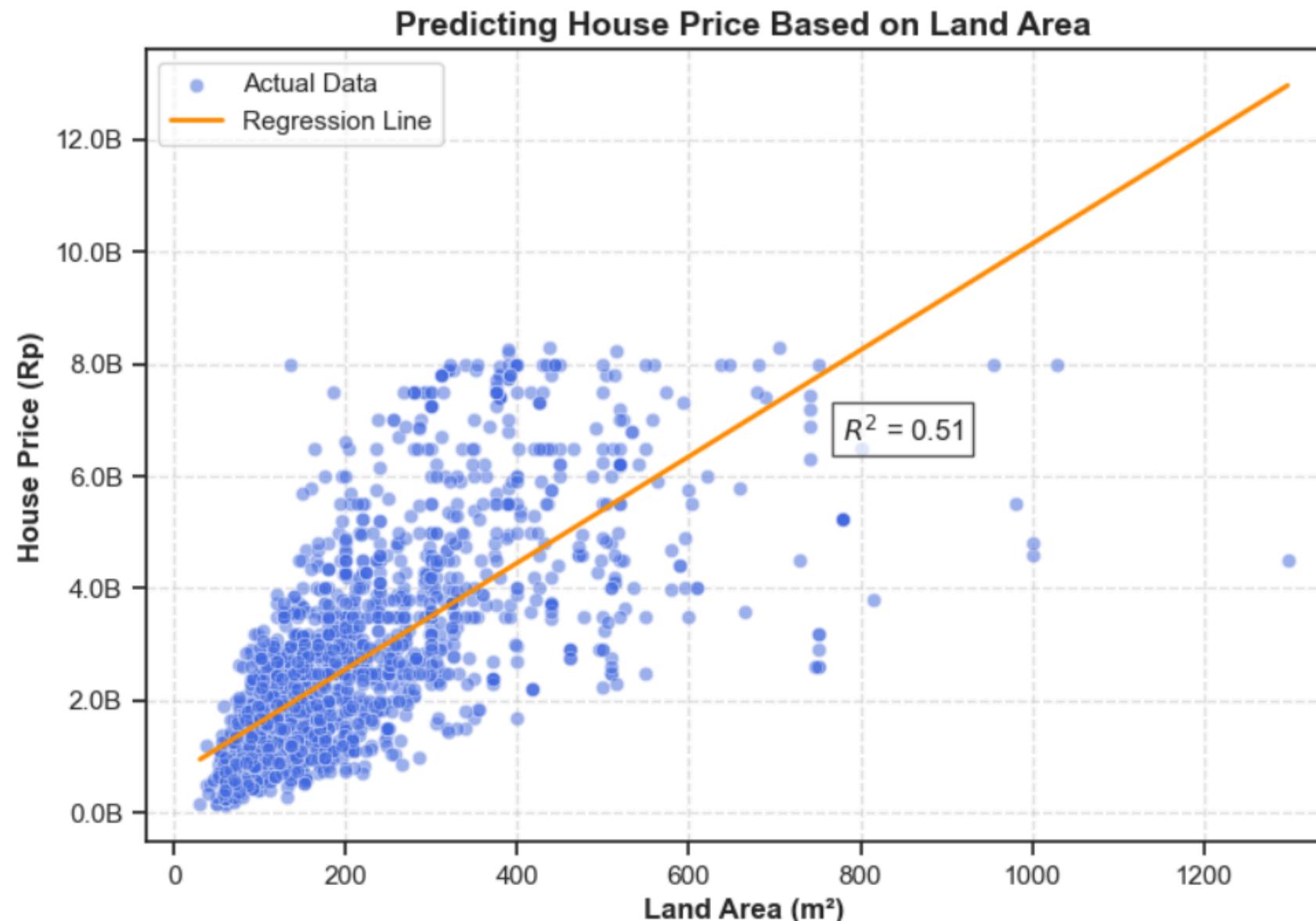
# What Determines House Prices?



Land size and building size are the strongest factors influencing house prices, with a high correlation coefficient above 0.7.

While proximity to the city center does affect house prices, its impact is less significant compared to land and building size, with a lower correlation coefficient below 0.5.

# Simple Regression



The regression equation derived from the model is:

$$Y^{\wedge} = 670,000,000 + 9,470,000 \times X$$

- Intercept ( $\beta_0$ ) = 670 juta → The base house price, assuming zero land area.
- Coefficient ( $\beta_1$ ) = 9.47 juta → For every 1 m<sup>2</sup> increase in land size, the house price is estimated to rise by IDR 9.47 million.

The model has an  $R^2$  value of 0.509, meaning land size explains approximately 50.9% of the variation in house prices within this dataset.

# Summary & Recommendations

## Summary

- ✓ Location is the key determinant of house prices in Bandung.
- ✓ Land and building size significantly impact pricing.
- ✓ Price variations across districts indicate clear market segmentation.

## Recomendation

- ✓ Analyze external factors such as public facilities and transportation access.
- ✓ Introduce additional features to enhance house price estimation models.
- ✓ Leverage machine learning for more accurate price predictions



# Stay In Touch

-  **Full Notebook & Code:** [github.com/nurdinsulaemann/project\\_bdg\\_house\\_price](https://github.com/nurdinsulaemann/project_bdg_house_price)
-  **LinkedIn:** [linkedin.com/in/nurdinsulaeman](https://linkedin.com/in/nurdinsulaeman)
-  **Email:** [nurdinsulaeman28@gmail.com](mailto:nurdinsulaeman28@gmail.com)

