



BEIJING HOUSING MARKET ANALYSIS

GROUP 4
BT2102

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DATA CLEANING

Null Value

1. Imputation: Replace null with average value
2. Deletion: Remove rows or columns with less than 5% of missing values.

Price per Square Metres

Removed unreasonable values (< 9000 Yuan) after outlier analysis

Transaction Period

Kept the transaction period between 2011 and 2017

CONTEXT

TRENDS

WHAT WAS THE TREND OF THE PROPERTY MARKET IN CHINA?

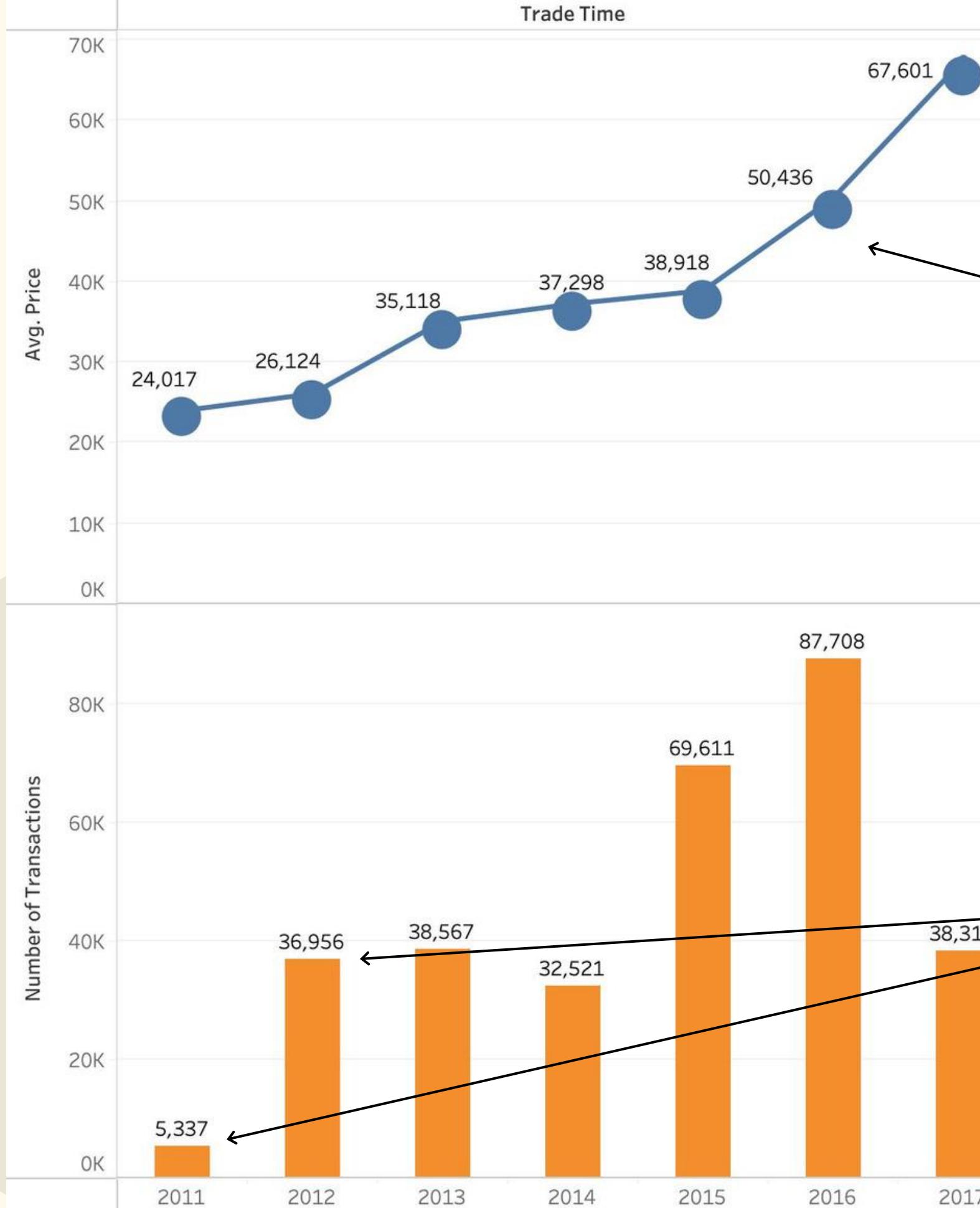
Steep Rise in Price from 2015 -2017

Continuous
Rising Trend in Price

6x increase in volume
of transactions from
2011 - 2012

Trend of Prices and Transaction Volume

Trade Time

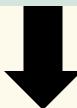


Why is there a steep rise in price from 2015~2017?

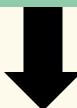
"The central bank lowered the one-year benchmark lending rate by 40 basis points to 5.6 percent and the one-year deposit rate by 25 basis points to 2.75 percent"

- China Daily, 24/11/2014-

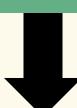
Lower Interest Rate from end of 2014



Lower Mortgage Rate & Reduce the Cost of Borrowing Money



Increase in Volume of Transactions



Rise in Price

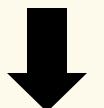
Why is there a 6 times increase in volume of transactions from 2011 to 2012?

"To bring buyers back to the country's housing projects in late March the central bank relaxed downpayment requirements for buyers of second or third homes from 60 to 40 percent in most markets.

The move, which reversed restrictive measures adopted during 2011, brought a large pool of wealthy buyers and speculators back into the market."

-Washington Post-

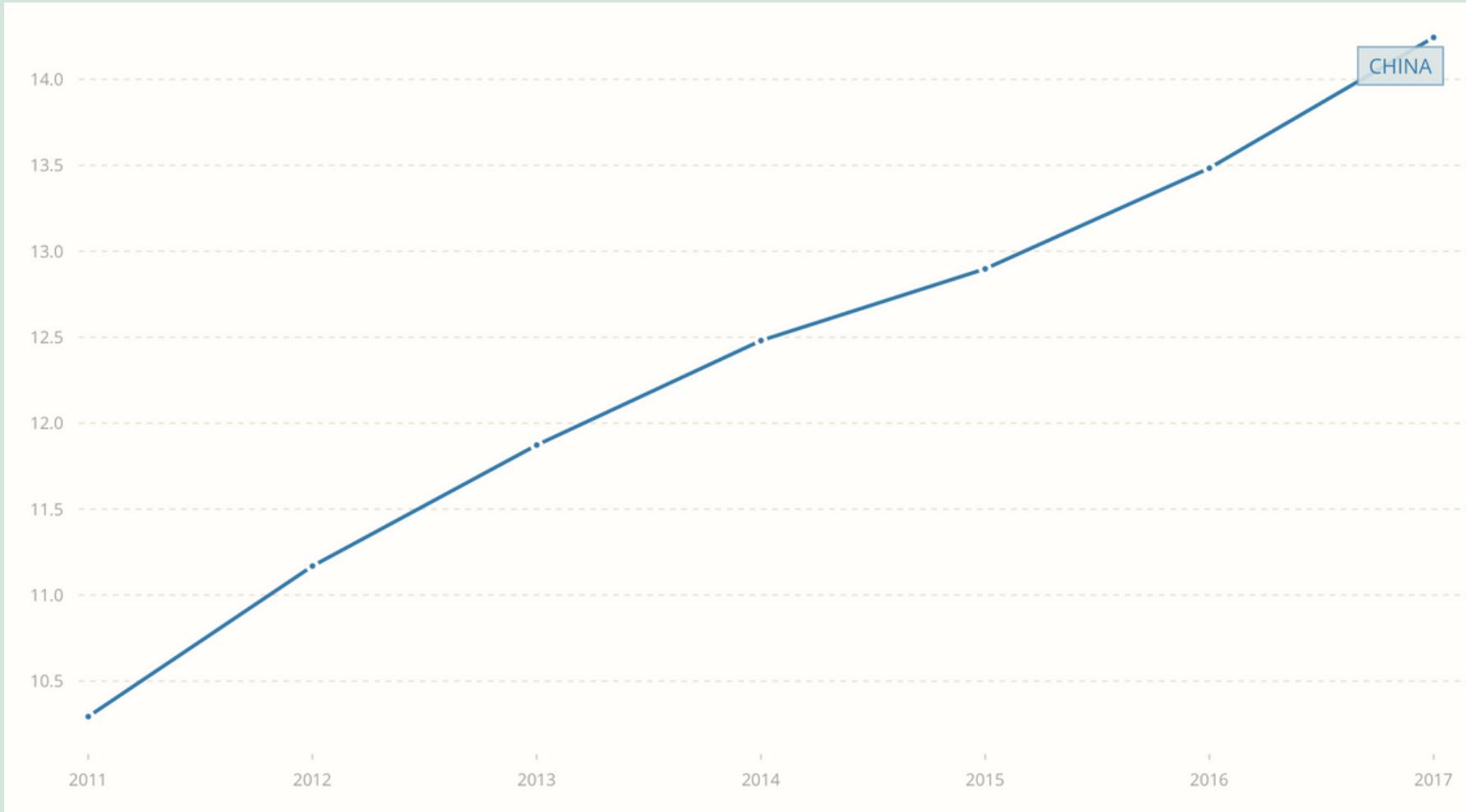
Relaxing downpayment from 60 to 40 percent



Increase in volume of transactions

TRENDS

China's GDP Growth from 2011-2017

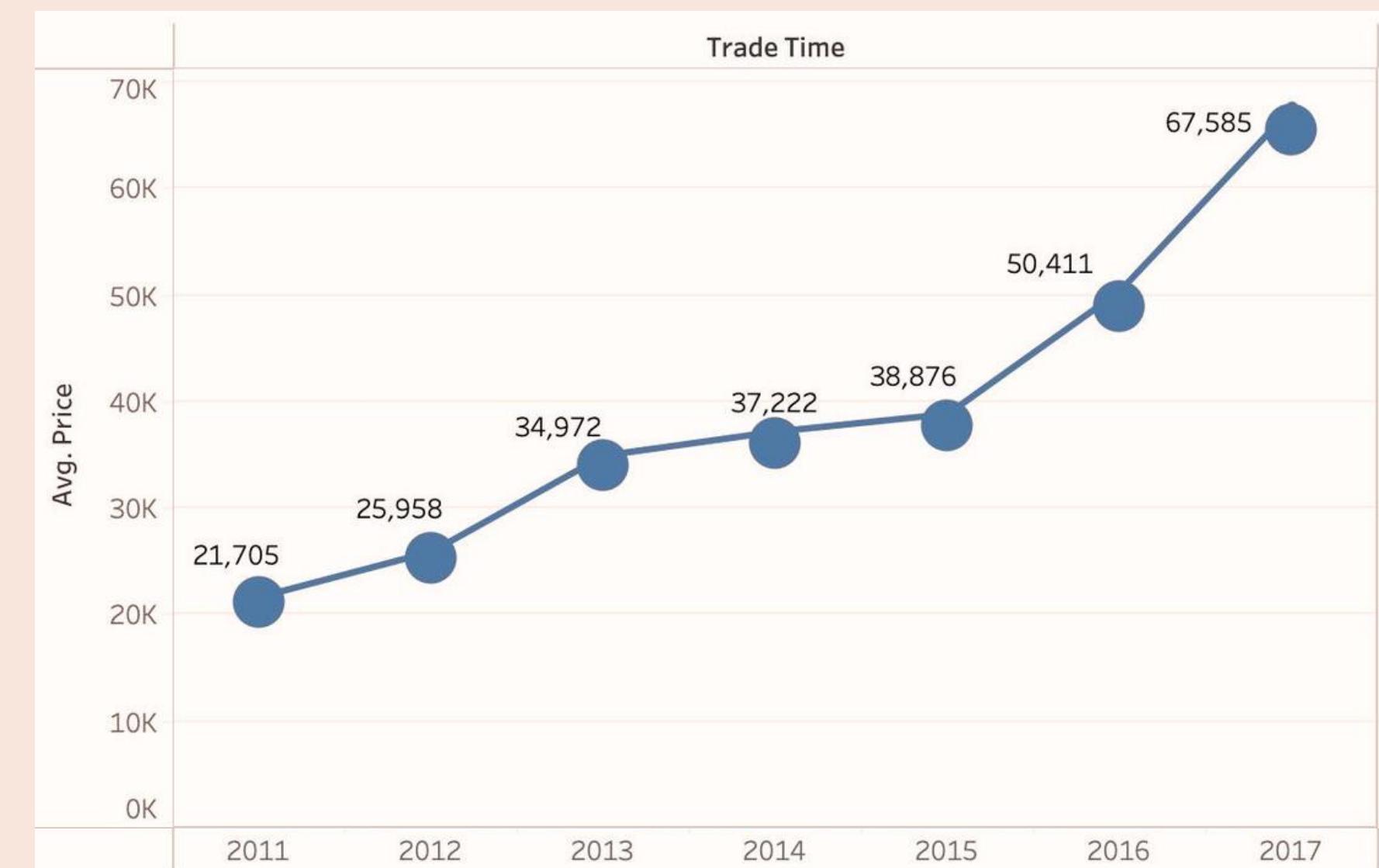


Source: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2022&locations=CN&start=2009>

Both show increasing trends

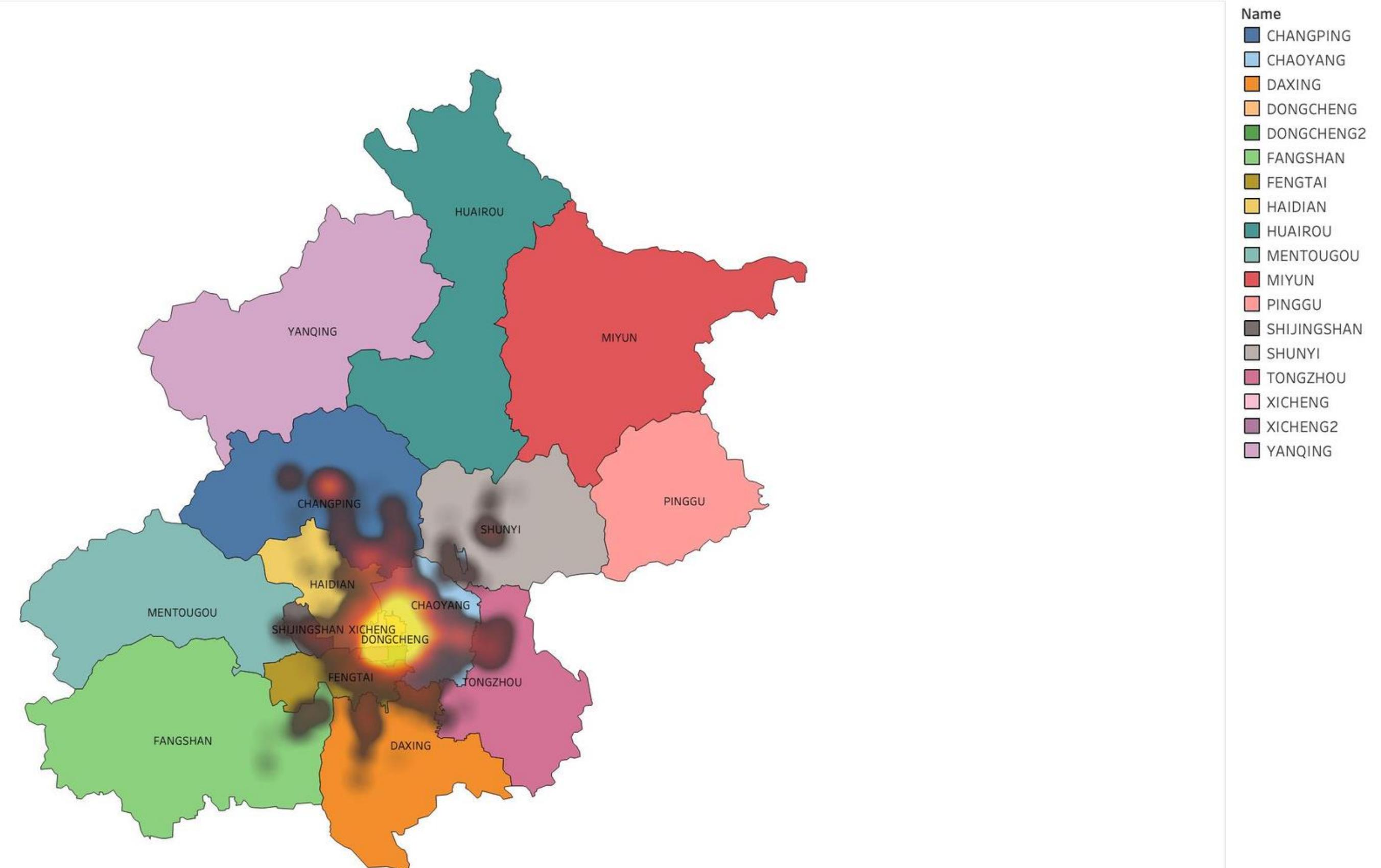
As people's income increases, property prices tend to increase as well, reflecting higher demand for real estate

Trend of Property Prices



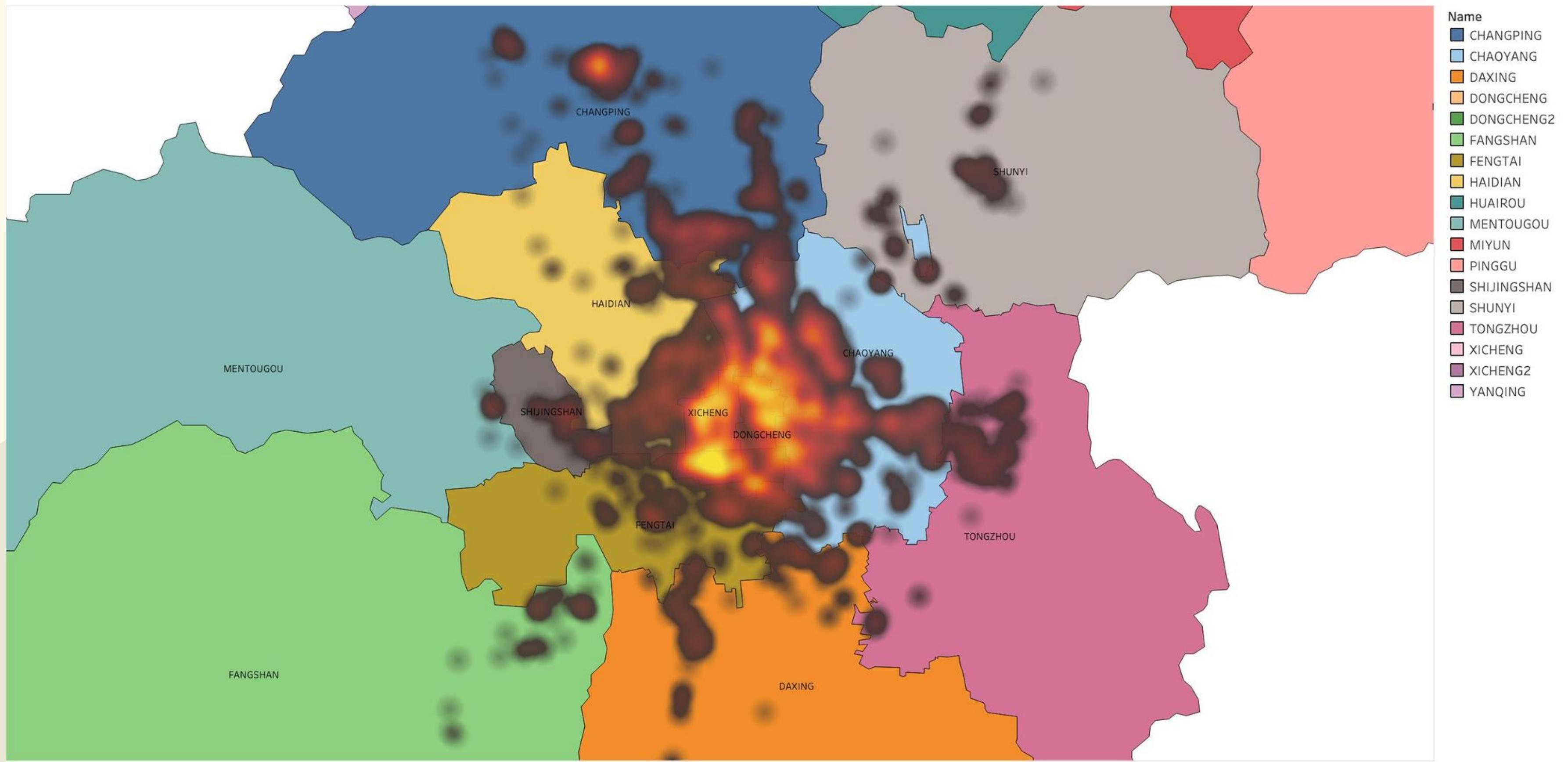
WHERE ARE MOST OF THE TRANSACTIONS HAPPENING?

Density of Property Transactions in Each Districts



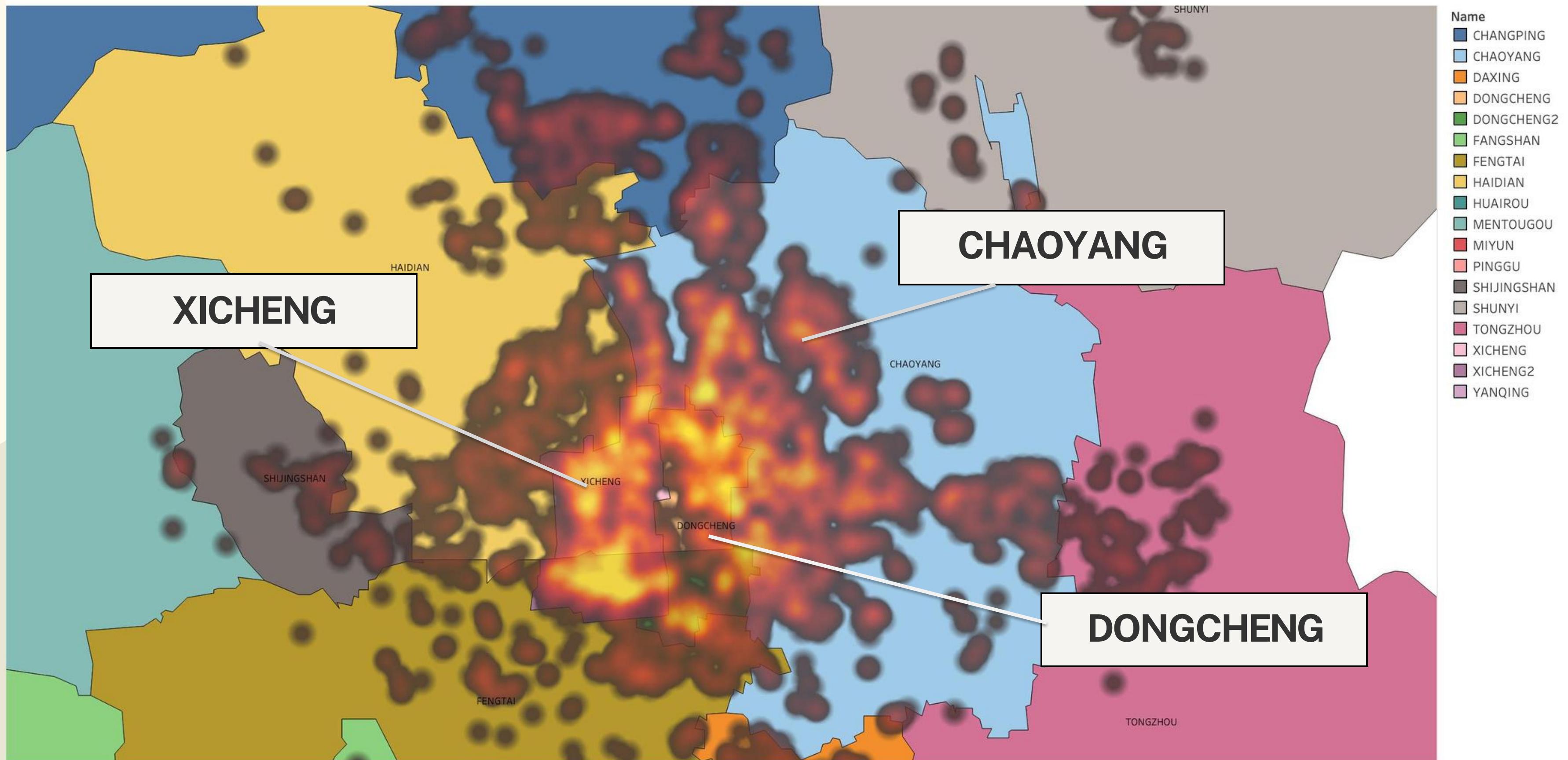
WHERE ARE MOST OF THE TRANSACTIONS HAPPENING?

Density of Property Transactions in Each Districts



WHERE ARE MOST OF THE TRANSACTIONS HAPPENING?

Density of Property Transactions in Each Districts



KEY INSIGHTS

USE OF COLOURS

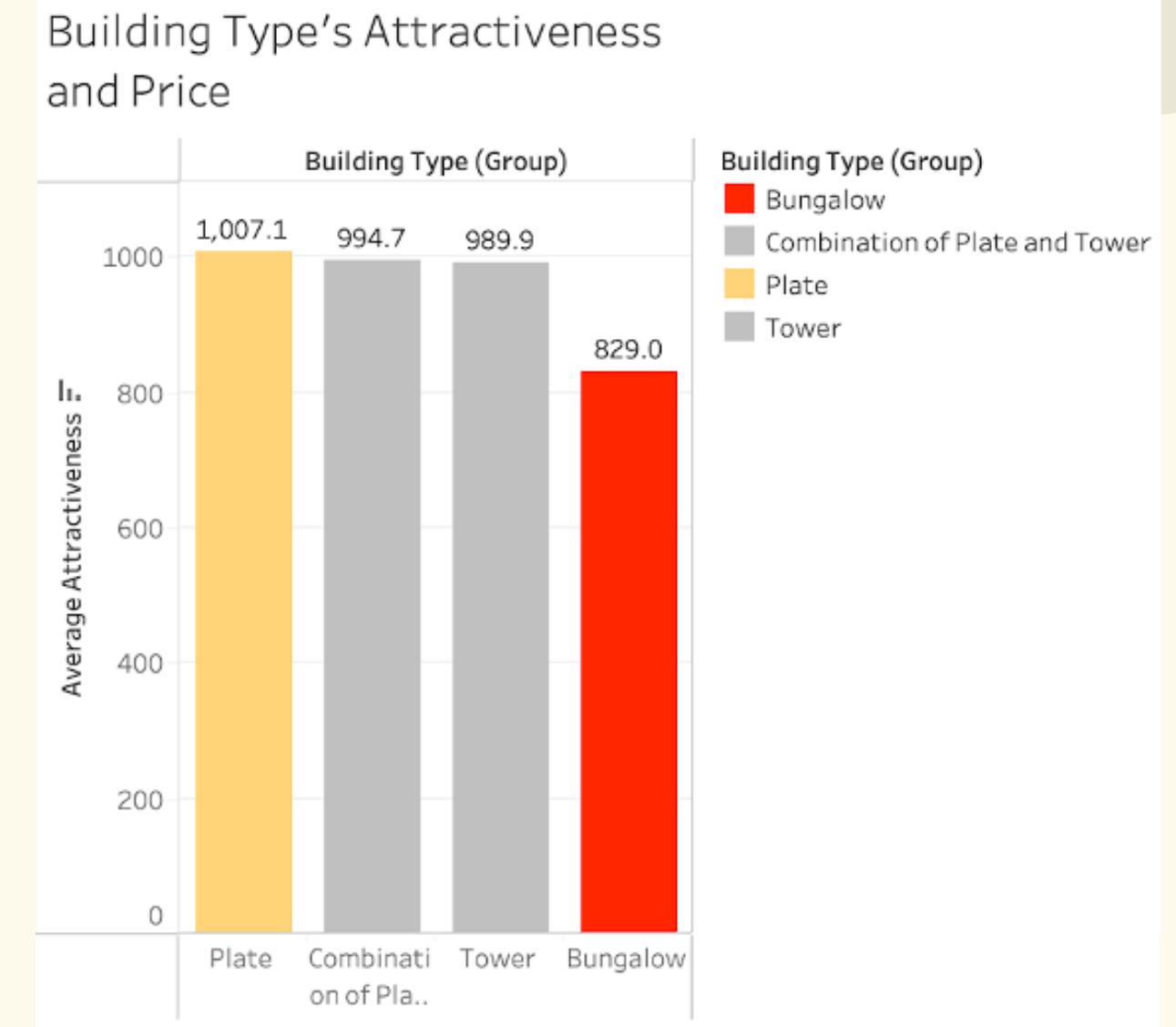
Gold Colour

Represents the group with the most attractiveness.

Red Colour

Represents the group with the least attractiveness.

Example.



HIGHER PRICE

\neq

BETTER INVESTMENT

Property must not be too overpriced for its value

HOW WE QUANTIFIED ATTRACTIVENESS OF THE PROPERTY

Formula of Attractiveness Score (Proxy indicator of Demand):

$$([\text{percentile of } (1 / \text{DOM})] * 0.3 + [\text{percentile of followers}] * 0.7) * 1000$$

Followers

- **People who are interested in the property (May not be able to buy yet)**

DOM

- **Represents the Market Signal (How fast the properties are sold)**

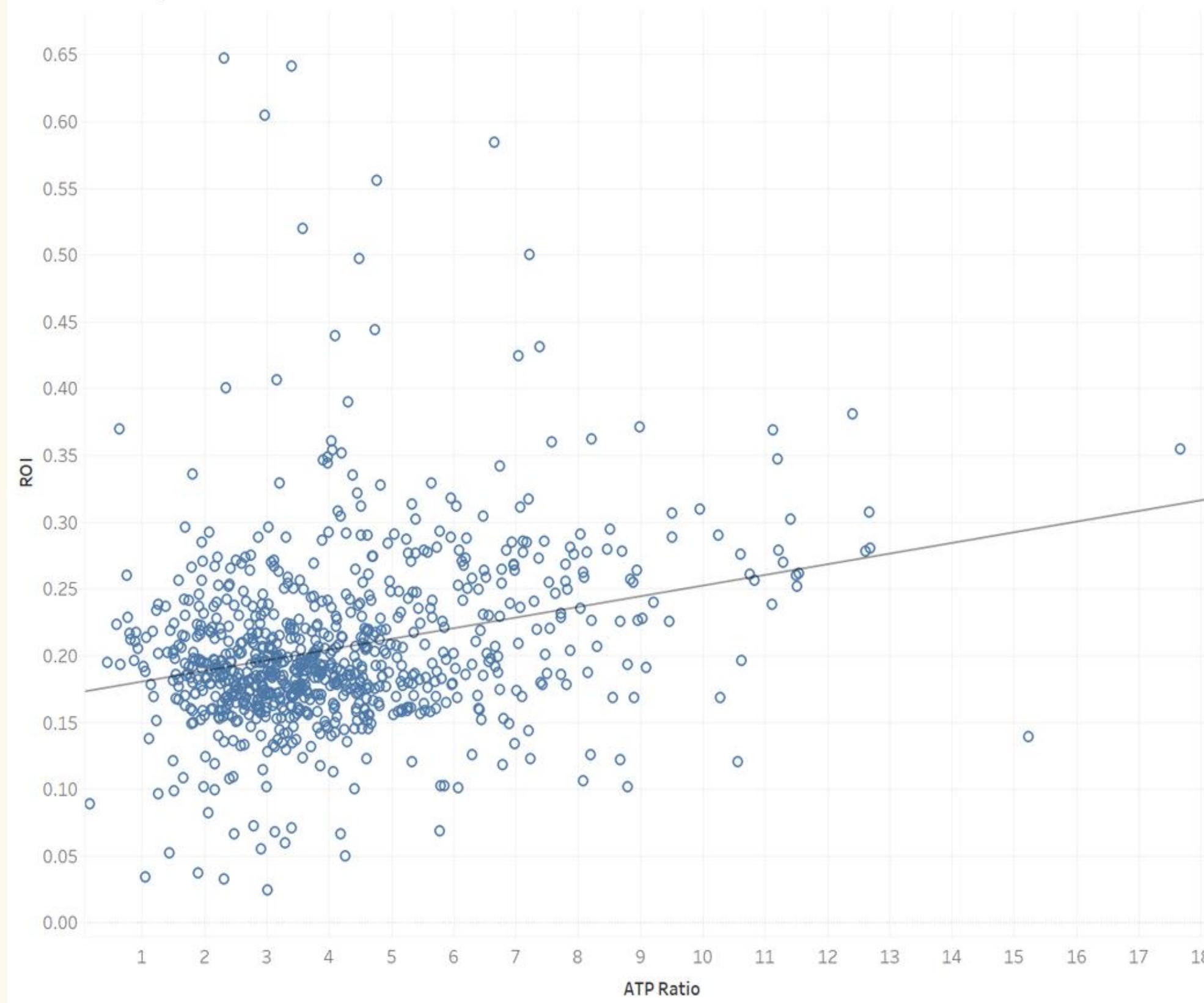
HOW WE QUANTIFIED VALUE OF INVESTMENT OF THE PROPERTY

Attractiveness to Price Ratio (ATP): Attractiveness Score / Price

Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT

JUSTIFICATION AND ASSUMPTION

Relationship between ATP Ratio and ROI



Higher ATP Ratio correlates with
Higher ROI.

**Assume Higher ATP Ratio would
have Higher ROI in the future too**

OUR ANALYSIS

LEVEL 1

Which factors and features of a property affect pricing and attractiveness of a housing unit?

LEVEL 2

Does each factor affect pricing and attractiveness?



LEVEL 3

To what extent does each feature affects the price to attractiveness ratio?



LEVEL 1 QUESTION

**Which factors and
features of a property
affect pricing and
attractiveness of a
housing unit?**

LEVEL 2 QUESTION

**Does each factor
affect pricing and
attractiveness?**

LEVEL 3 QUESTION

**To what extent does
each feature affect the
Attractiveness to Price
(ATP) ratio?**

BUILDING TYPE

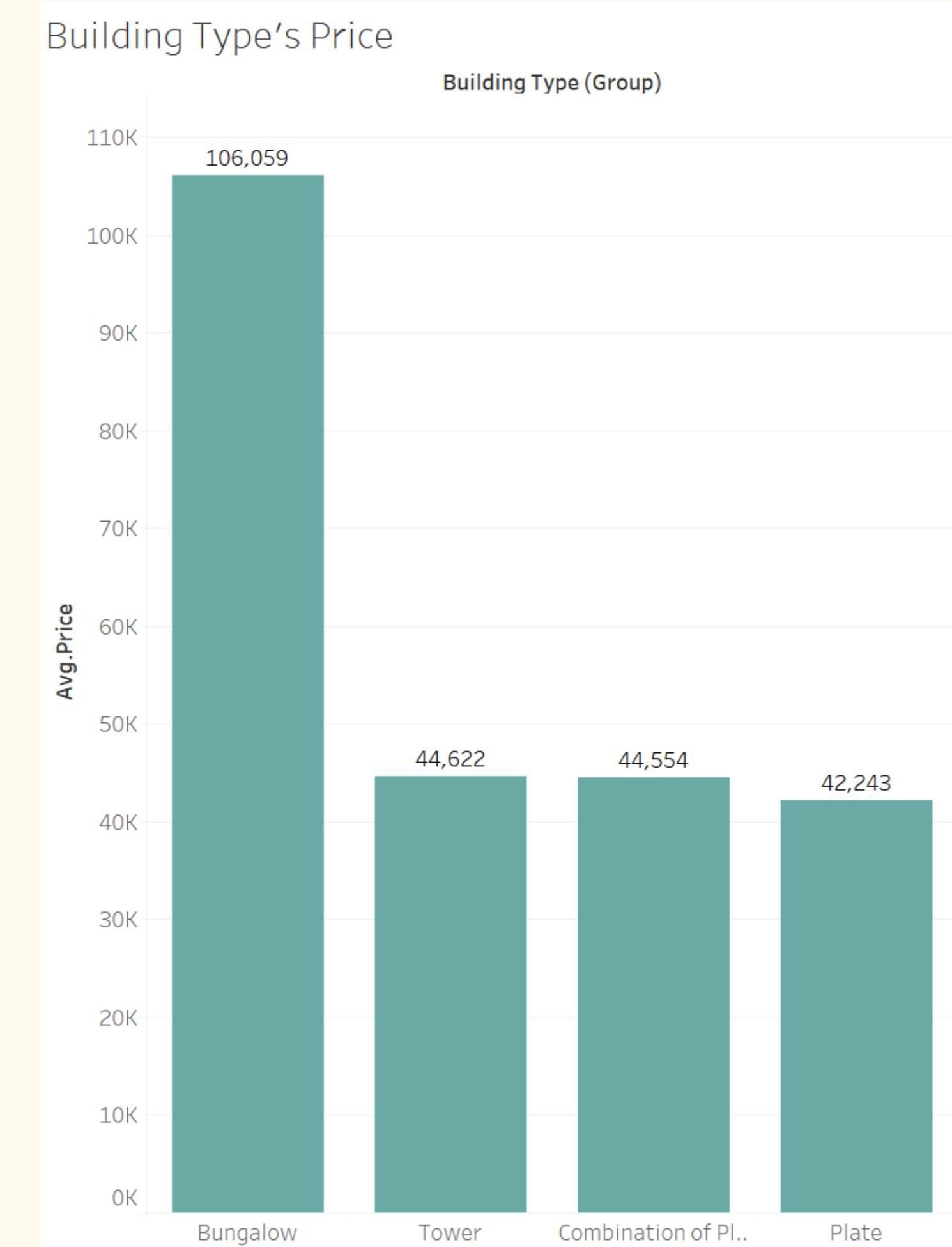
Q1. DOES THE BUILDING TYPE AFFECT PRICING?

Highest Average Price :

Bungalow

Lowest Average Price:

Plate



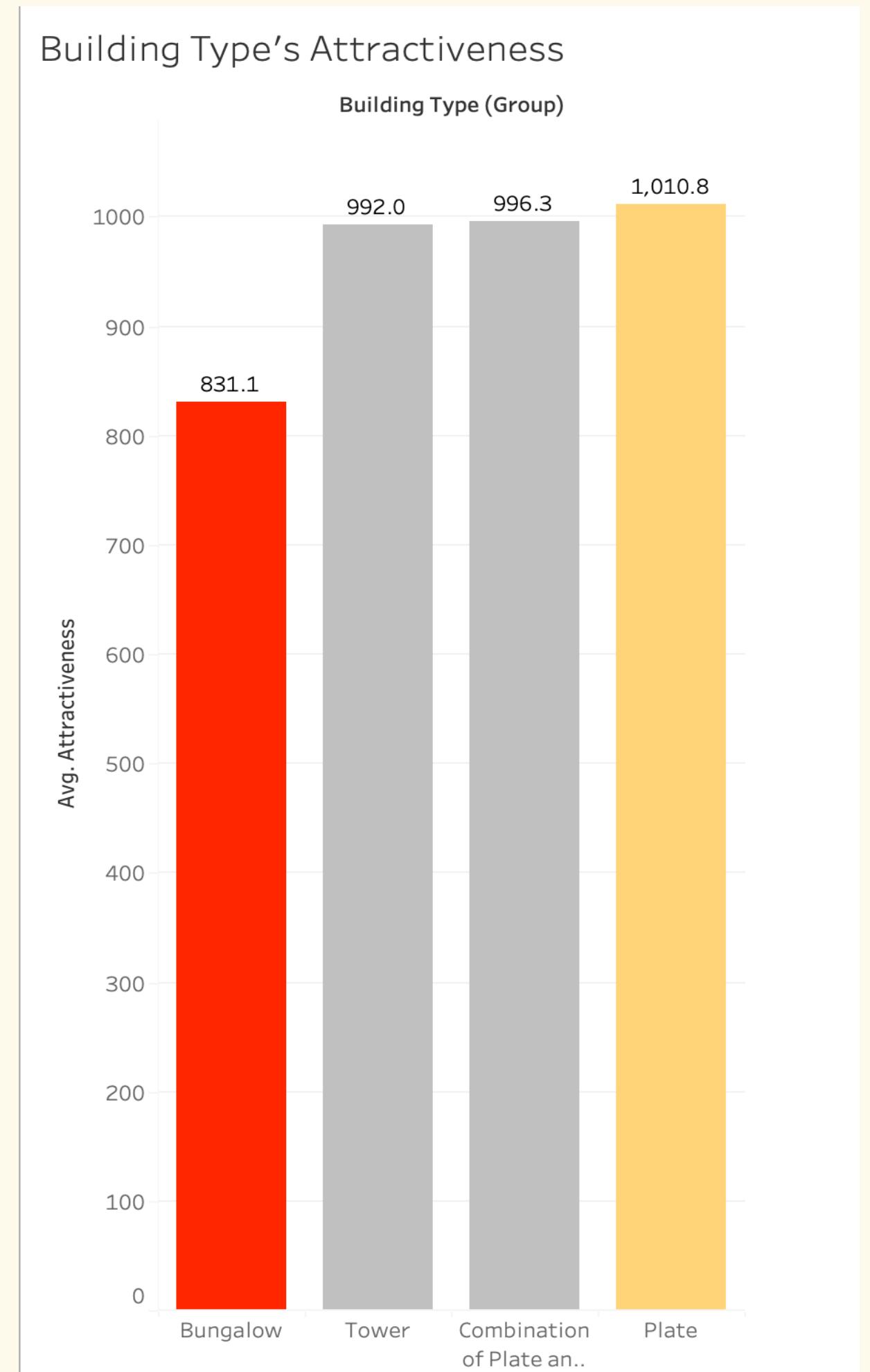
Q1. DOES THE BUILDING TYPE AFFECT ATTRACTIVENESS?

Highest Average Attractiveness :

Plate

Lowest Average Attractiveness:

Bungalow



Q1. TO WHAT EXTENT DOES THE BUILDING TYPE AFFECT ATP RATIO?

Highest Average ATP Ratio :

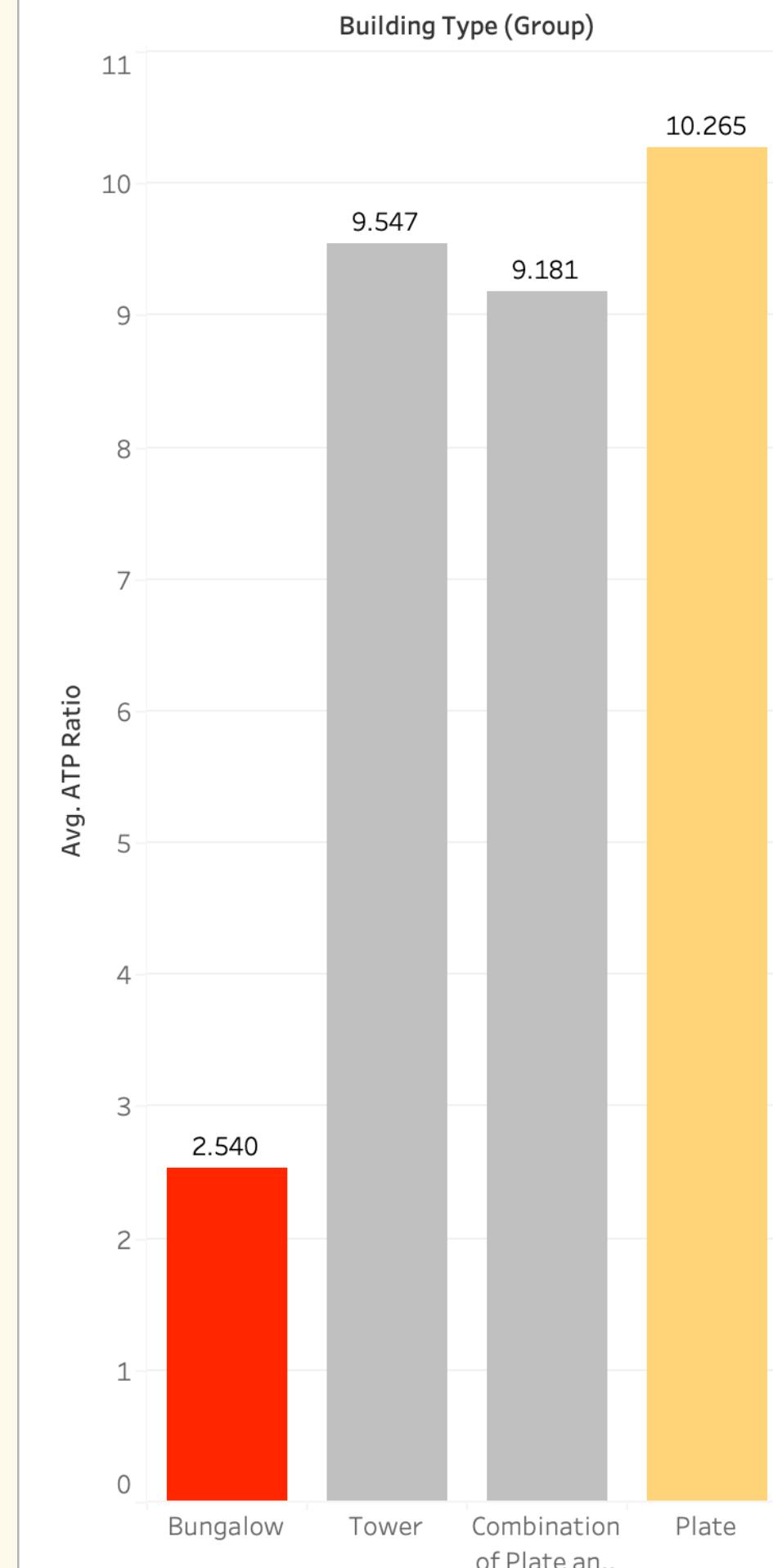
Plate

Lowest Average ATP Ratio:

Bungalow

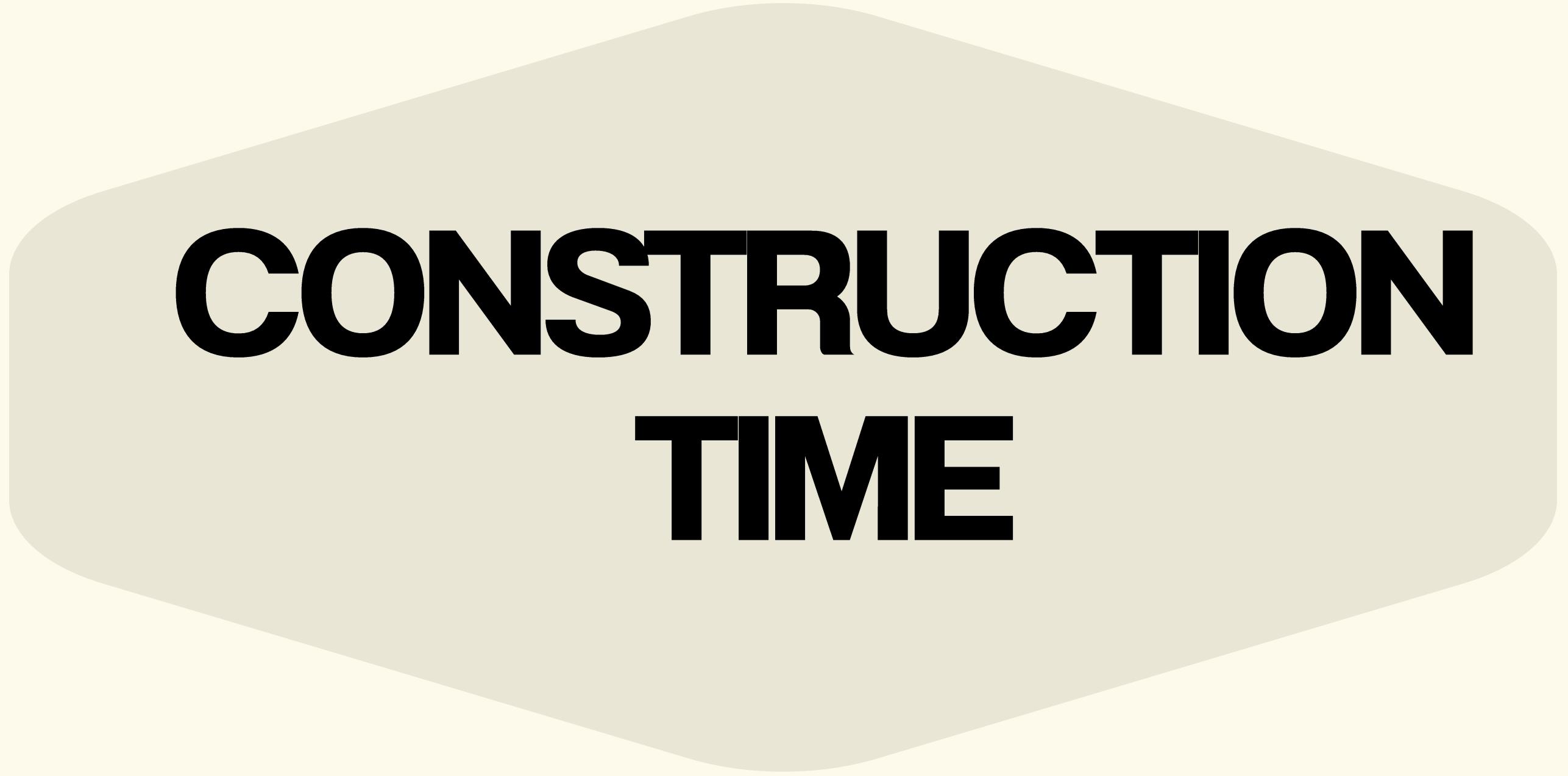
*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT

Avg. ATP Ratio Against Building Type



RECOMMENDATION

**INVEST IN PROPERTY
TYPE OF PLATE
AT CURRENT PRICE POINT**



**CONSTRUCTION
TIME**

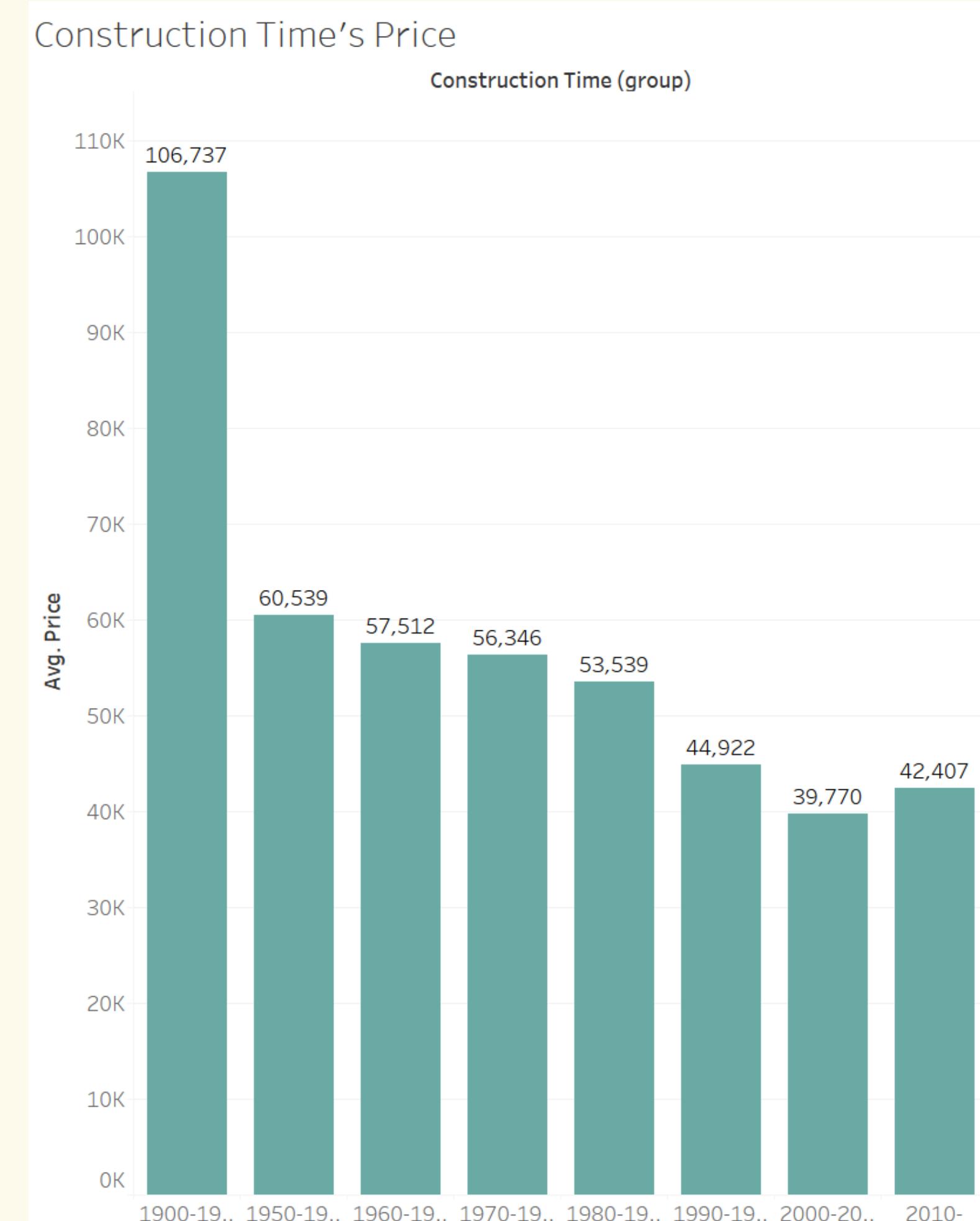
Q2. DOES THE CONSTRUCTION TIME AFFECT PRICING?

Highest Average Price :

1900 - 1949

Lowest Average Price:

2000 - 2009



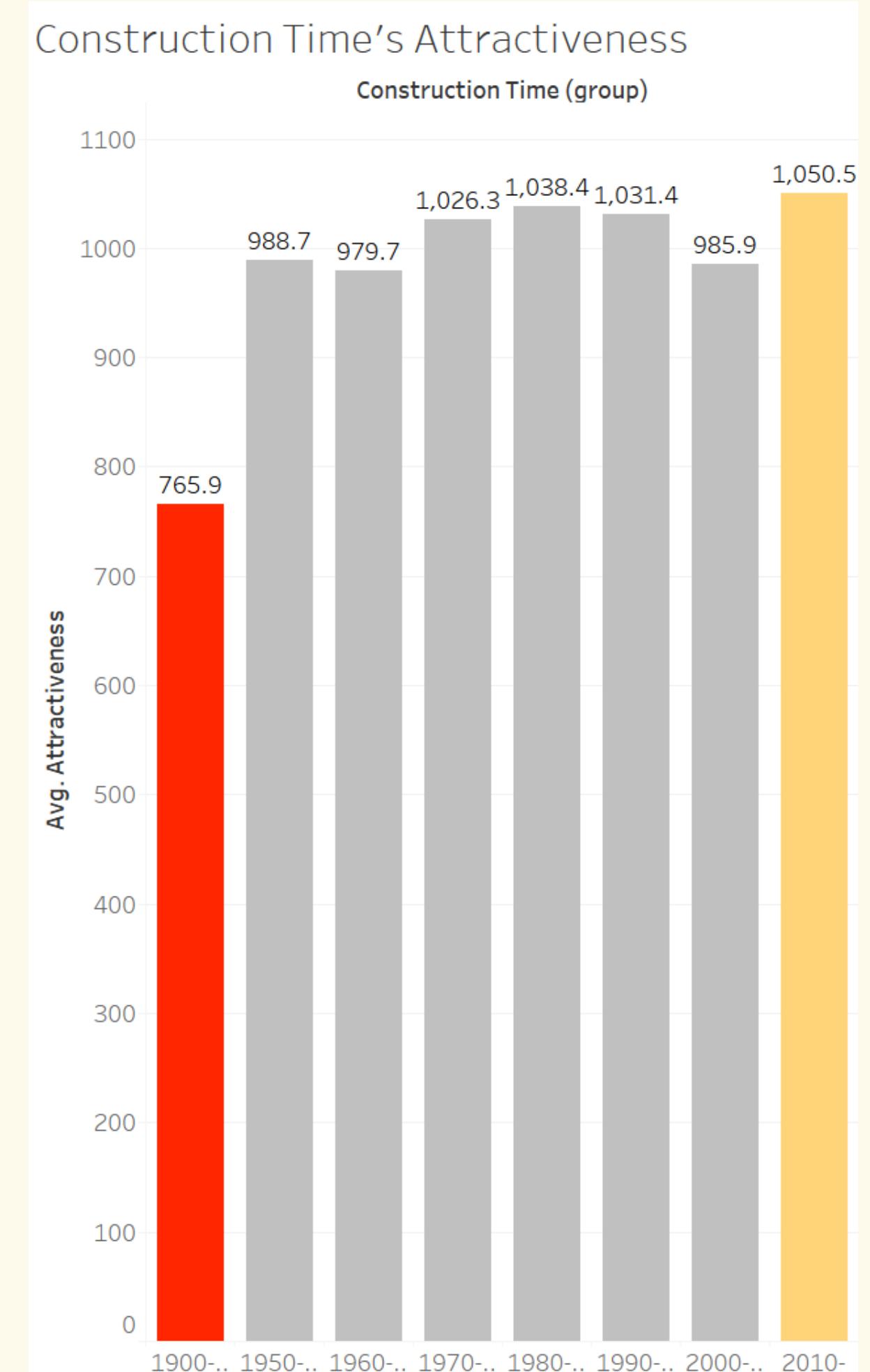
Q2. DOES THE CONSTRUCTION TIME AFFECT ATTRACTIVENESS?

Highest Average Attractiveness :

2010 -

Lowest Average Attractiveness:

1900 - 1949



Q2. TO WHAT EXTENT DOES THE CONSTRUCTION TIME AFFECT ATP RATIO?

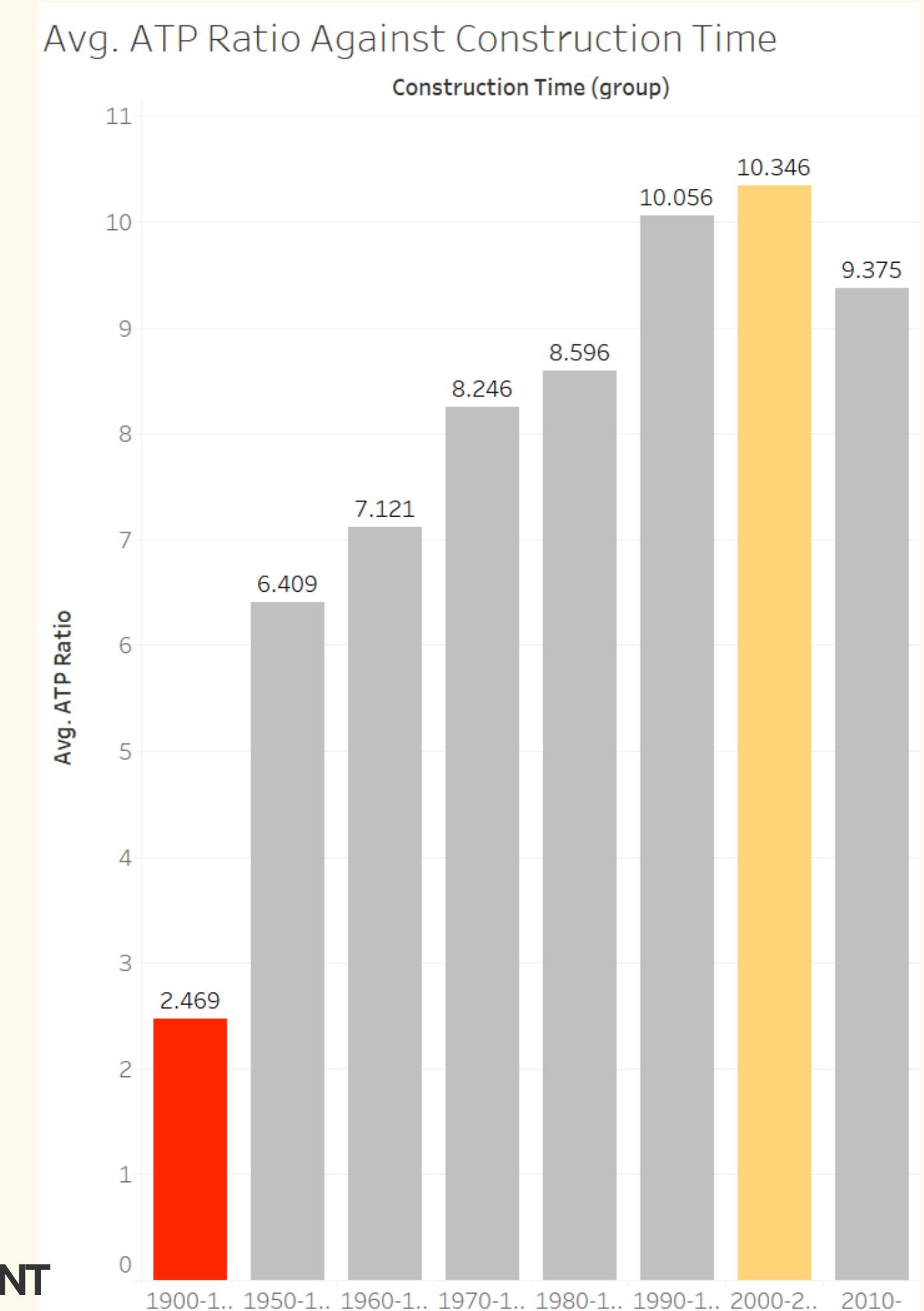
Highest Average ATP Ratio :

2000 - 2009

Lowest Average ATP Ratio:

1900 - 1949

*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT



WHY

Younger Generation prefer
Newer Properties

Modern Amenities
such as gym, swimming pool

While Old Properties have higher historical value, has low supply, it is a very
Niche Market

RECOMMENDATION

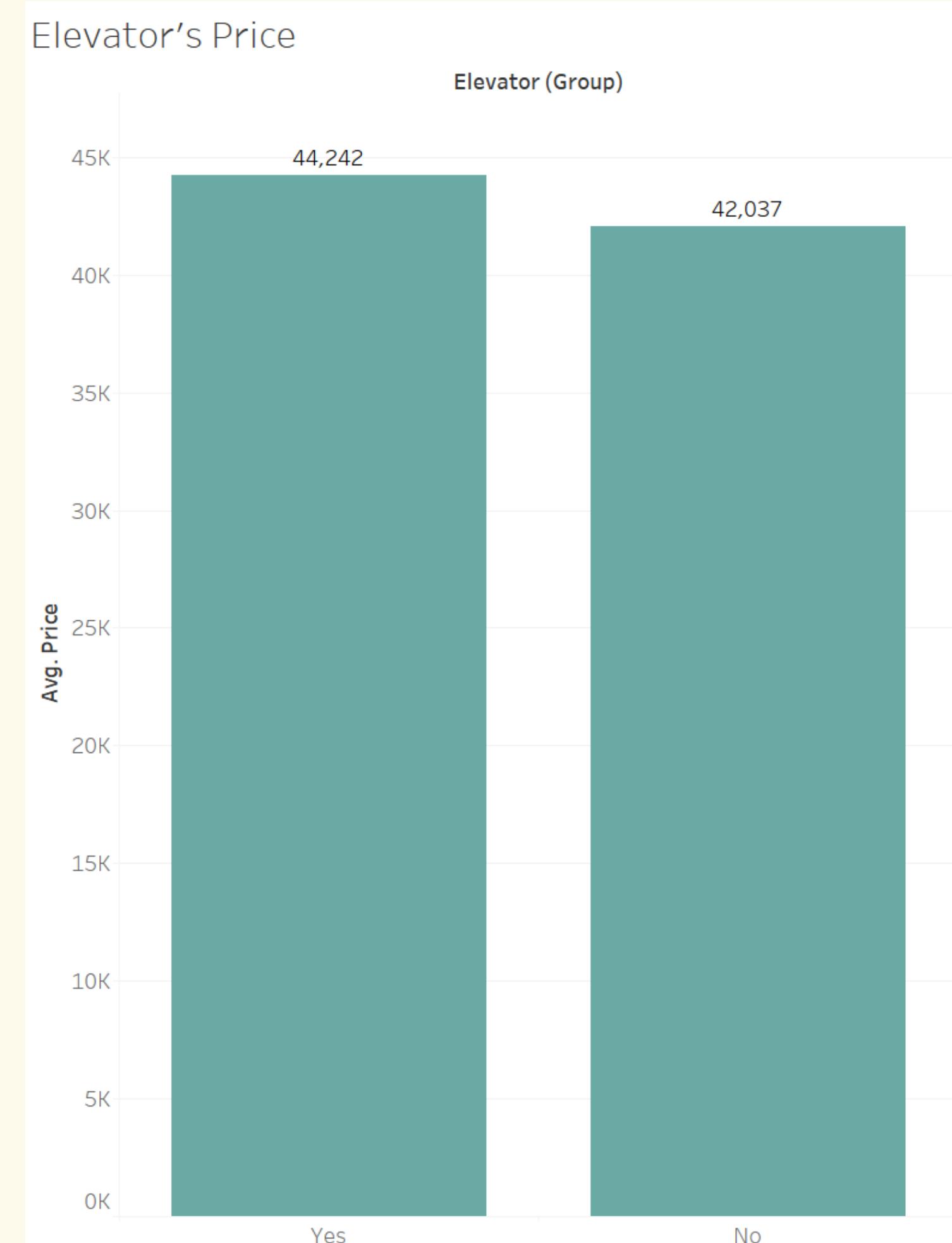
**INVEST IN PROPERTIES THAT HAS BEEN BUILT
BETWEEN 2000-2010
AT CURRENT PRICE POINT**



ELEVATOR

Q3. DOES THE PRESENCE OF ELEVATOR AFFECT PRICING?

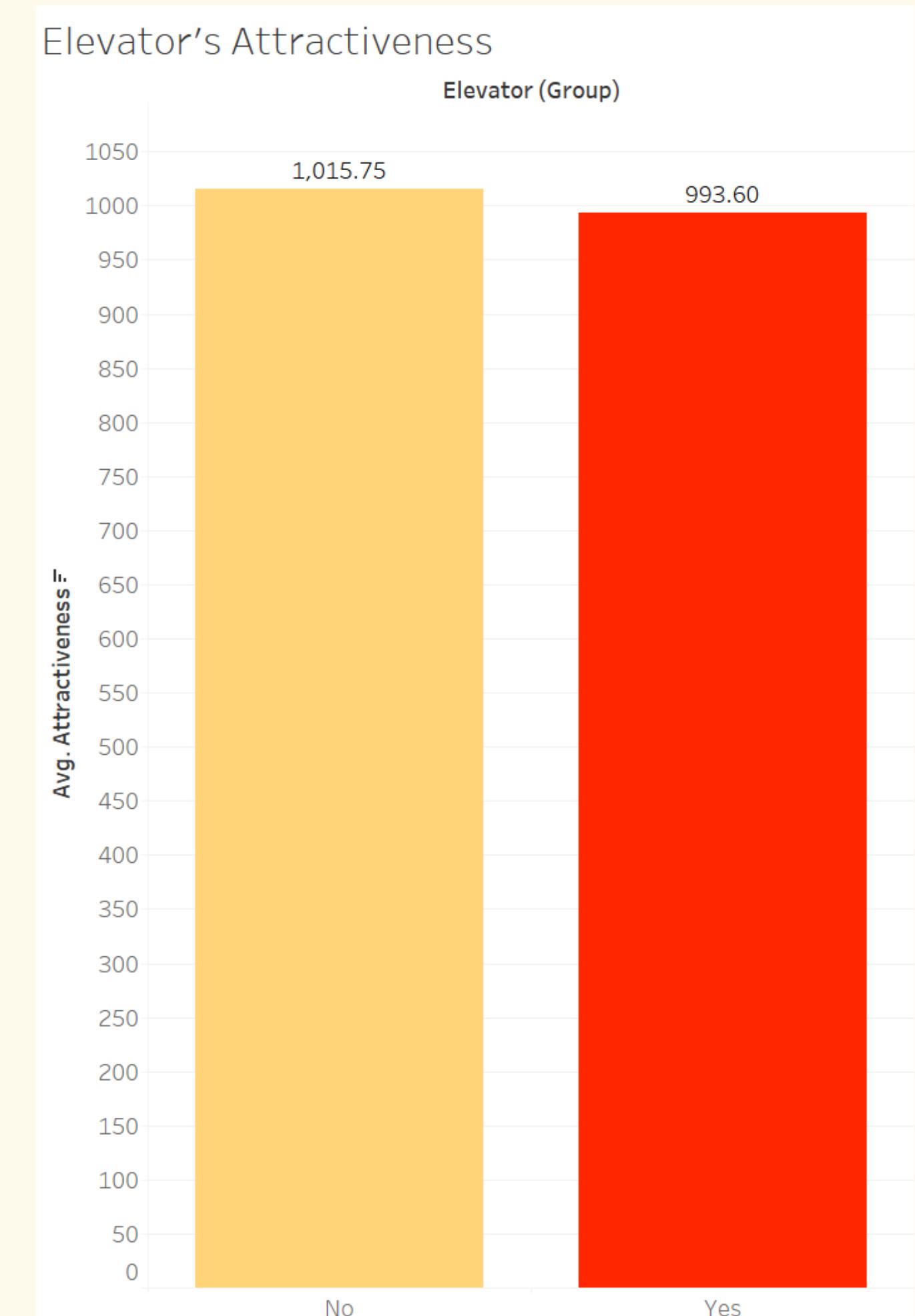
Higher Average Price :
Property with Elevator



Q3. DOES THE PRESENCE OF ELEVATOR AFFECT ATTRACTIVENESS?

Higher Average Attractiveness :

Property without Elevator

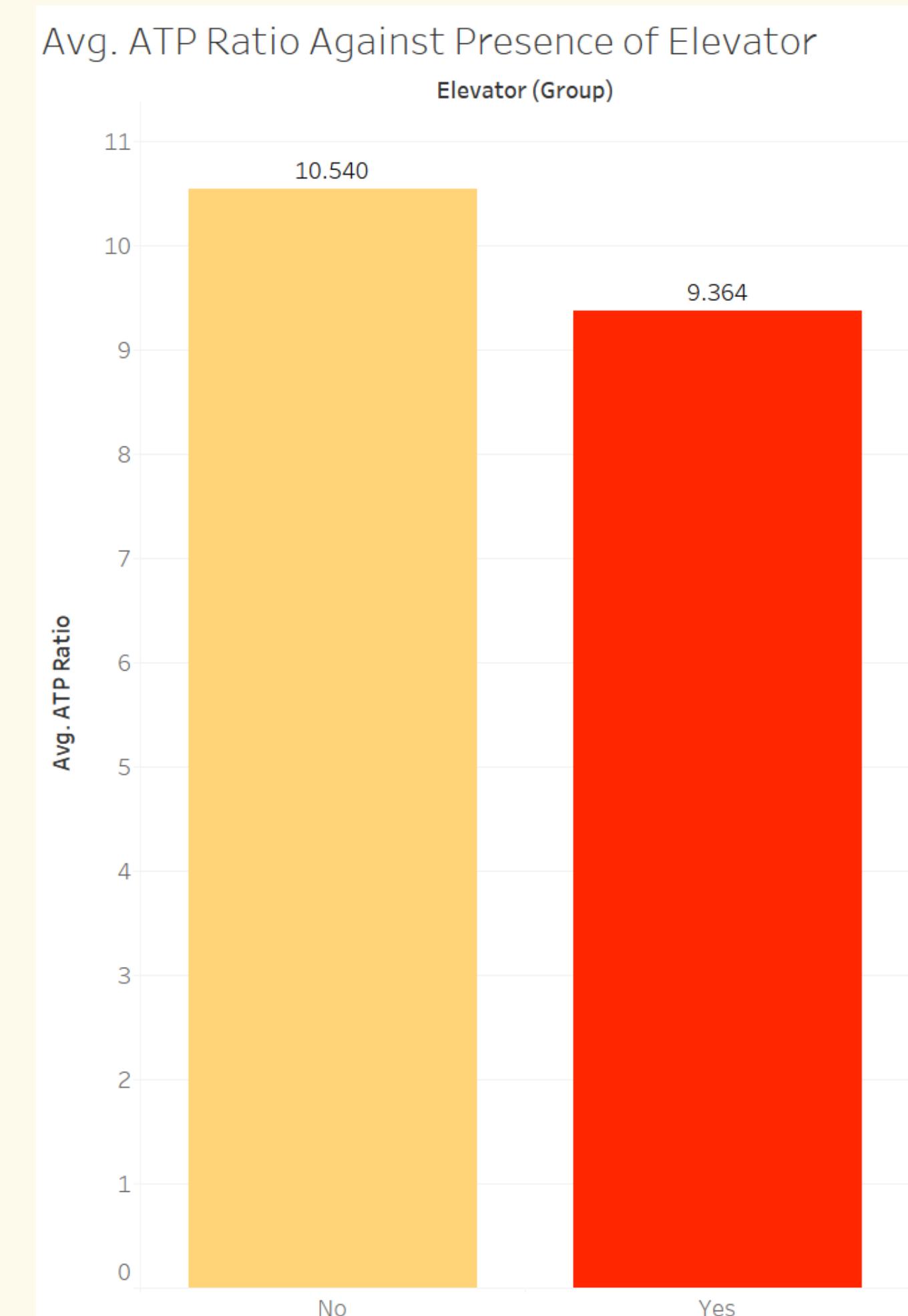


Q3. TO WHAT EXTENT DOES THE PRESENCE OF ELEVATOR AFFECT ATP RATIO?

Higher Average ATP Ratio :

Property without Elevator

*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT



WHY

Attractiveness is Similar
REGARDLESS of elevator

Building Height Limitation
around Central Beijing



RECOMMENDATION

**INVEST IN PROPERTIES
WITHOUT ELEVATOR
AT CURRENT PRICE POINT**

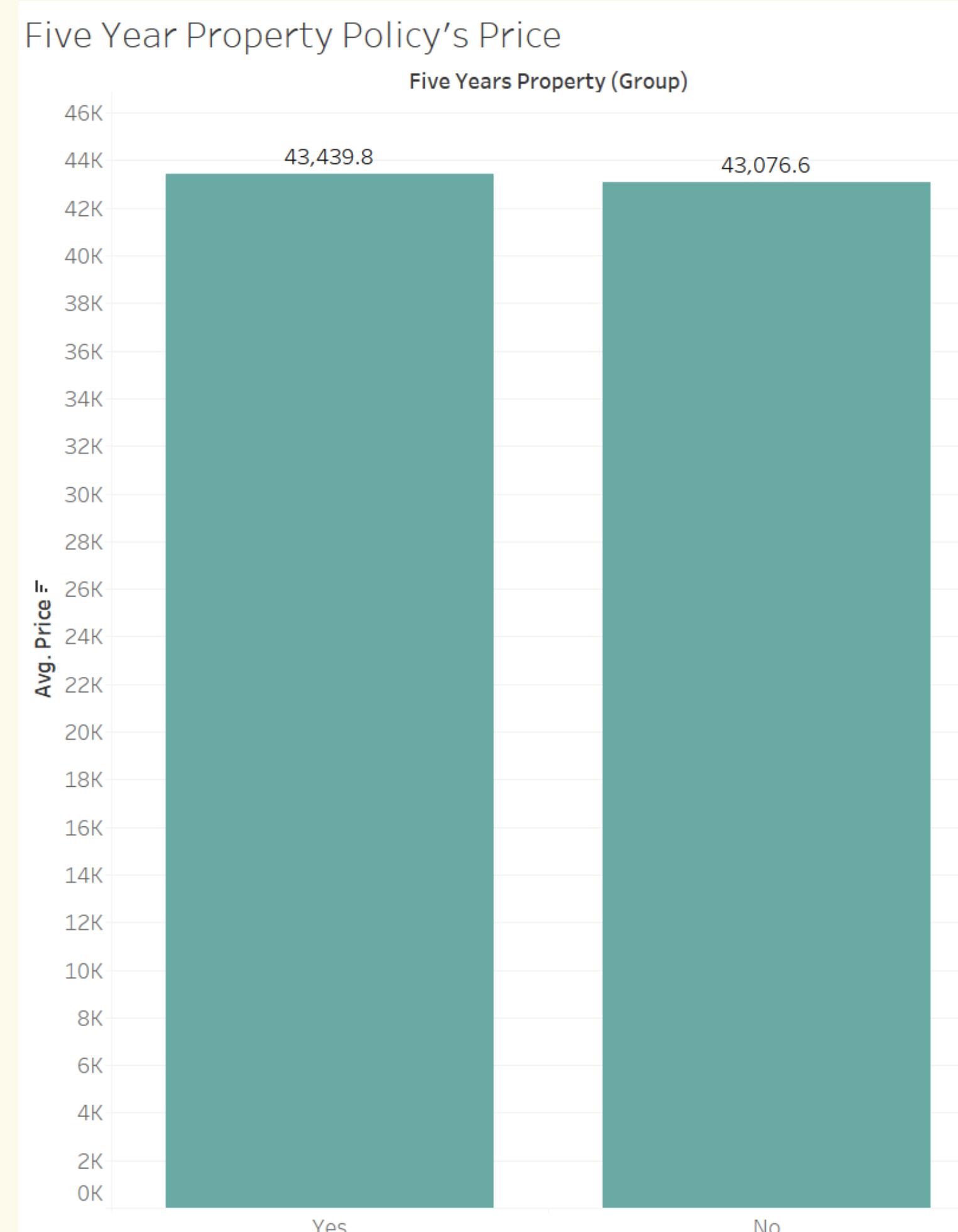


FIVE YEAR PROPERTY

Q4. DOES THE 'FIVE-YEAR PROPERTY' POLICY AFFECT PRICING?

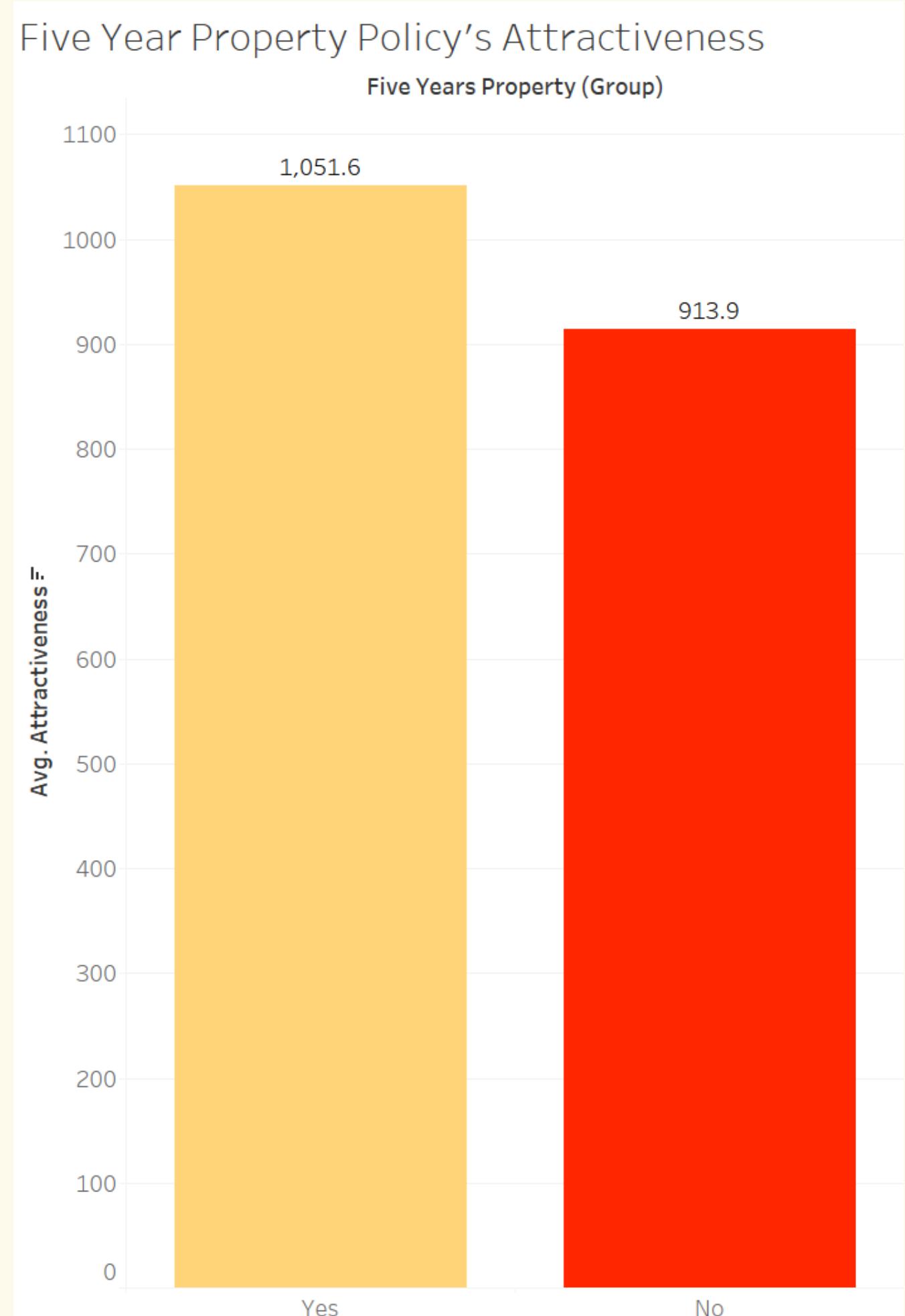
Higher Average Price :

Property with Policy



Q4. DOES THE 'FIVE-YEAR PROPERTY' POLICY AFFECT ATTRACTIVENESS?

Higher Average Attractiveness :
Property with Policy

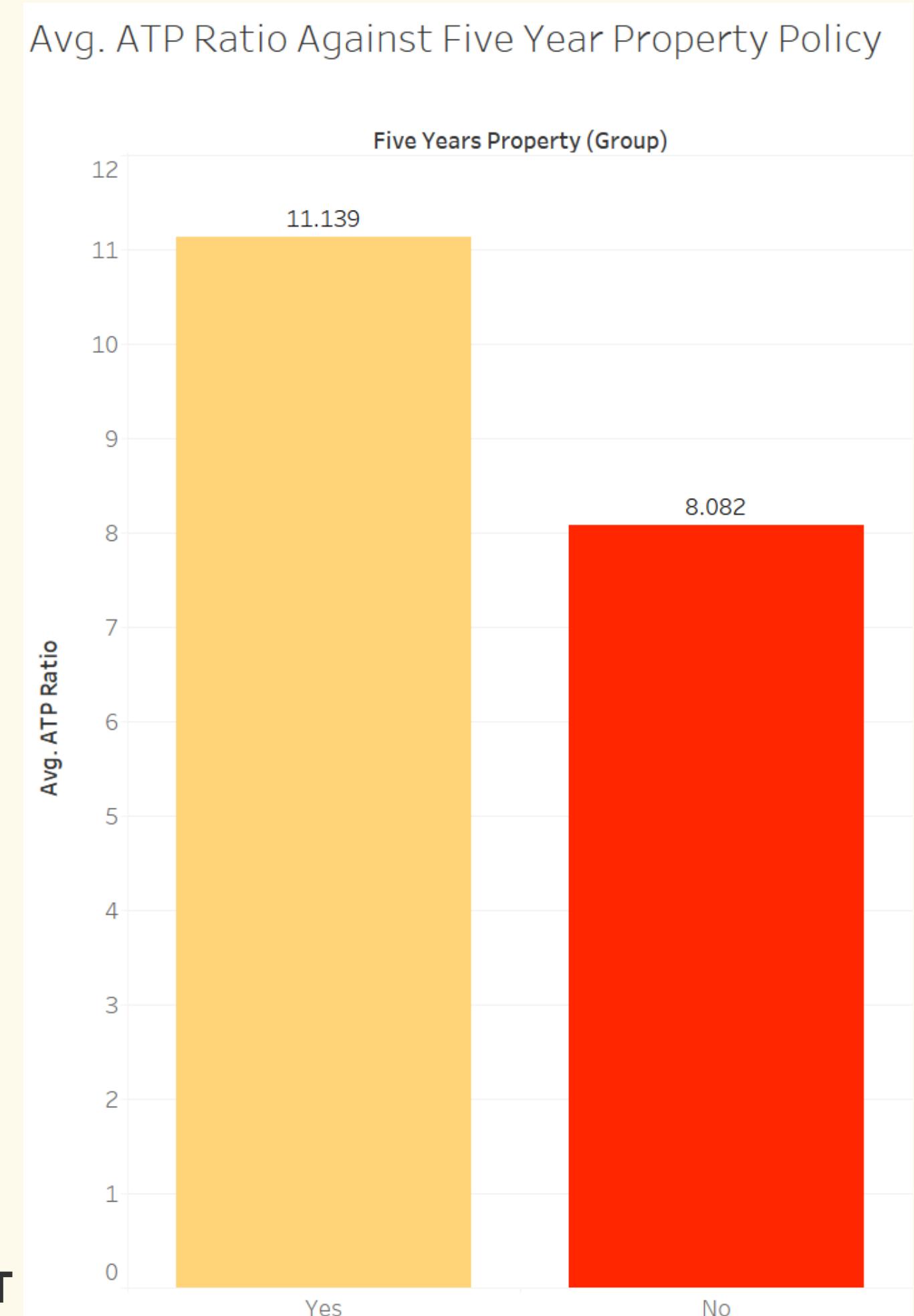


Q4. TO WHAT EXTENT DOES THE 'FIVE YEAR PROPERTY' POLICY AFFECT ATP RATIO?

Higher Average ATP Ratio :

Property with Policy

*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT



WHY

20% of the realized capital gain
can be waived

*a seller who owns more than one house in Beijing or holds the house for less than 5 years needs to pay 20% of the realized capital gain since the previous transaction. <https://cre.mit.edu/wp-content/uploads/2023/03/Zhang-Sisi-Tax-Me-If-You-Can.pdf>

Enhance Resale Value



RECOMMENDATION

**INVEST IN PROPERTIES
WITH FIVE YEAR PROPERTY POLICY
AT CURRENT PRICE POINT**

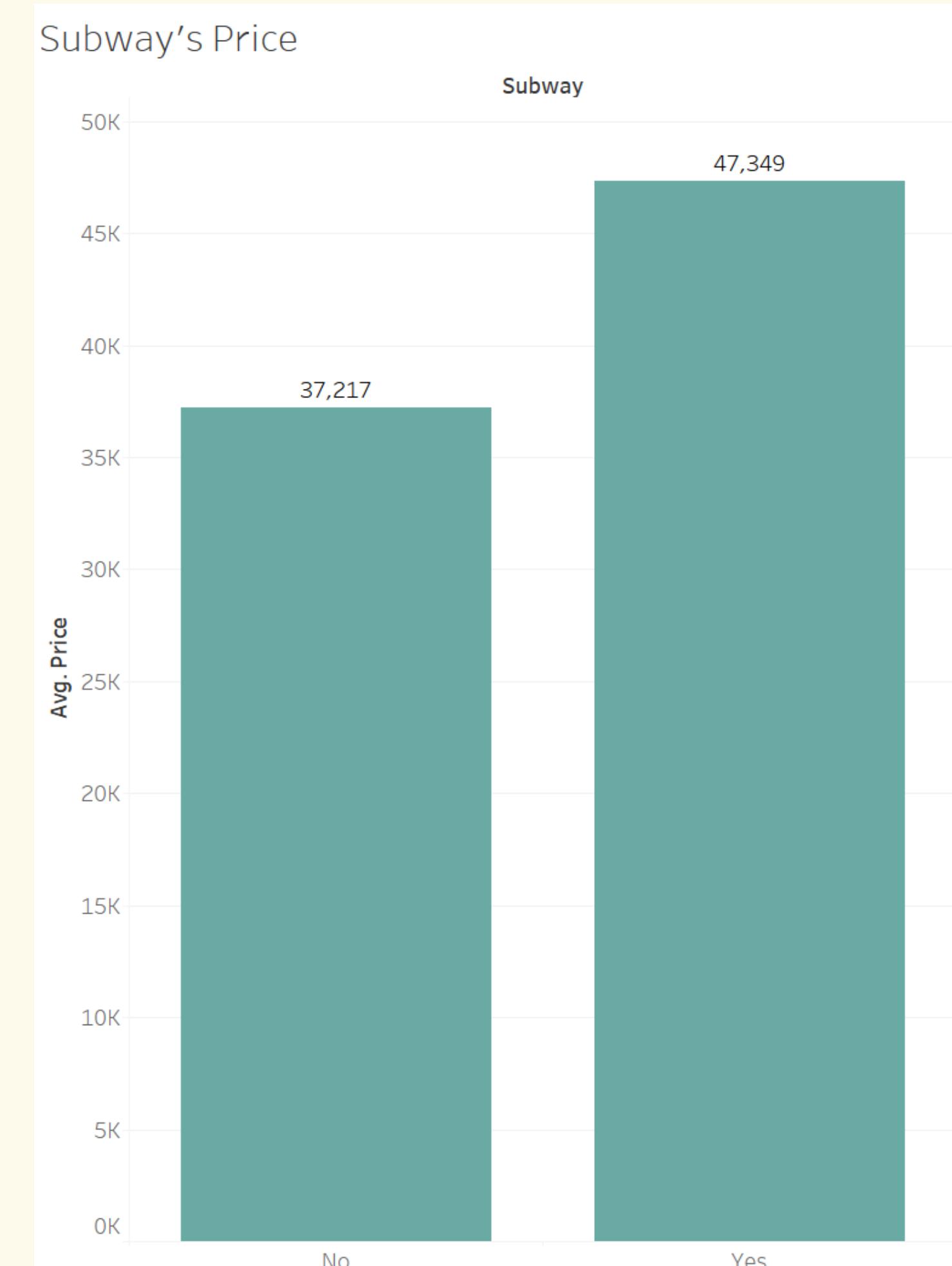


SUBWAY

Q5. DOES THE PROXIMITY TO SUBWAY AFFECT PRICING?

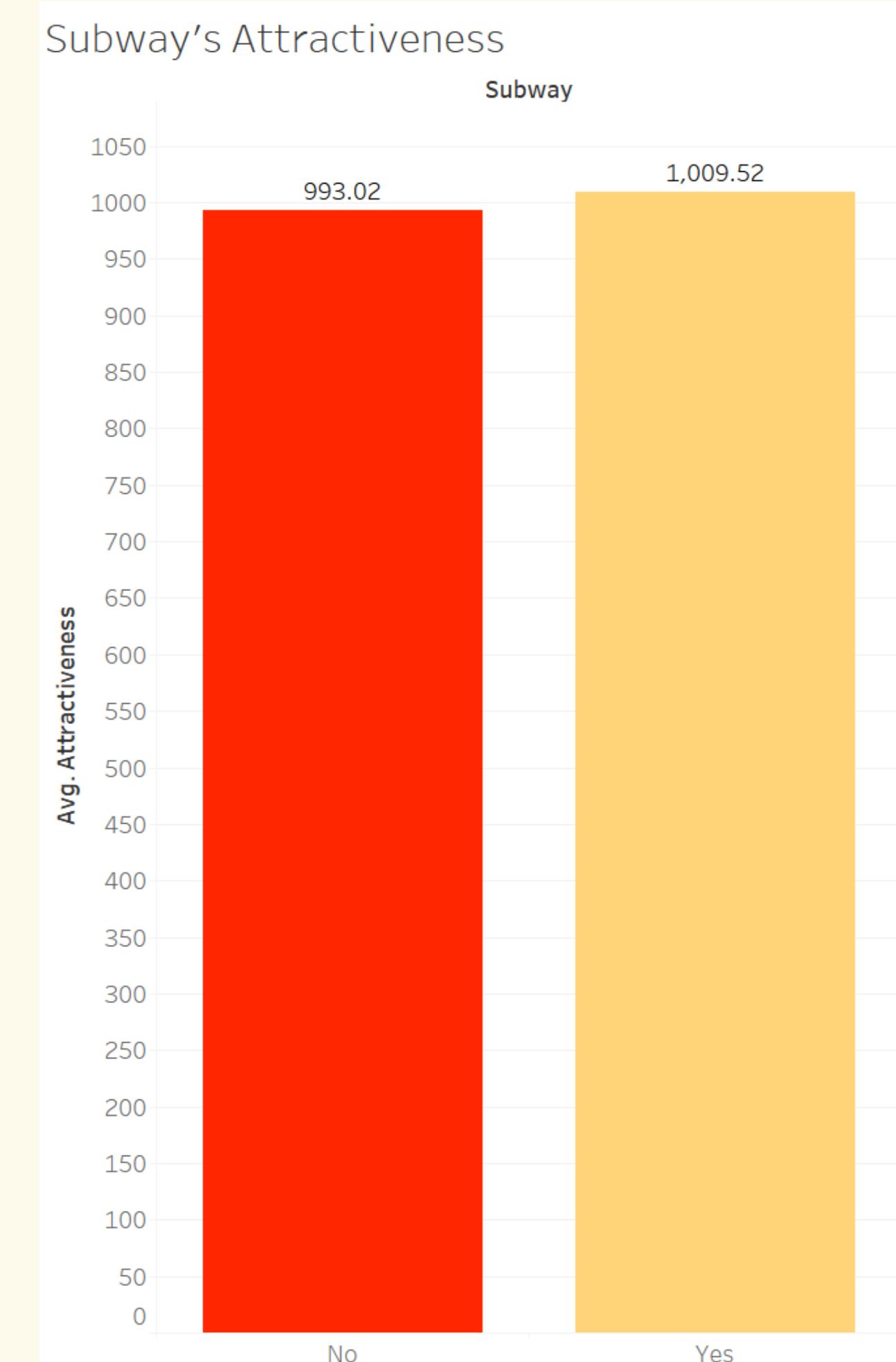
Higher Average Price :

Property with Nearby Subway



Q5. DOES THE PROXIMITY TO SUBWAY AFFECT ATTRACTIVENESS?

Higher Average Attractiveness :
Property with Nearby Subway

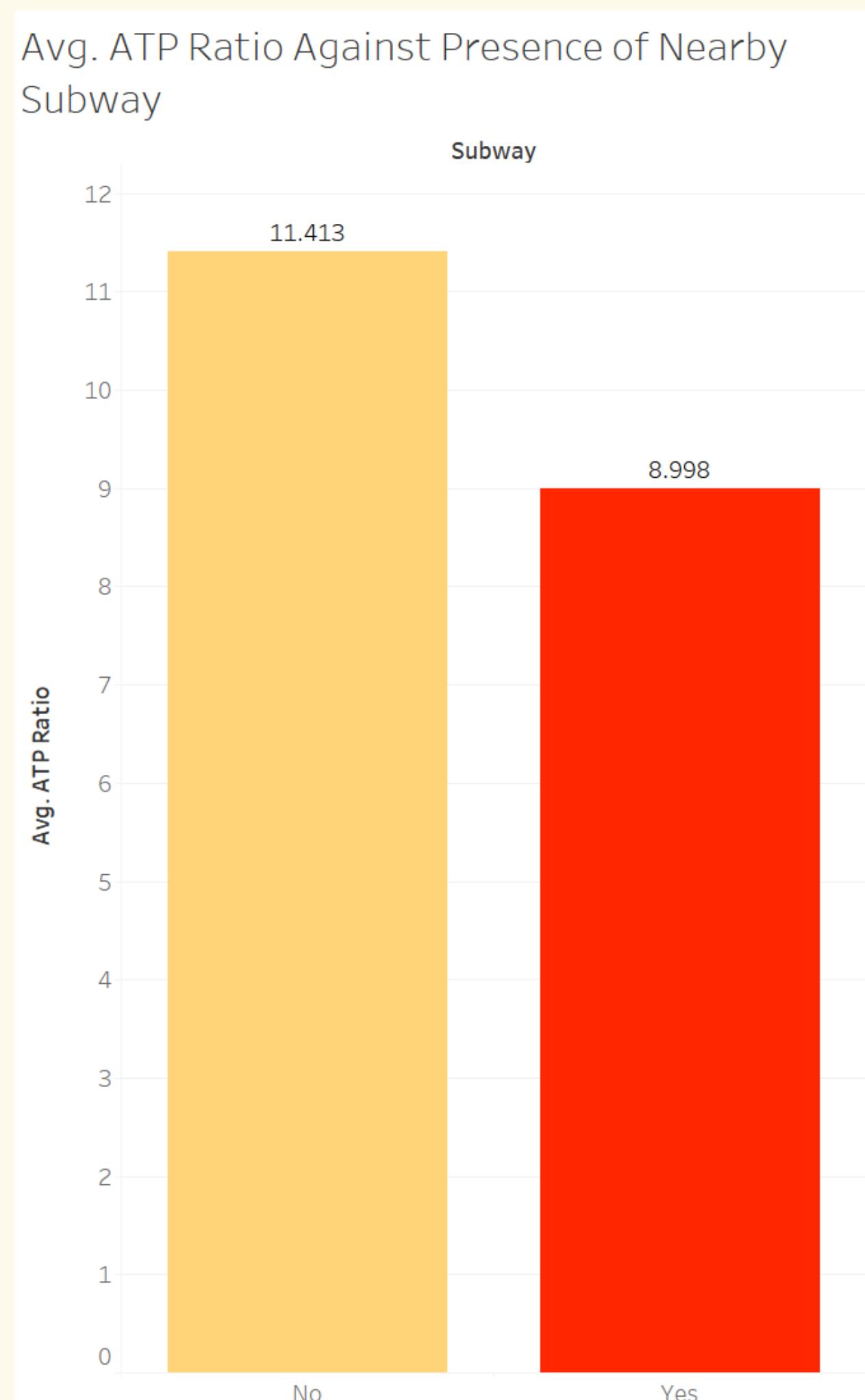


Q5. TO WHAT EXTENT DOES THE PRESENCE OF NEARBY SUBWAY AFFECT ATP RATIO?

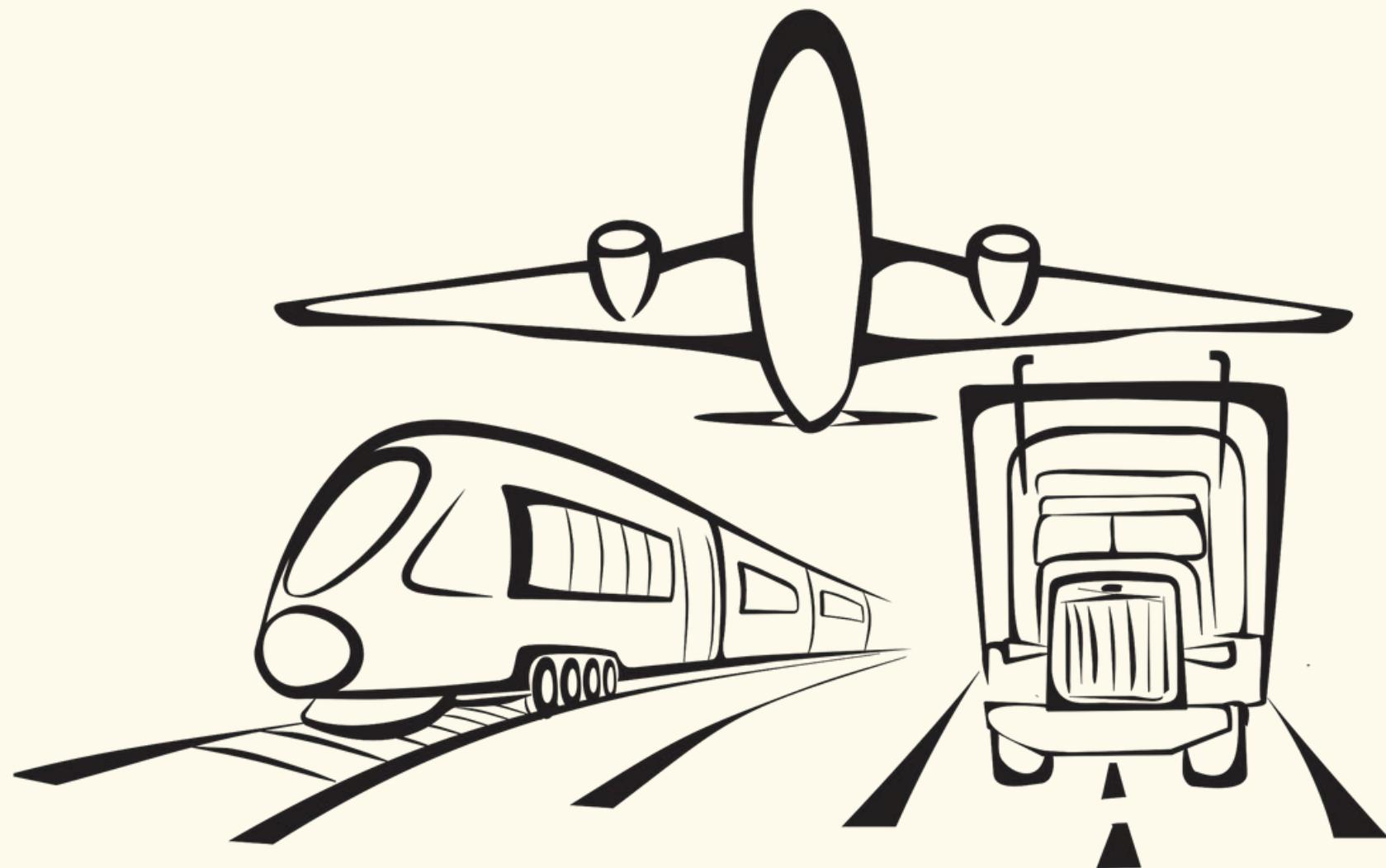
Higher Average ATP Ratio :

Property without Nearby Subway

*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT



WHY



Well-Equipped Bus Service System in Beijing

But people willing to pay premium
for property near subway due to
Convenience while travelling

RECOMMENDATION

**INVEST IN PROPERTIES
WITHOUT NEARBY SUBWAY
AT CURRENT PRICE POINT**

(PROPERTY NEAR SUBWAY ARE OVERPRICED)

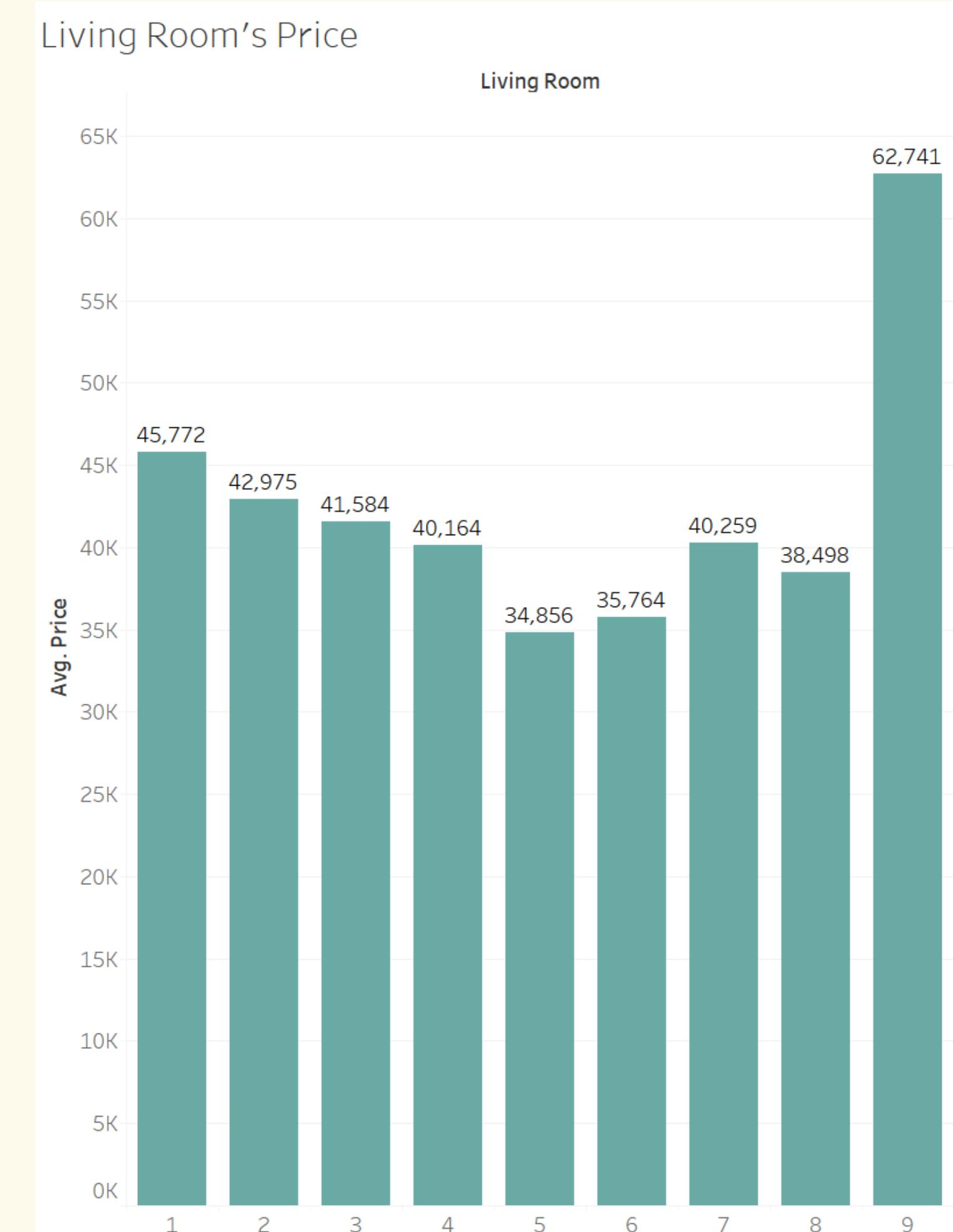


LIVING ROOMS

Q6. DOES THE NUMBER OF LIVING ROOM AFFECT PRICING?

Highest Average Price :
9 Living Rooms

Lowest Average Price:
5 Living Rooms



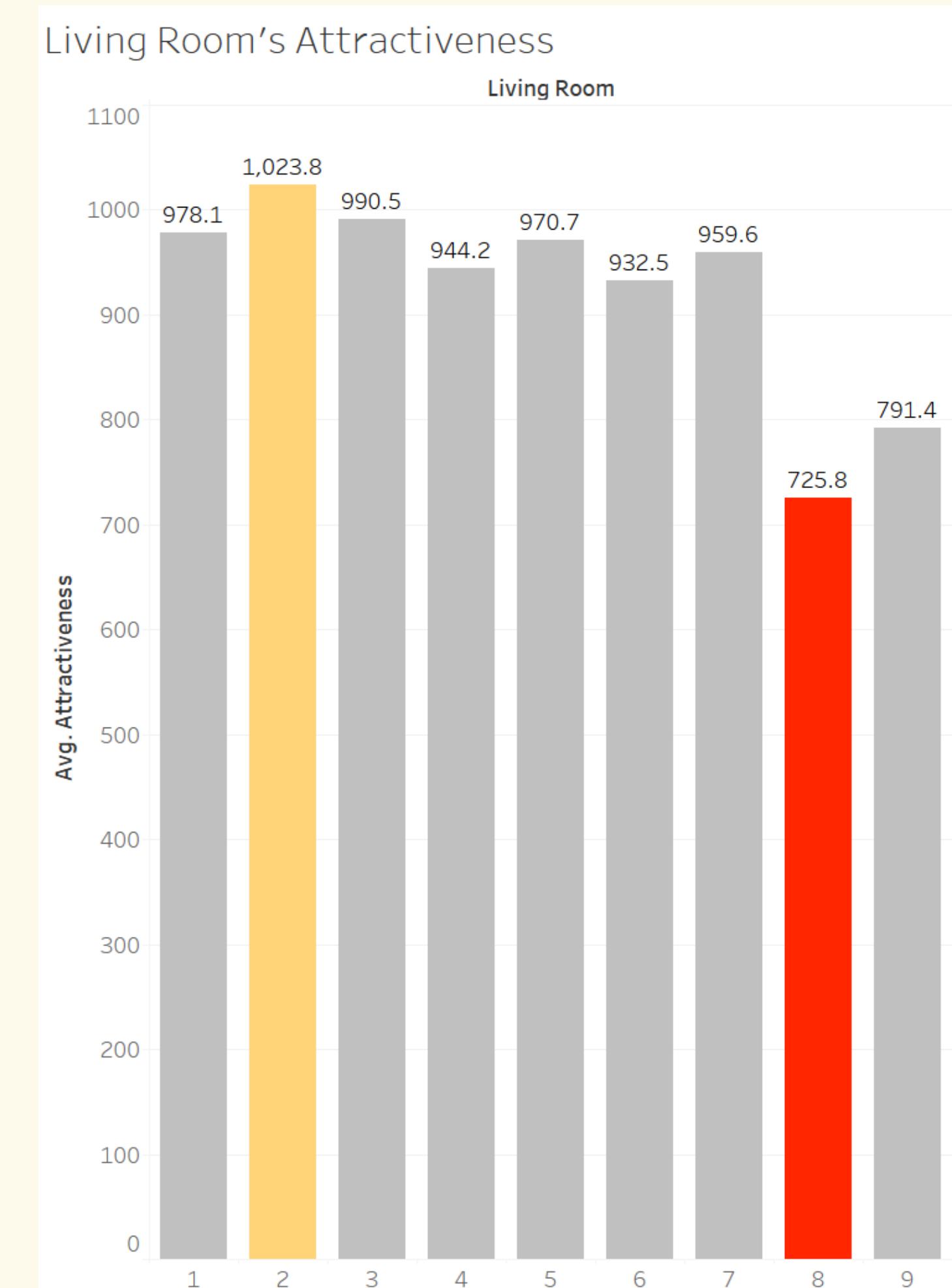
Q6. DOES THE NUMBER OF LIVING ROOM AFFECT ATTRACTIVENESS?

Highest Average Attractiveness :

2 Living Rooms

Lowest Average Attractiveness:

8 Living Rooms



Q6. TO WHAT EXTENT DOES NUMBER OF LIVING ROOMS AFFECT ATP RATIO?

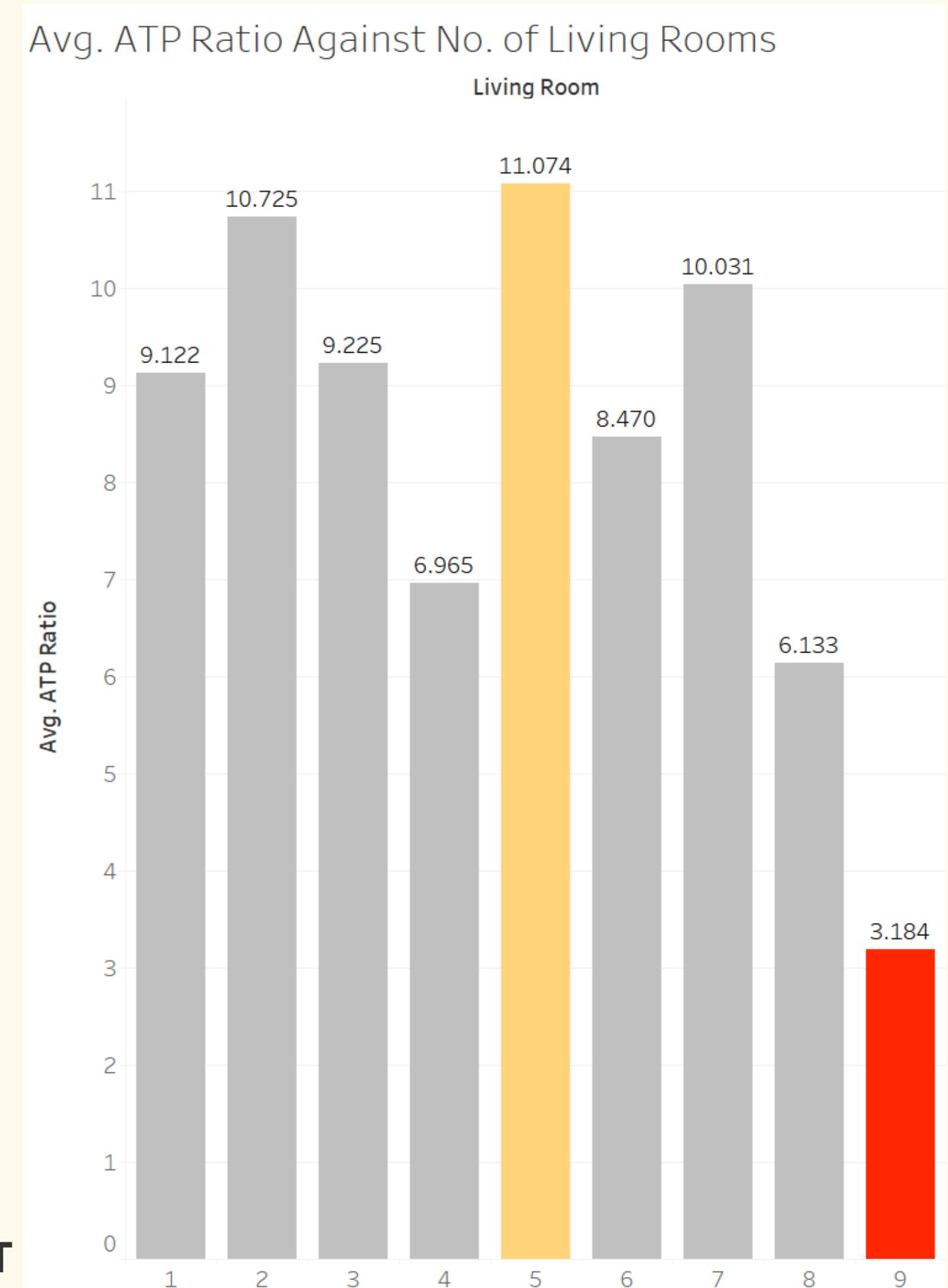
Highest Average ATP Ratio :

5 Living Rooms

Lowest Average ATP Ratio:

9 Living Rooms

*Higher ATP Ratio indicates a better value-for-money at THAT CURRENT PRICE POINT



WHY

Rentability of Rooms

Encouragement from Chinese government for

3-generational Living

Economies of Scale,
Cheaper Price Per Square Metre
as compared to 1-4 rooms



NEWS

China Plans for People to Live Near Their Parents

RECOMMENDATION

**INVEST IN PROPERTIES
WITH 5 LIVING ROOMS
AT CURRENT PRICE POINT**

INVESTMENT RECOMMENDATION

01. Features to look out for

02. Government Policies

03. Economic Conditions

FEATURES

	Highest ATP Ratio (Best)	Lowest ATP Ratio
Building Type	Plate	Bungalow
Construction Time	2000-2009	1900-1949
Presence of Elevator	Without an elevator	With an elevator

*May change according to the market conditions

FEATURES

	Highest ATP Ratio (Best)	Lowest ATP Ratio
'Five-Year Property' Policy	Applied	Not Applied
Proximity to Subway	Without a nearby subway	With a nearby subway
Living Rooms	5	9

*May change according to the market conditions

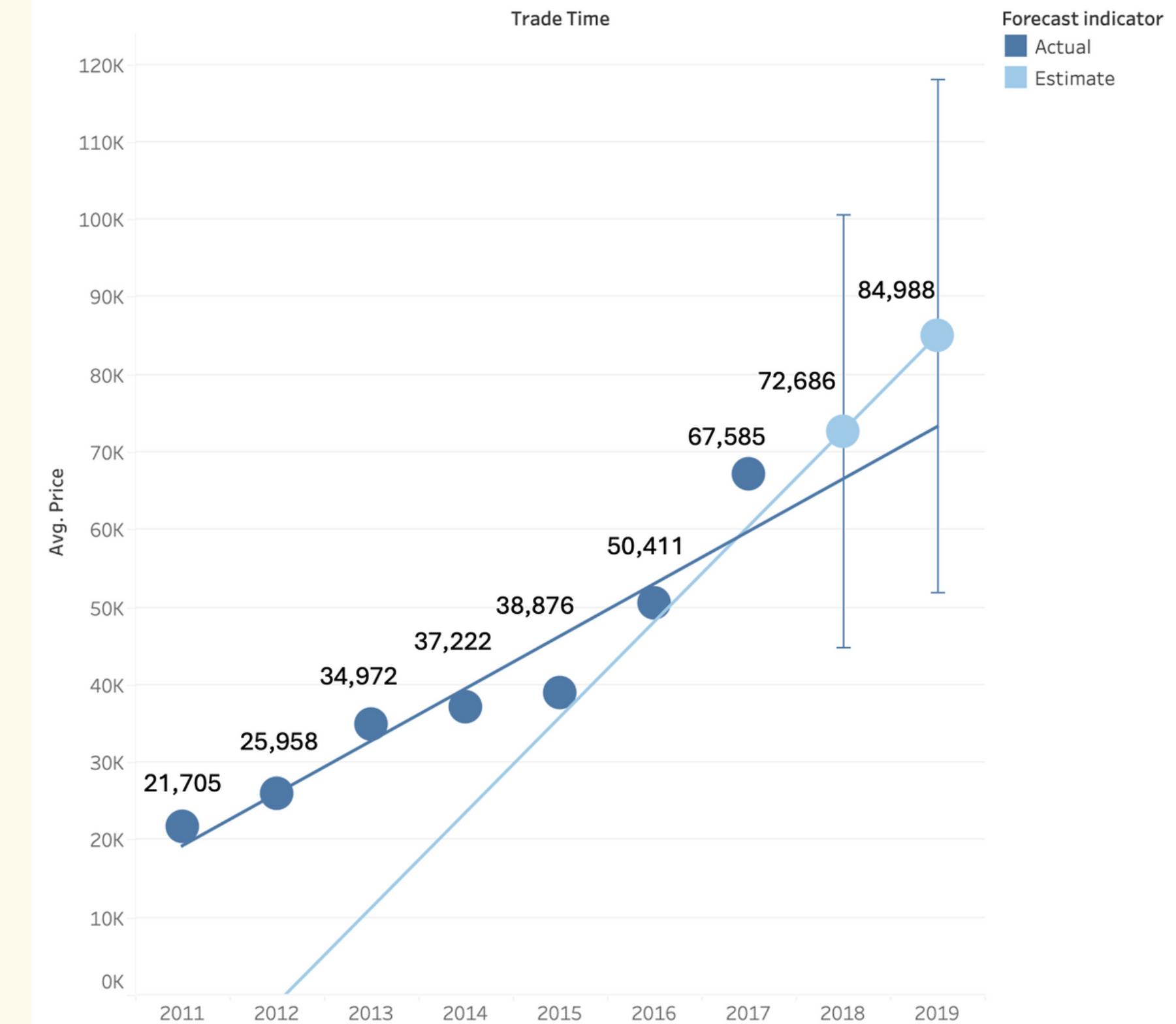
PREDICTED HOUSING PRICES

Prices rising;
expected to continue into 2019
(ceteris paribus)

Expected Average ROI
19.18%

Between 2011 and 2019

2019 Predicted Housing Prices and
Linear Regression Analysis



GOVERNMENT POLICIES

Monitor Government Policies on the Market

**Interest
Rate
Policies**

**Tax
Enforcement**

**Stimulus
Packages**

ECONOMIC CONDITIONS

The property price is influenced by the change of economic conditions

**Economic
Growth of the
Country(GDP)**

**Global
Economic
Situation
(e.g) inflation/
exchange rate**

**Stimulus
Packages
(e.g)
Government
payment**

OUR STRATEGY

OUR STRATEGY

Resell & Leasing

**Resell after price of property has increased above
company's benchmark**

Meanwhile, can lease out the property & receive rent

THANK YOU