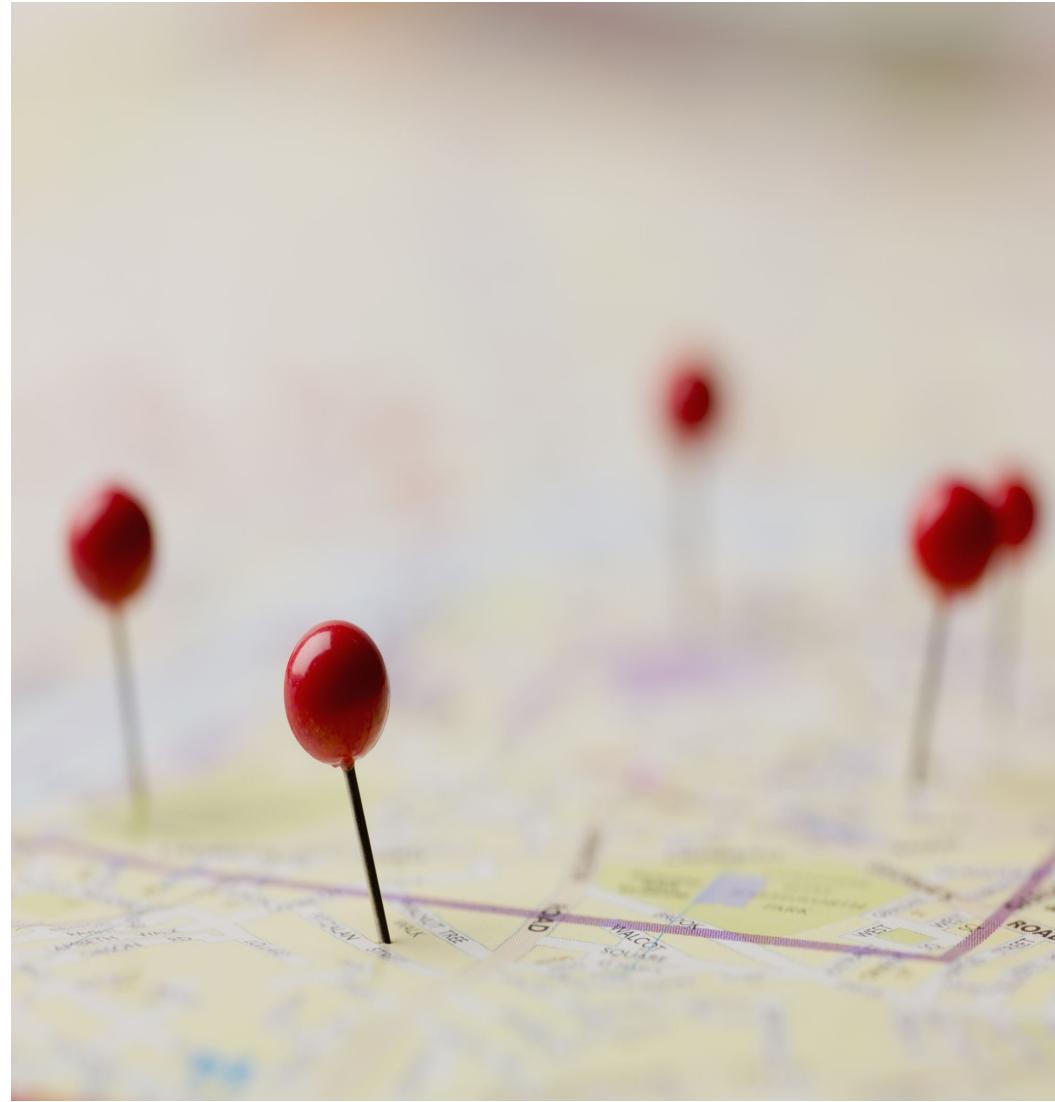




What drives
Melbourne
Property
sales?

G4 INVESTIGATES...



Are you trying to crack the code?

In a red-hot property market what drives sales?

- ❖ Location, location, location?
- ❖ How does distance and size matter?
- ❖ Is age just a number?
- ❖ Or is it better to prioritize the lifestyle factors?

Goals and purpose

Gain comprehensive insights into the Melbourne property market

Explore often overlooked factors.

- These include access to public transport, proximity to shopping, amenities such as healthcare, sport venues, cultural attractions, and open parklands.

We aim to;

- identify patterns and trends in the Melbourne property market
- understand the drivers of property prices
- provide actionable insights for buyers, sellers, and investors.

Analysis Breakdown

1. How has the Melbourne property market evolved over time?

1. Analysing the overall trends and patterns observed in the data set.

2. What is the impact of location?

1. Analysing the impact of suburb, region, and distance to CBD on Melbourne property prices.

3. Does the size of the property matter?

1. Investigating the relationship between property size and sale price in the Melbourne real estate market.

4. Is age just a number?

1. Analysing the effect of building age on property prices in Melbourne, seeing if there is a correlation to price across all suburbs.

5. Do lifestyle factors influence decision making?

1. An analysis of the impact of proximity to public transport, shopping, healthcare, cultural attractions and open parklands has on property prices in Melbourne and what the correlation is of these factors.



Key question 1

How has the Melbourne property market evolved over time?

- Analysing overall trends and patterns observed in the given dataset.

Data overview



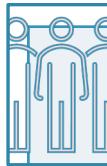
Total Sales

\$19,439,006,491



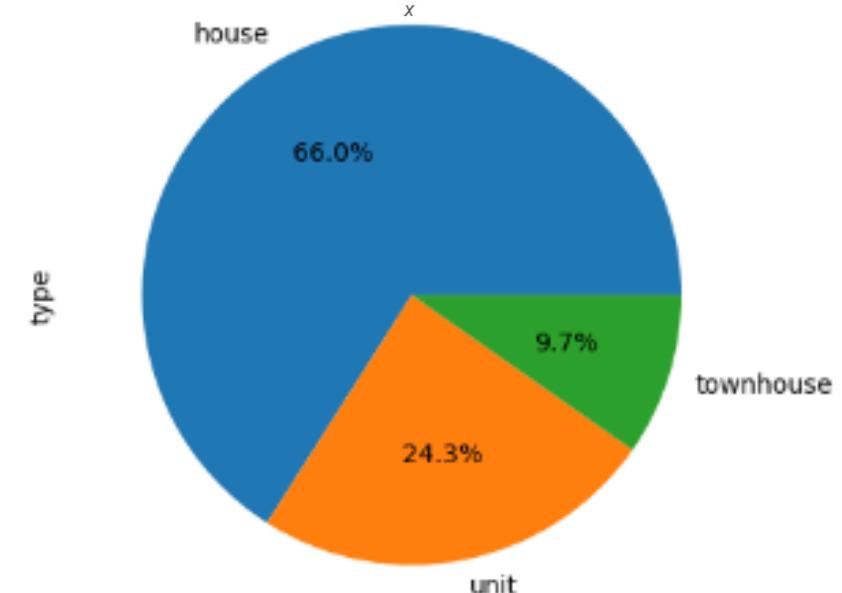
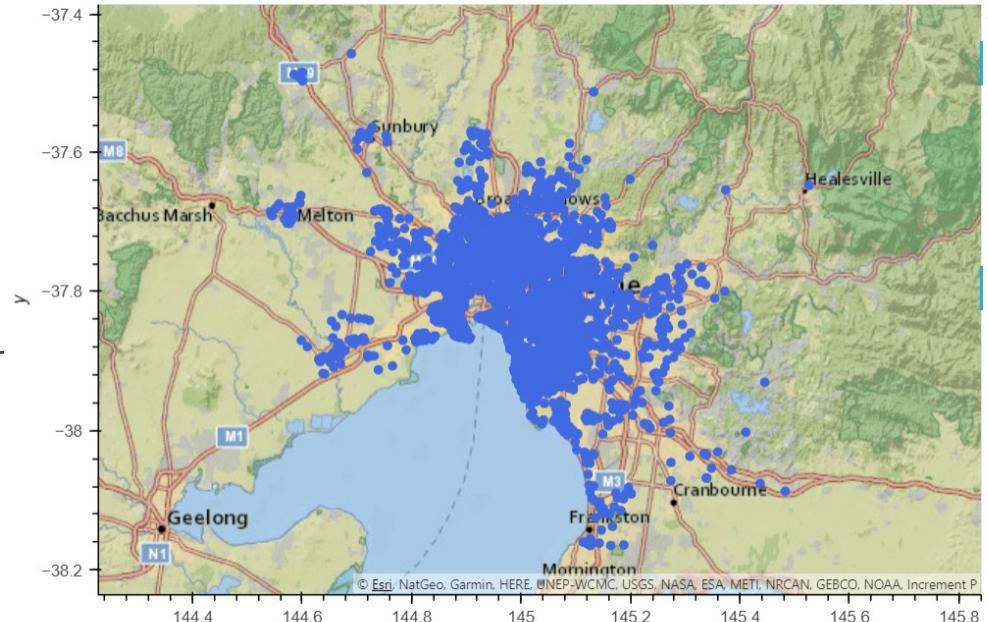
Average Sale

\$1,056,697

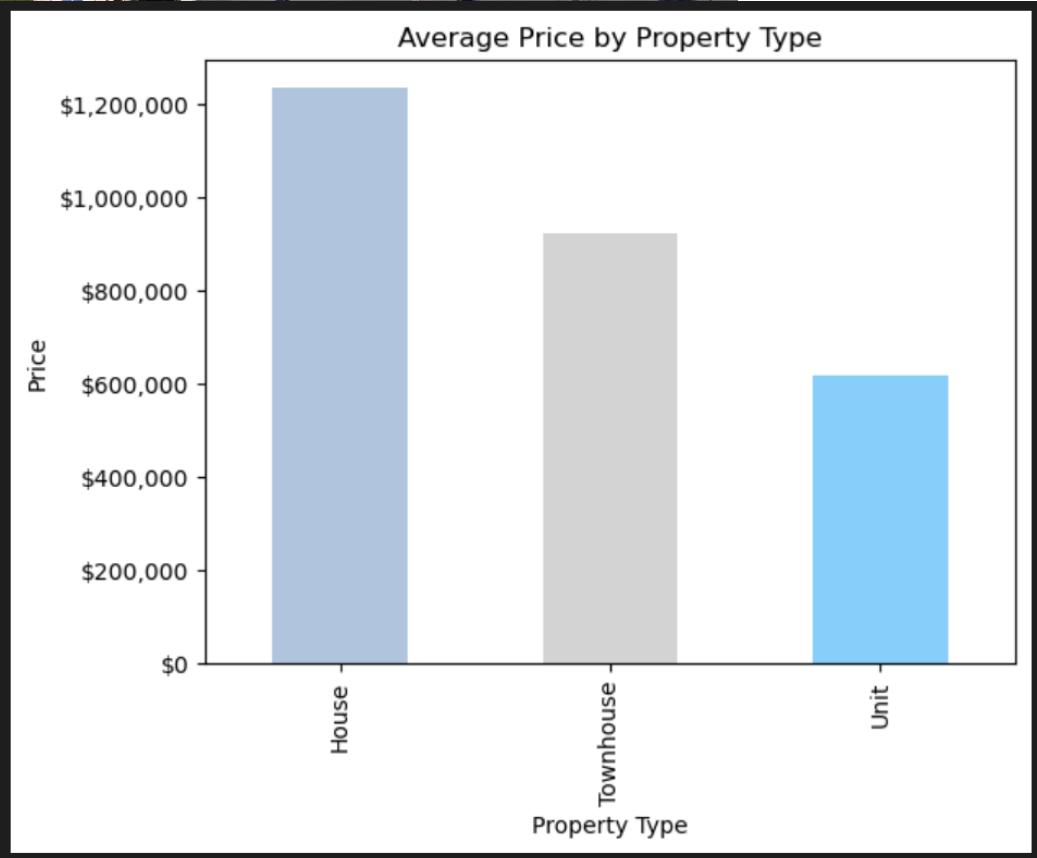


Average Price by
property type

House \$1,273,016
Townhouse \$884,182
Unit \$588,375



The average property is...



- 🏡 3 bedroom
- 🏡 1 bathroom
- 🏡 1 car
- 🏡 House in Reservoir
- 🏡 sold by Nelson
- 🏡 on 500 sqm of land
- 🏡 bought for over a million dollars.

By region

Eastern Metropolitan \$1,110,341

Eastern Victoria \$669,999

Northern Metropolitan \$872,263

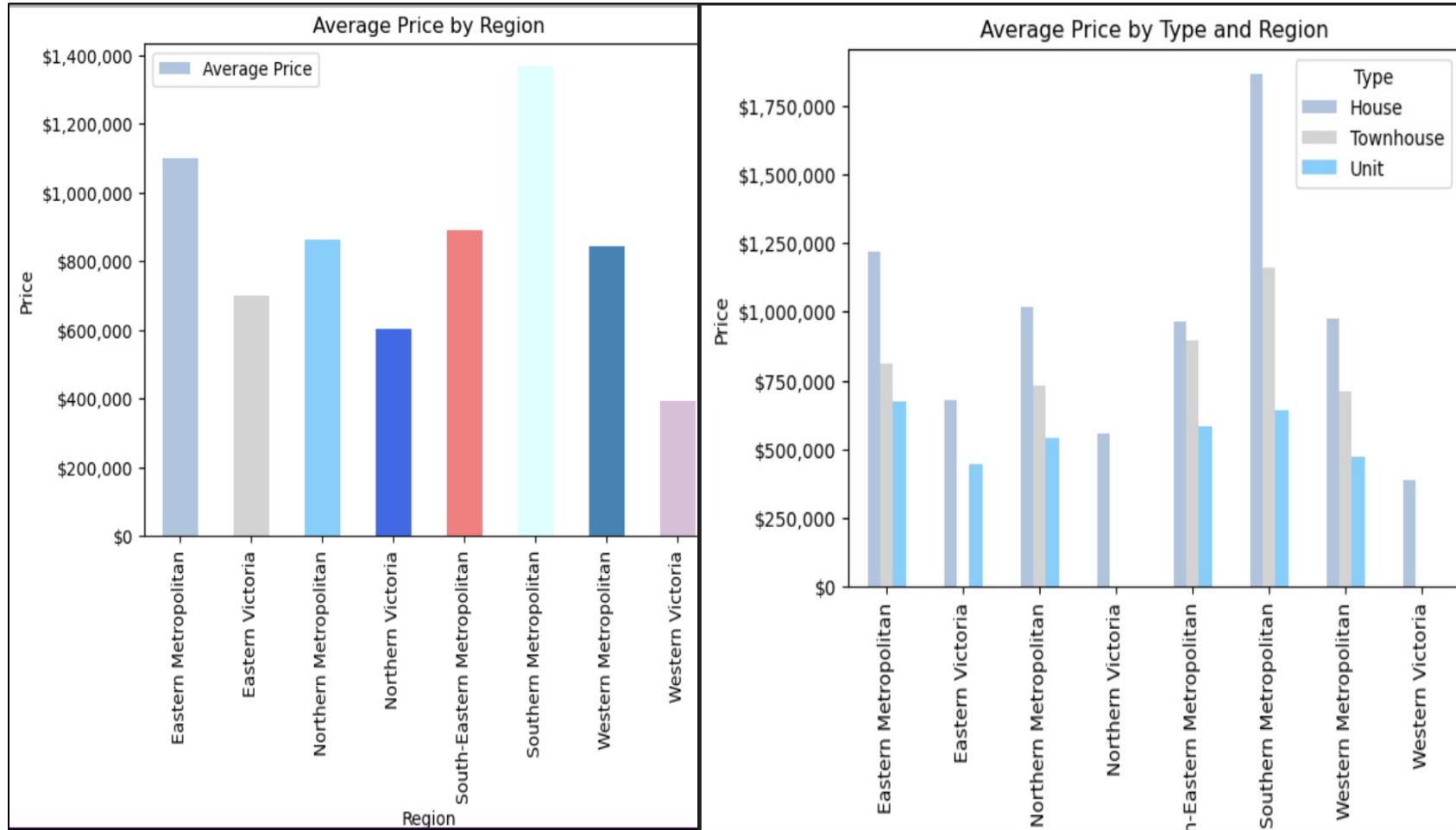
Northern Victoria \$556,895

South-Eastern Metropolitan \$930,485

Southern Metropolitan \$1,378,654

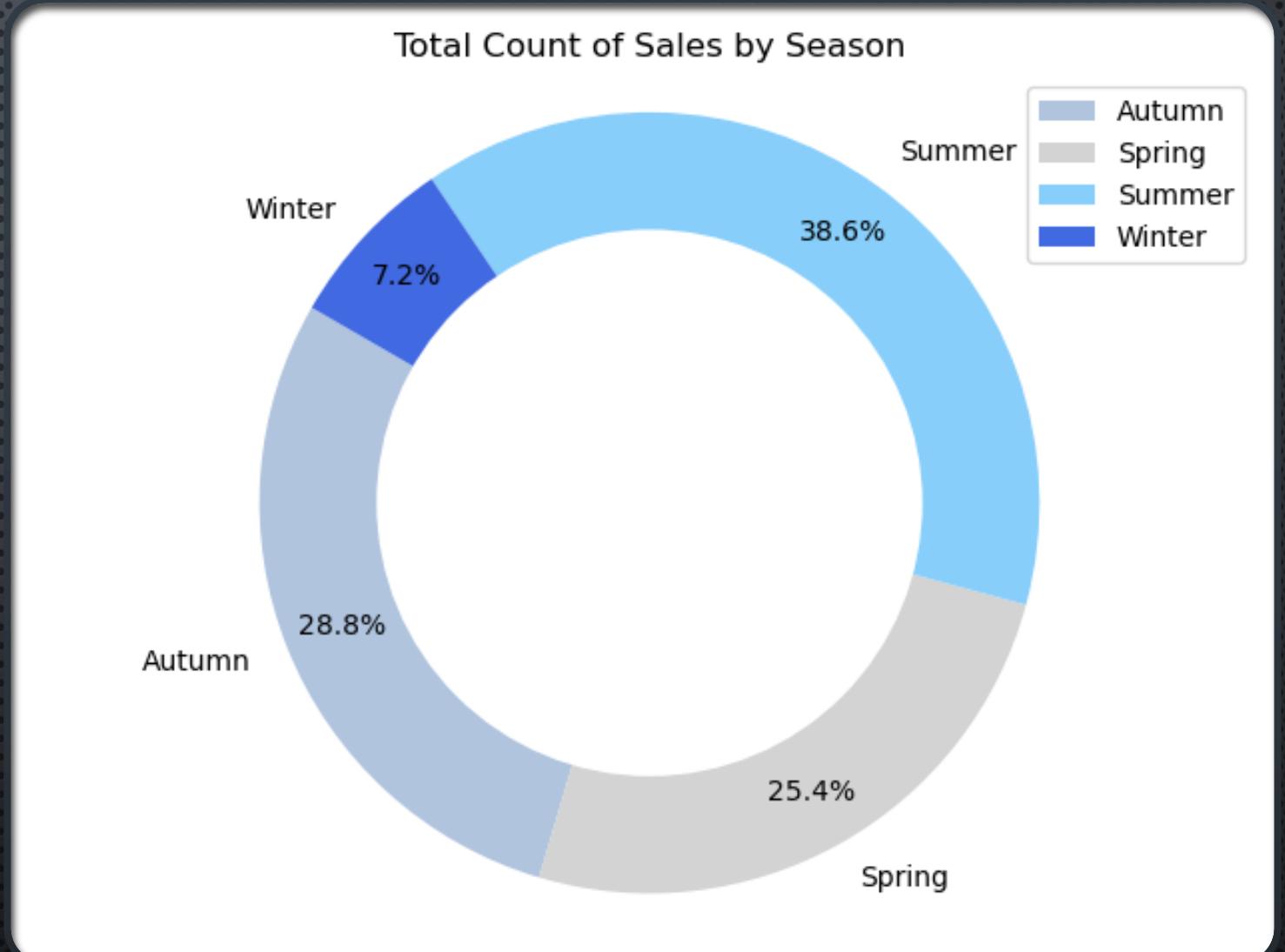
Western Metropolitan \$867,501

Western Victoria \$391,071

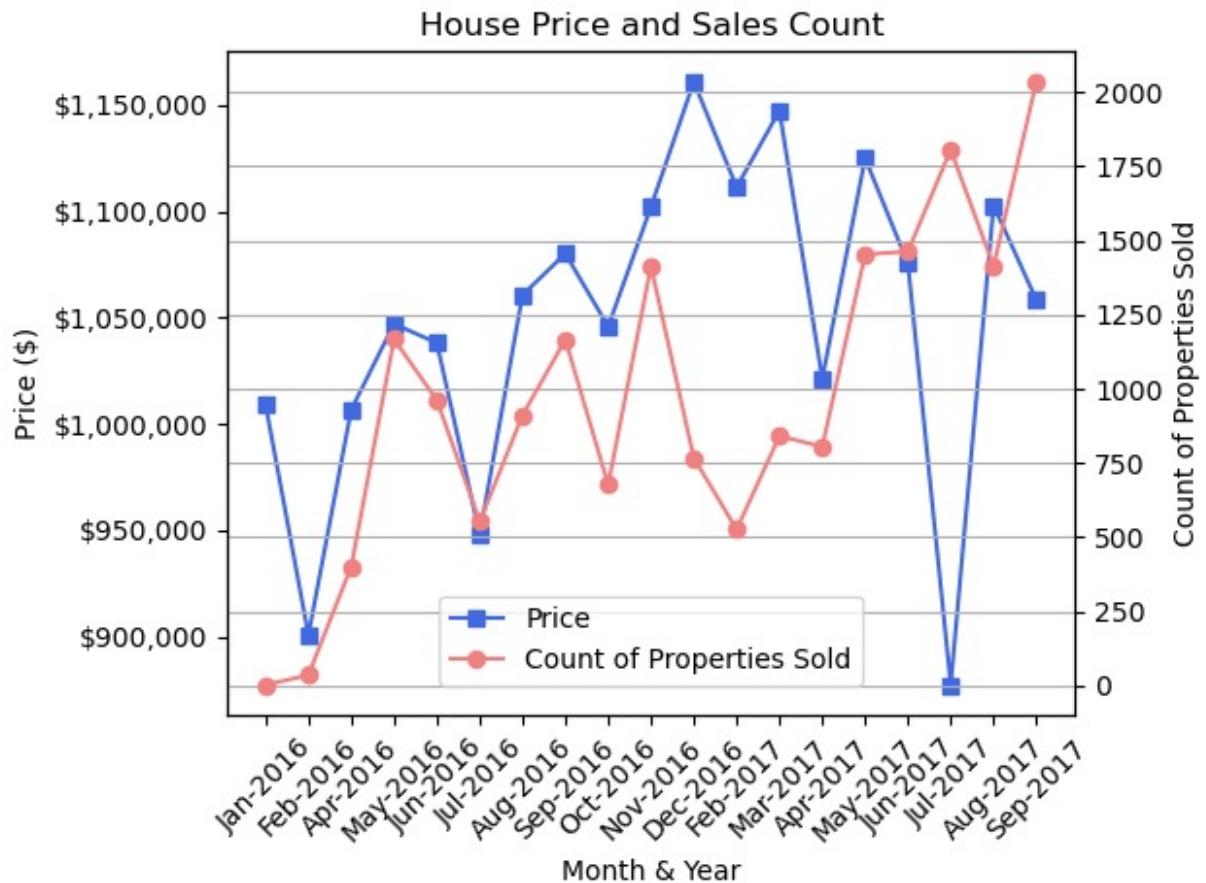


SEASONALITY OF SALES

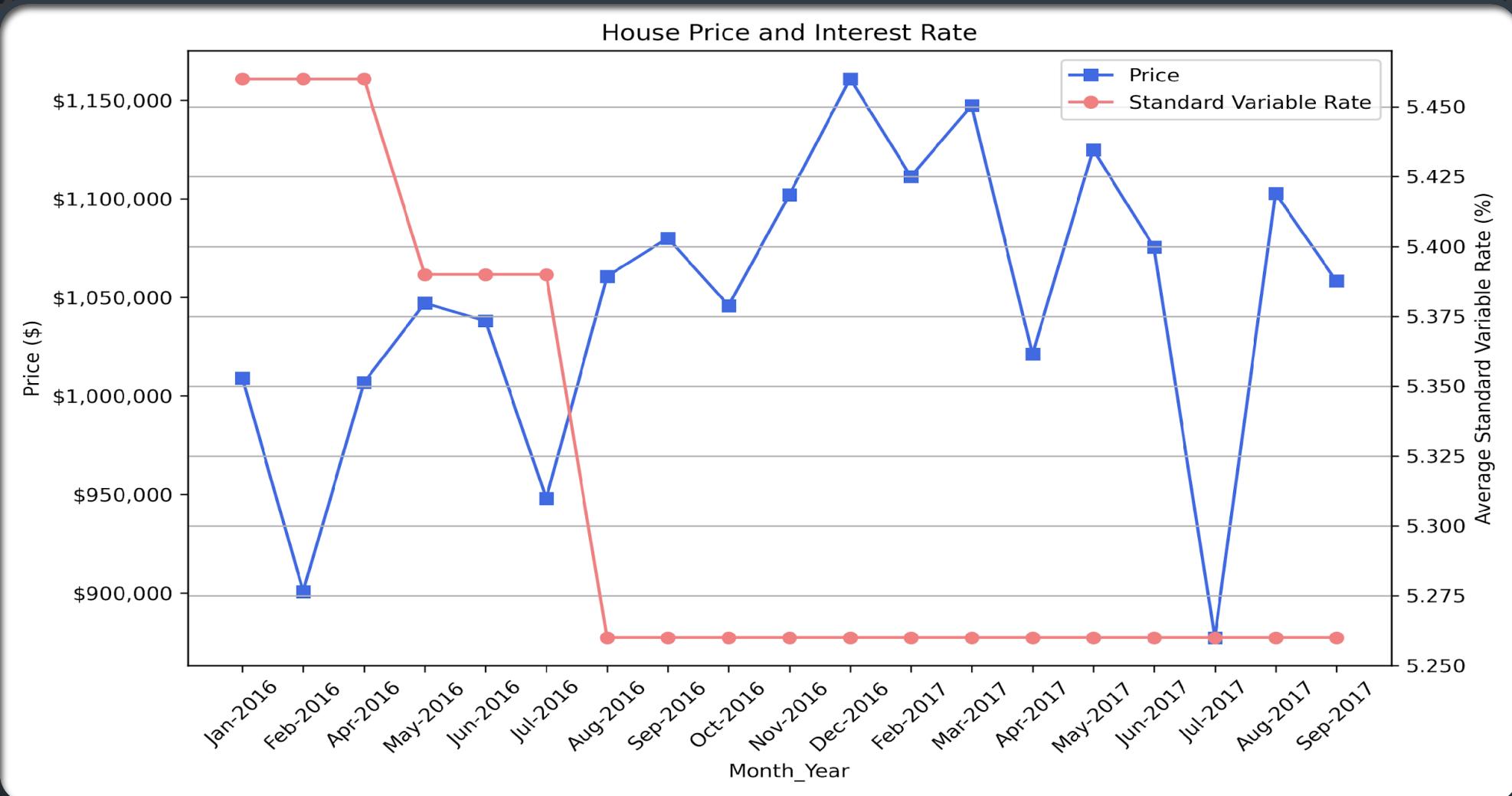
- WEATHER CONDITIONS
- PUBLIC HOLIDAYS
- ECONOMIC CONDITIONS



DOES SUPPLY IMPACT SELLING PRICE?



DOES INTEREST RATE IMPACT PRICE?





Key Question 2

What is the impact of location?

Analysing the impact of suburb, region, and distance to CBD on Melbourne property prices.

Are the headlines correct?

Most sought-after suburbs in 2016

The infographic displays a table of 10 suburbs, each with a red circular icon above it representing a specific metric: Location (pin), Rank (medal), Demand-Supply Ratio (bar chart), Total Number of Listings (list icon), Visits with at least 1 Property View (eye icon), and Median Price (dollar sign). The suburbs listed are Warrandyte VIC 3113, Brunswick VIC 3056, Norwood SA 5067, Northcote VIC 3070, Ascot Vale VIC 3032, Richmond VIC 3121, Port Melbourne VIC 3207, Montmorency VIC 3122, Hawthorn VIC 3122, and Ringwood North VIC 3134.

	Location	Rank	Demand-Supply Ratio	Total Number of Listings	Visits with at least 1 Property View	Median Price
Warrandyte VIC 3113		1	3,249	187	607,626	\$1.03m
Brunswick VIC 3056		2	3,064	257	787,360	\$925k
Norwood SA 5067		3	2,931	194	568,525	\$743k
Northcote VIC 3070		4	2,898	316	915,710	\$1.11m
Ascot Vale VIC 3032		5	2,883	199	573,697	\$1.01m
Richmond VIC 3121		6	2,820	335	944,751	\$1.2m
Port Melbourne VIC 3207		7	2,773	196	543,511	\$1.38m
Montmorency VIC 3122		8	2,725	172	468,692	\$765k
Hawthorn VIC 3122		9	2,709	249	674,554	\$1.93m
Ringwood North VIC 3134		10	2,666	184	490,488	\$805k

News article Dec 2016
claiming most sort after
suburbs for 2016

Did the data support these
claims?

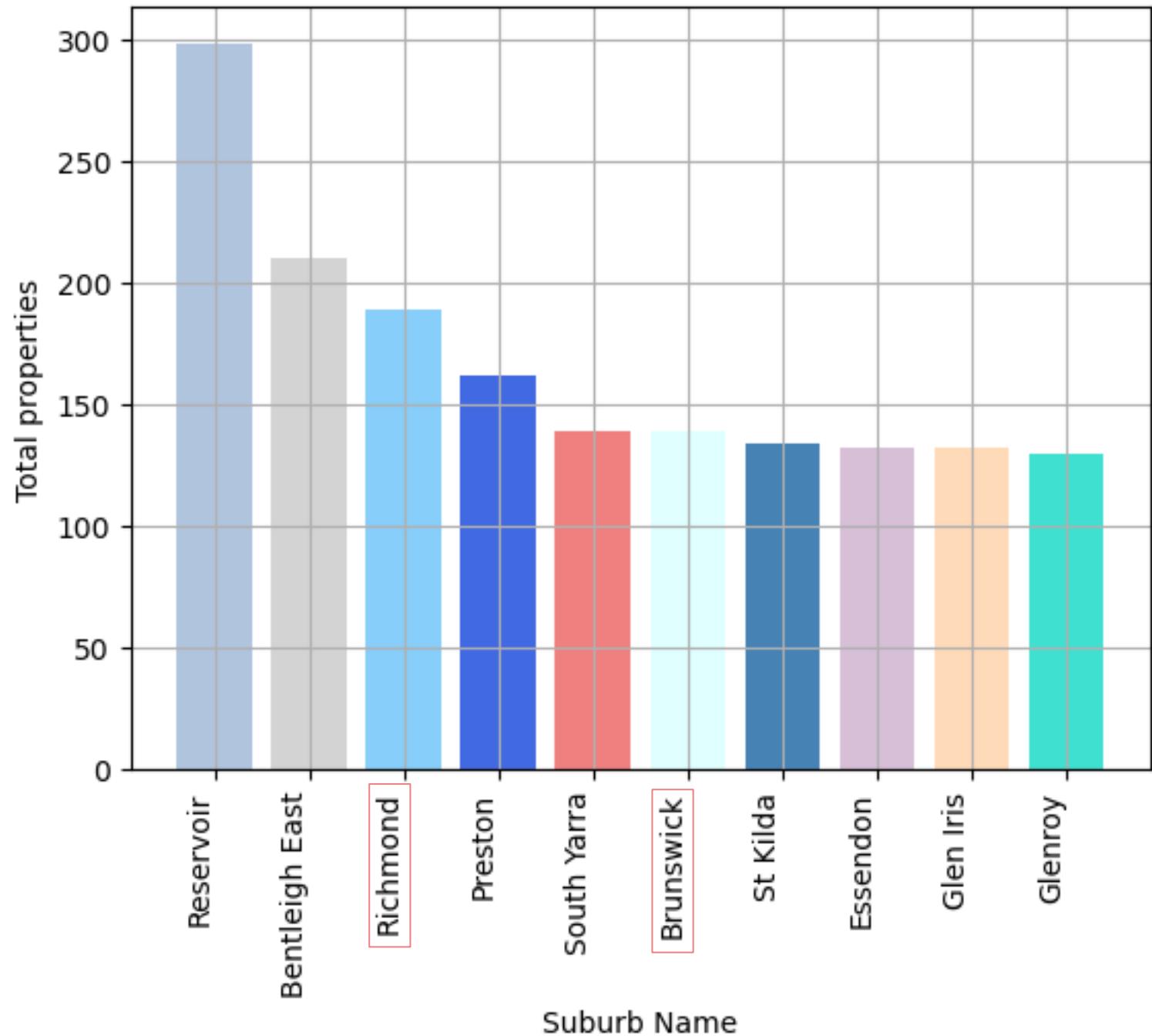
<https://www.realestate.com.au/news/australias-sought-suburbs-2016/>

Most Popular Suburbs

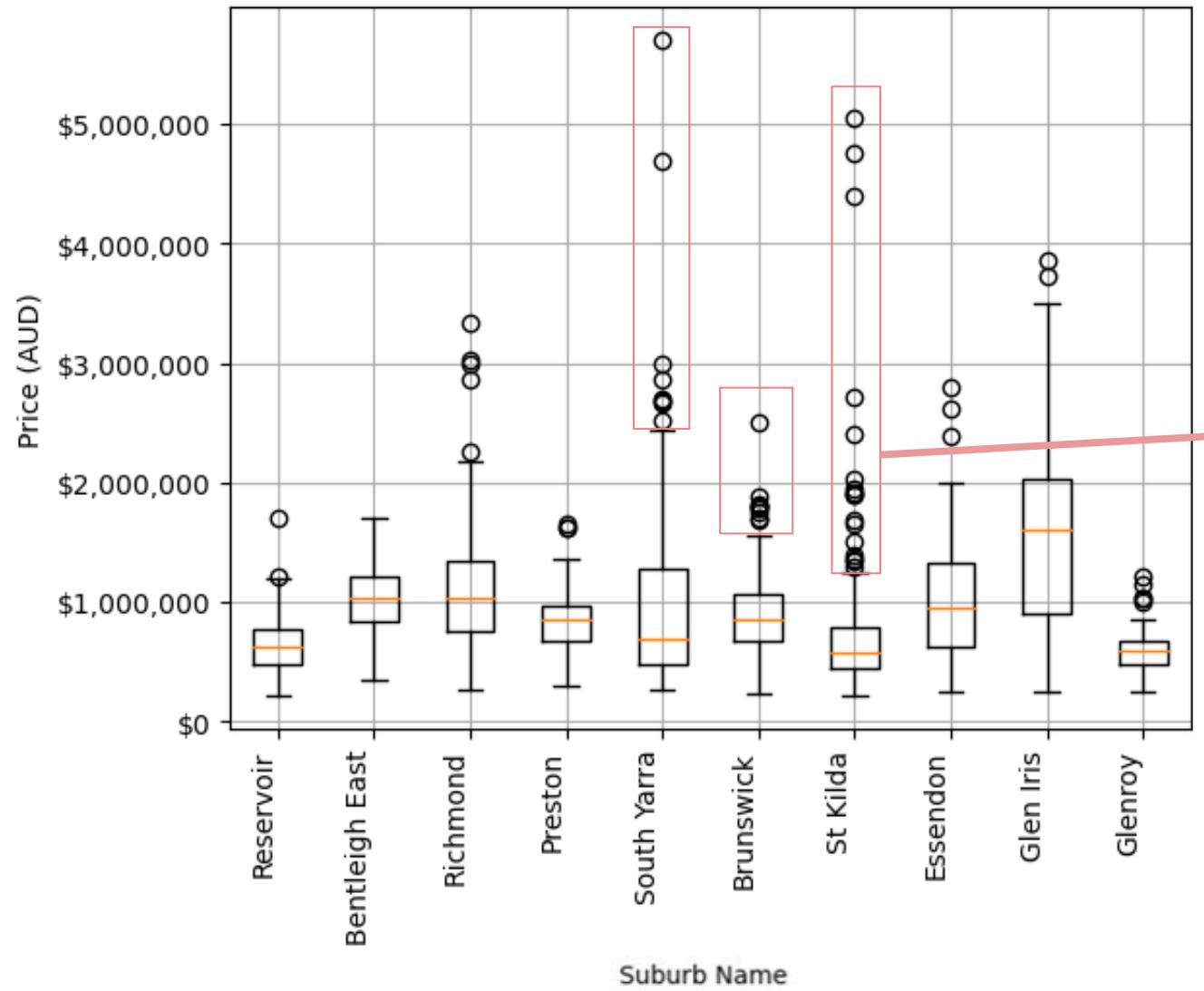
- Reservoir
- Bentleigh East
- Richmond*
- Preston
- South Yarra
- Brunswick*
- St Kilda
- Essendon
- Glen Iris
- Glenroy

*Suburbs on the most sort after list suburbs

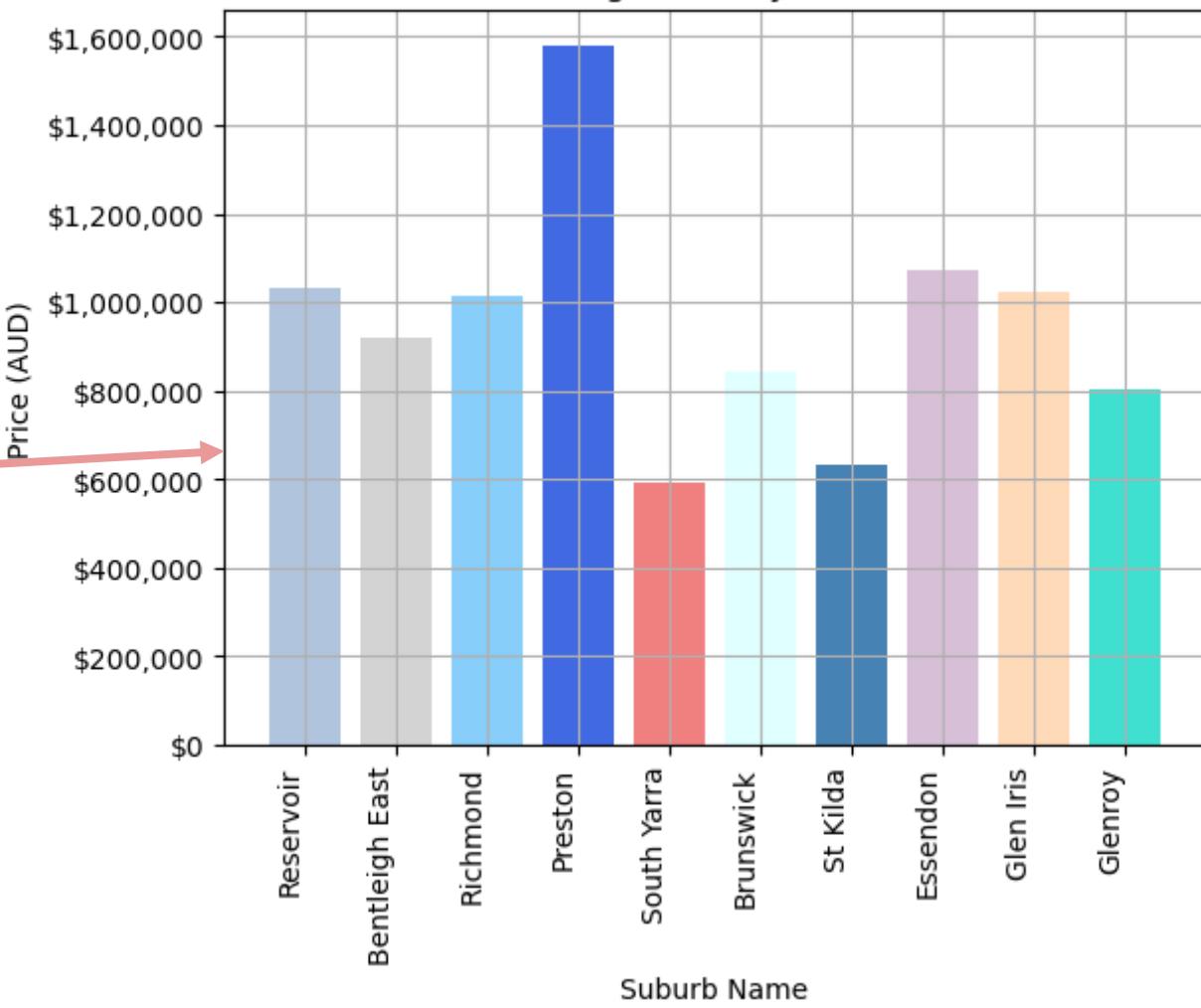
Top 10 Most Popular Suburbs



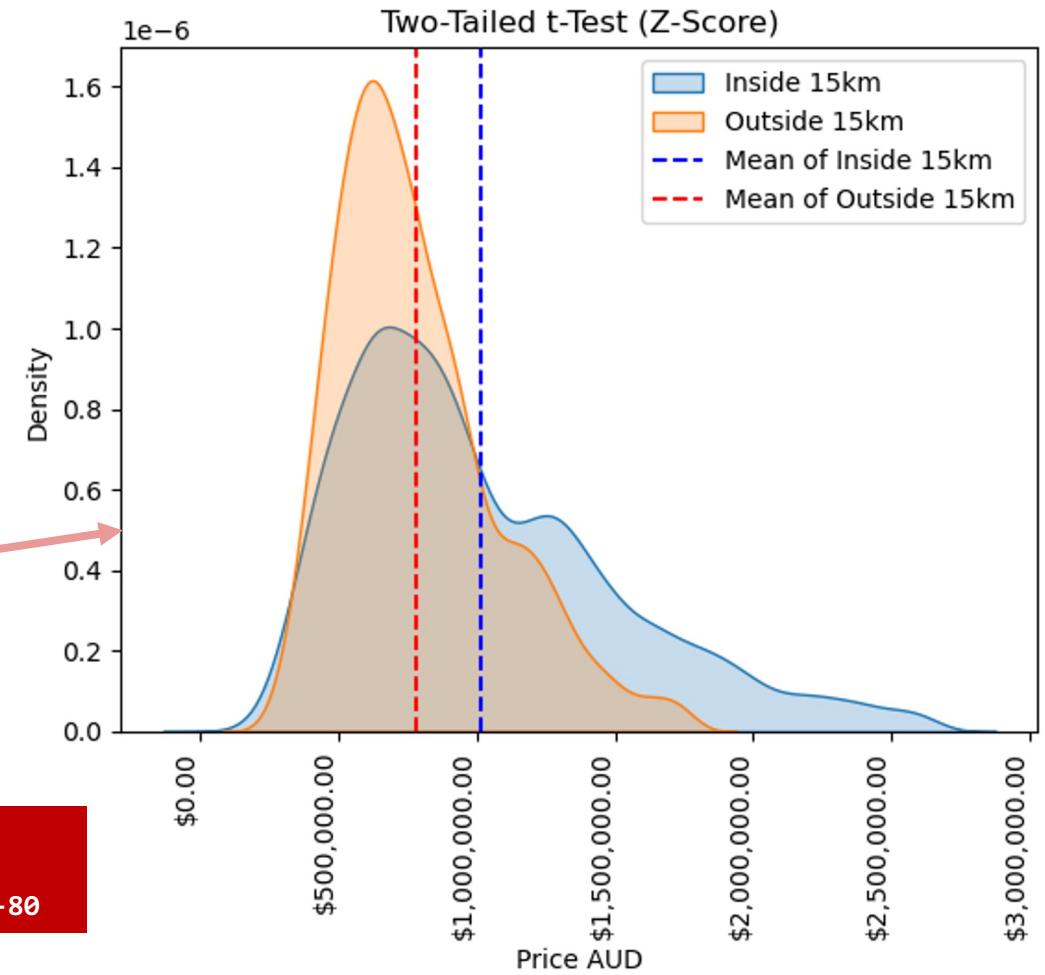
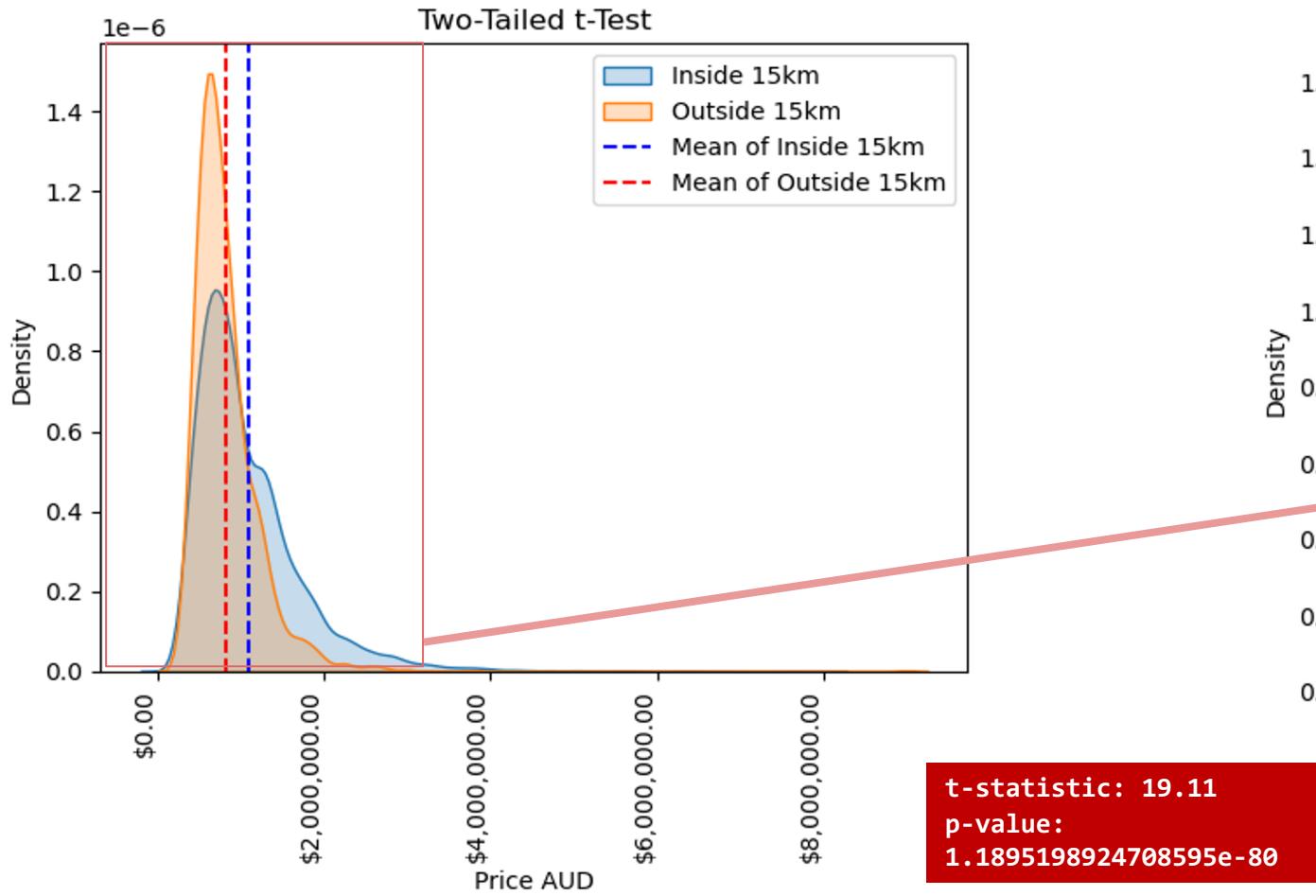
Price By Suburb



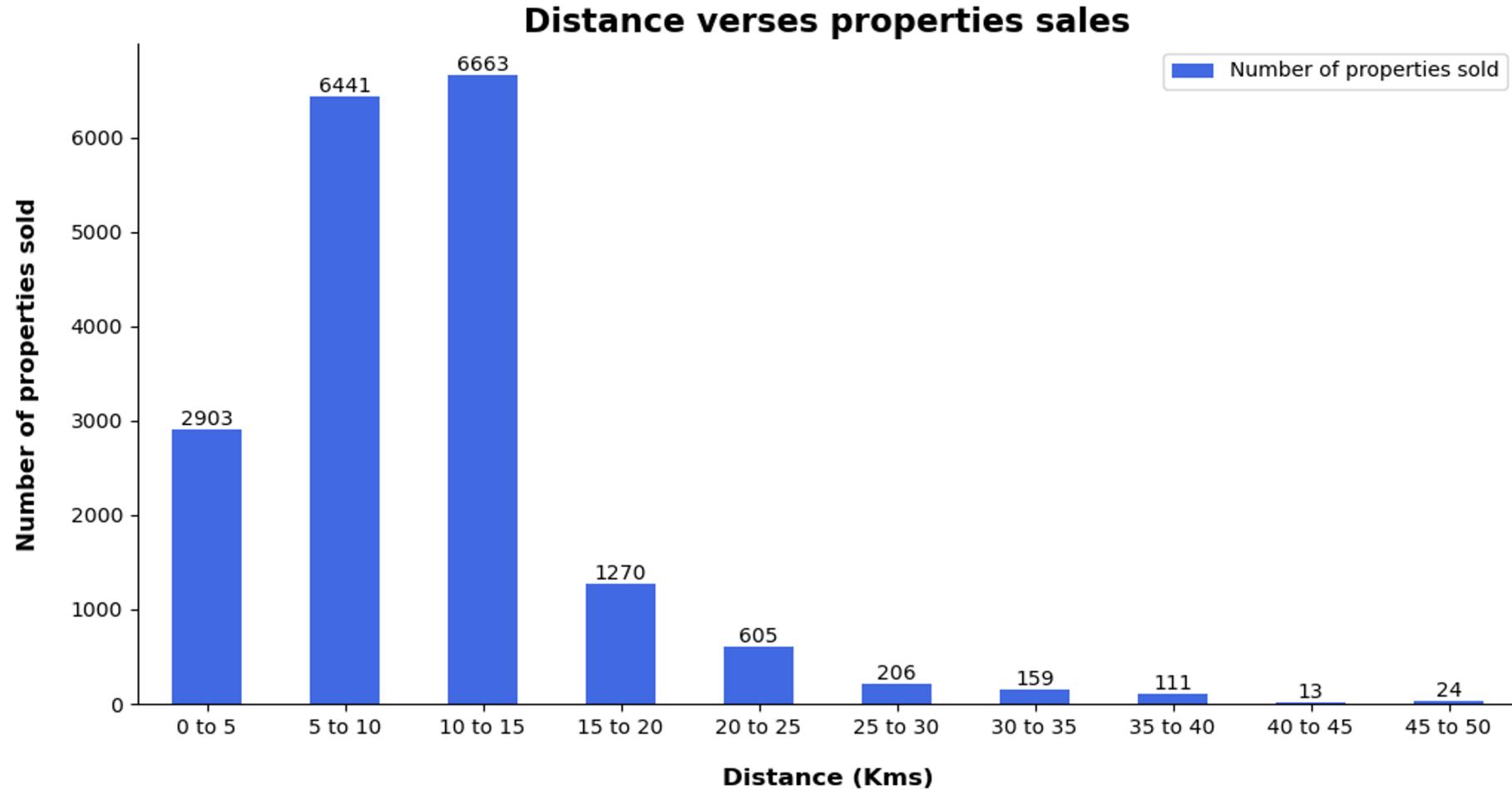
Average Price by Suburb



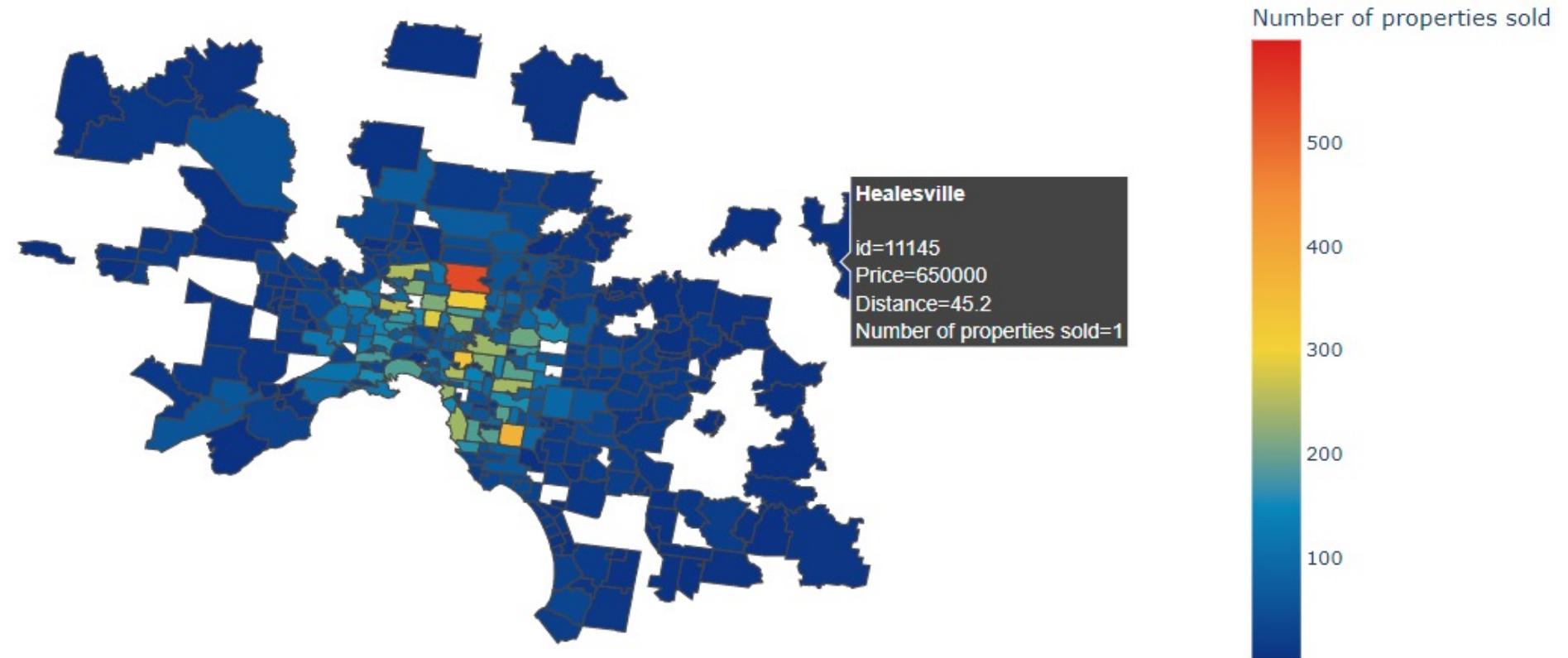
Independent T-Test



How Distance Impacts Sales



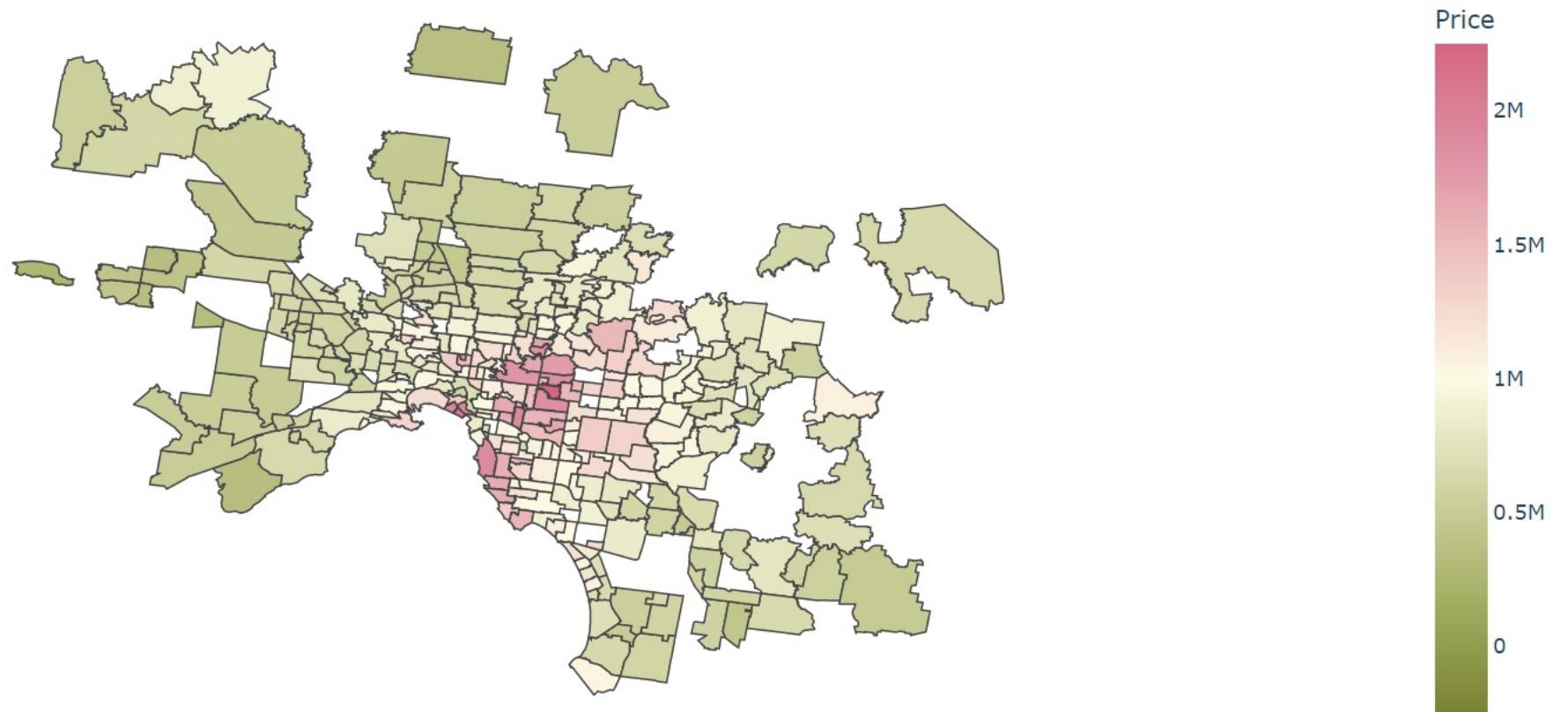
The number of properties sold and average prices across suburbs in Victoria in 2016-2017



Number of properties sold



The average price of properties sold across suburbs in Victoria in 2016-2017





Key Question 3

**How does distance
and size matter?**

Investigating the impact to Price
of distance to the CBD, Land
size, Building size and Rooms.

Method

Variables to Compare

- Price, Distance to CBD, Land Size, Building Area, Property Type & Number of Bedrooms.

Analysis Method

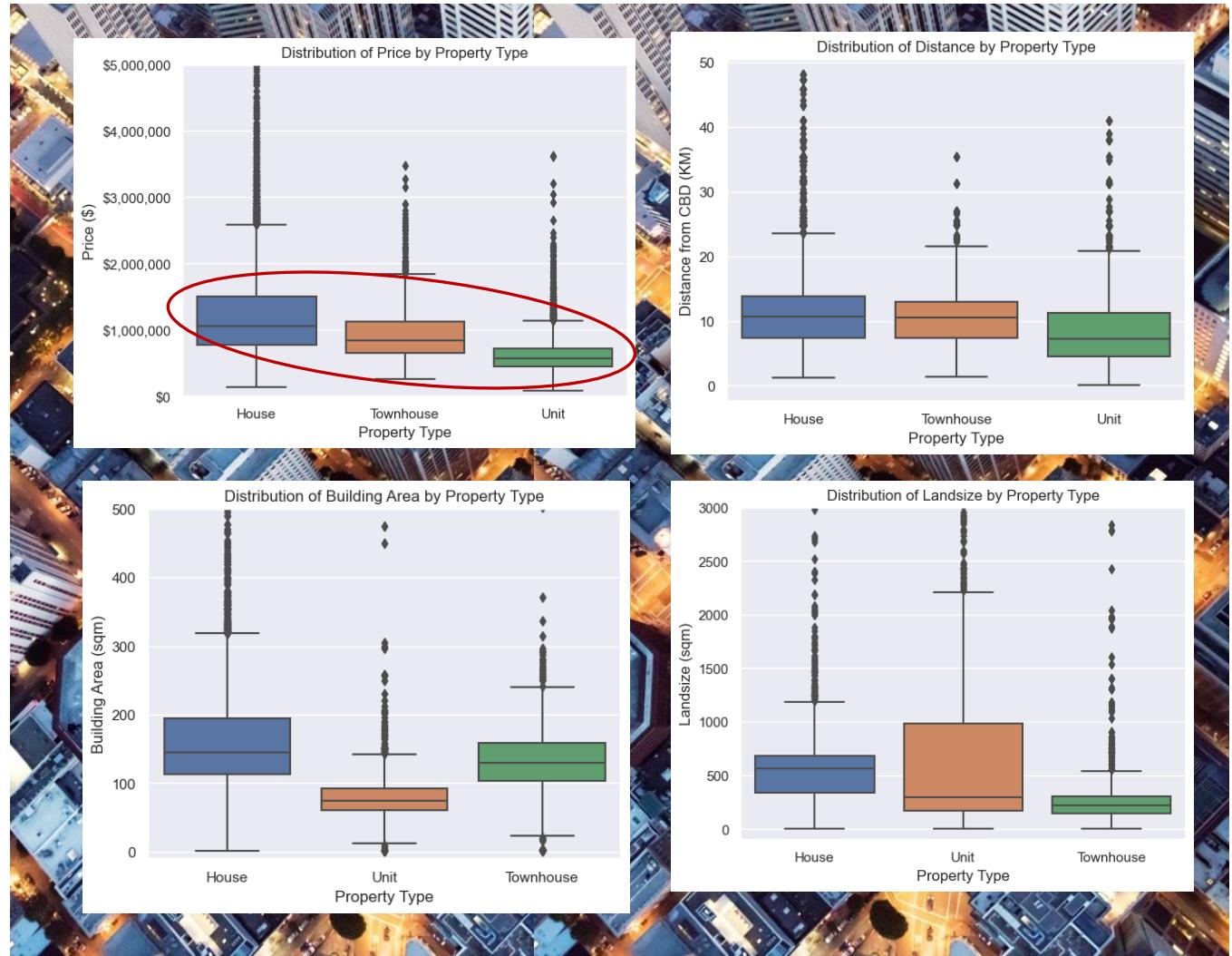
- Boxplot > Quantile Analysis > Scatter and Regression.

Initial Distribution findings

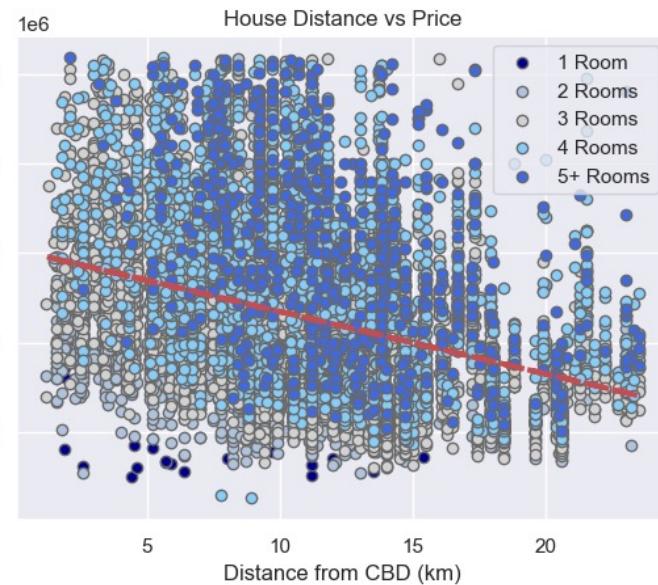
- Property Type should be plotted separate due to varying distributions.
- Outliers by Type to be removed for each variable.

Did you know?
50% of Townhouses
are over \$841k.

Did you know?
Only 1 of 4 houses have a
Building Area above 195 sqm

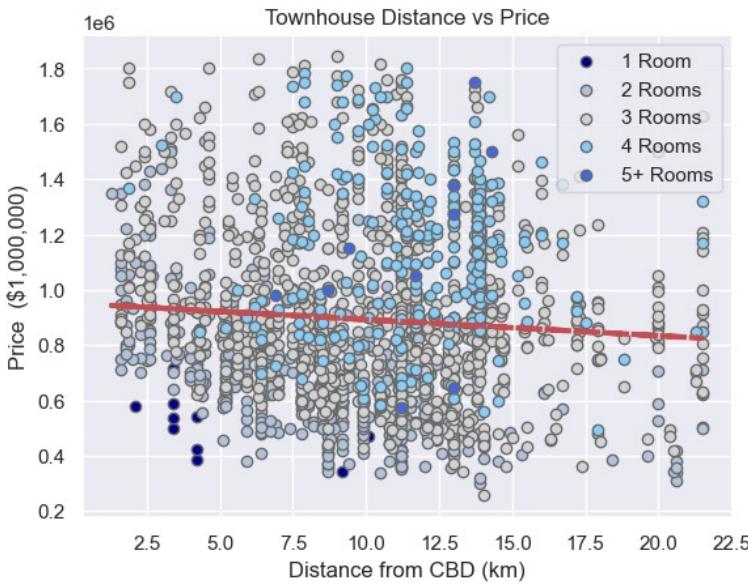


Distance to CBD vs Price



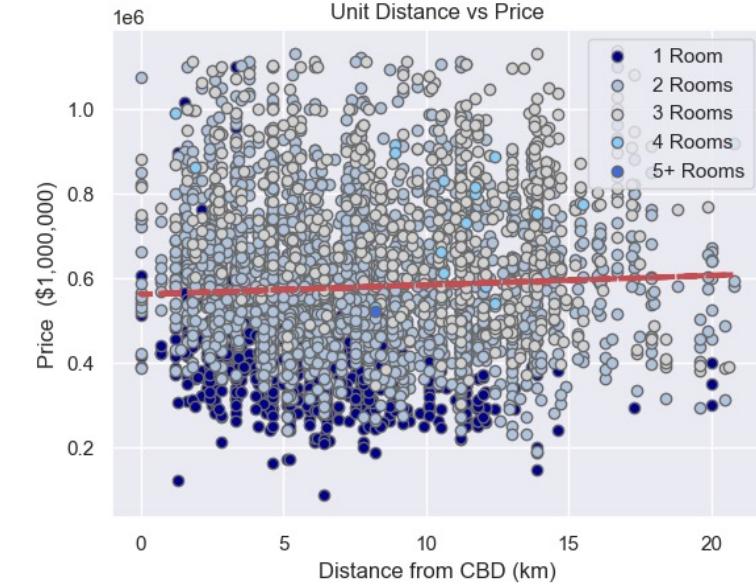
$$y = 1521090 - 34822x$$

- Negative correlation.
- \$34,800 less per KM increase from CBD.
- Increased shift in price of trends as Number of rooms increases.
- R-squared Value = 0.1134



$$y = 950883 - 5865x$$

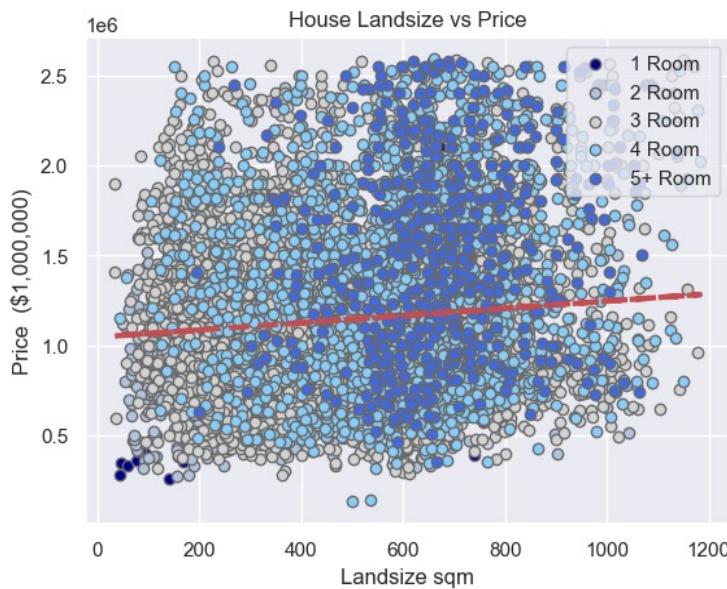
- Slight negative correlation.
- \$5,865 less per KM increase from CBD.
- Model closer fit for 3-4 Rooms- vs 4 Rooms +.
- R-squared Value = 0.0056



$$y = 560334 + 2222x$$

- Slight positive correlation.
- \$2,222 more per KM increase from CBD.
- Lower room properties closer to CBD which may impact model.
- R-Squared Value = 0.0024

Land Size vs Price



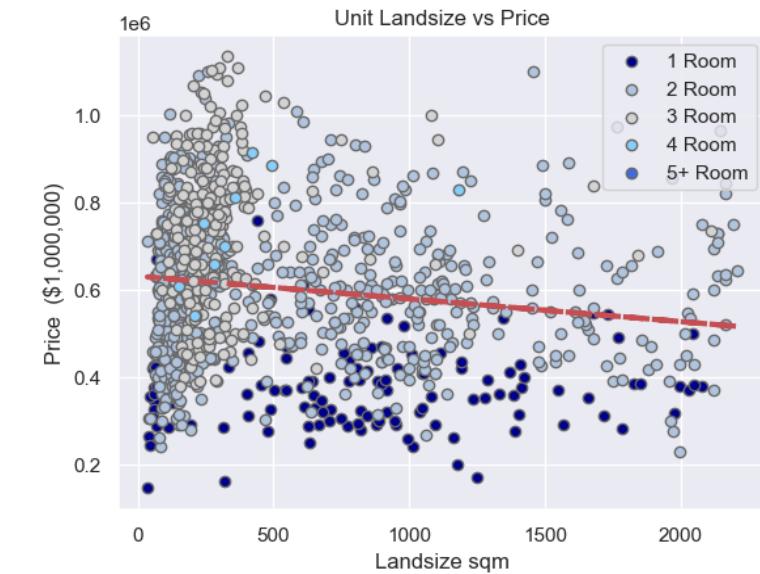
$$y = 1045411 + 200x$$

- Positive correlation.
- \$200 increase per SQM
- Number of rooms dominates higher Land size.
- R-squared Value = 0.0085



$$y = 807535 + 350x$$

- Positive correlation.
- \$350 increase per SQM
- Misleading with values close to zero and > 500 SQM.
- R-squared Value = 0.0581



$$y = 631617 - 52x$$

- Negative correlation.
- \$52 less per SQM.
- Values close to 0 and > 500 SQM could be misleading.
- May be indicator of high density = lower price.
- R-Squared Value = 0.0212

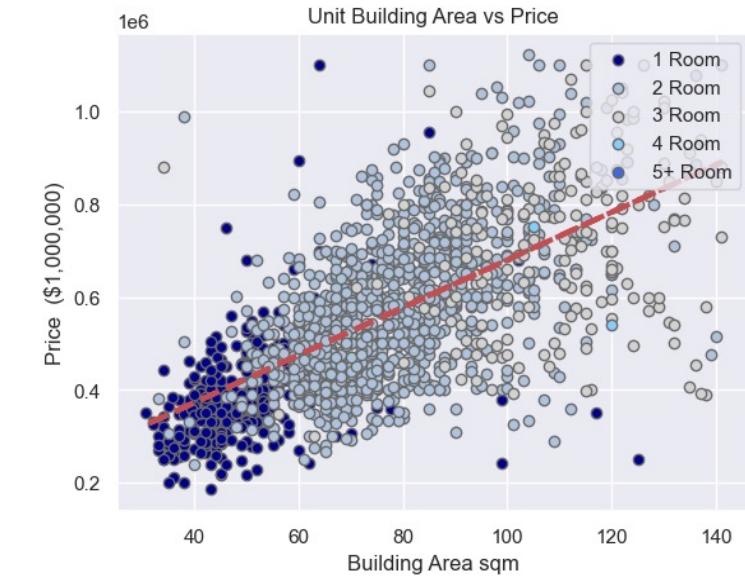
Building Area vs Price



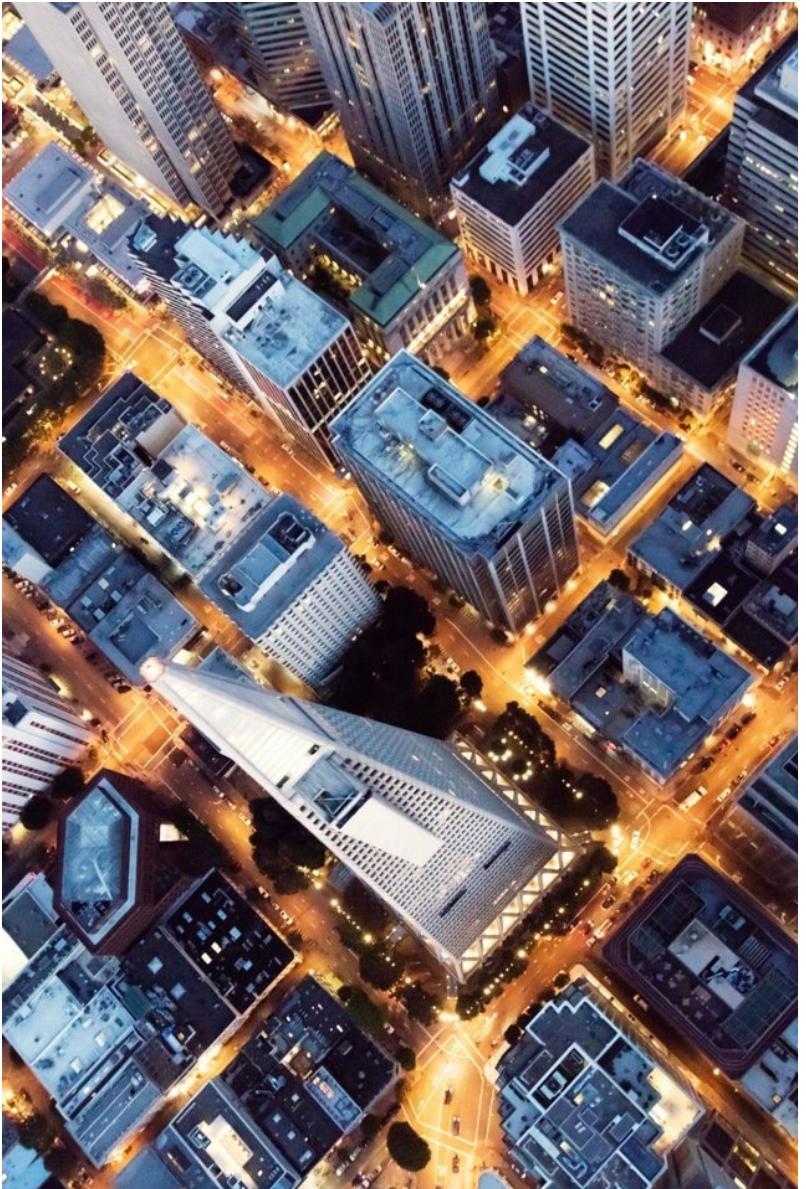
- Positive correlation.
- \$3,810 more per SQM increase.
- Lower number of rooms grouped closer to regression model.
- R-squared Value = 0.1826



- Positive correlation.
- \$4,803 more per SQM increase.
- Some grouping of number rooms.
- R-squared Value = 0.3667



- Positive correlation.
- \$5,129 more per SQM increase.
- Shift of number of room grouping as Building Area increases.
- R-Squared Value = 0.423



Findings



- Building Area best variable to predict property price.



- Distance to CBD is next best – where Unit correlation contrasts House & Townhouse.



- Land Size is not a meaningful variable in predicting price.



- Number of rooms shifts data curve.
Explore improved model through segmentation by Number of Rooms & non-linear regressions.

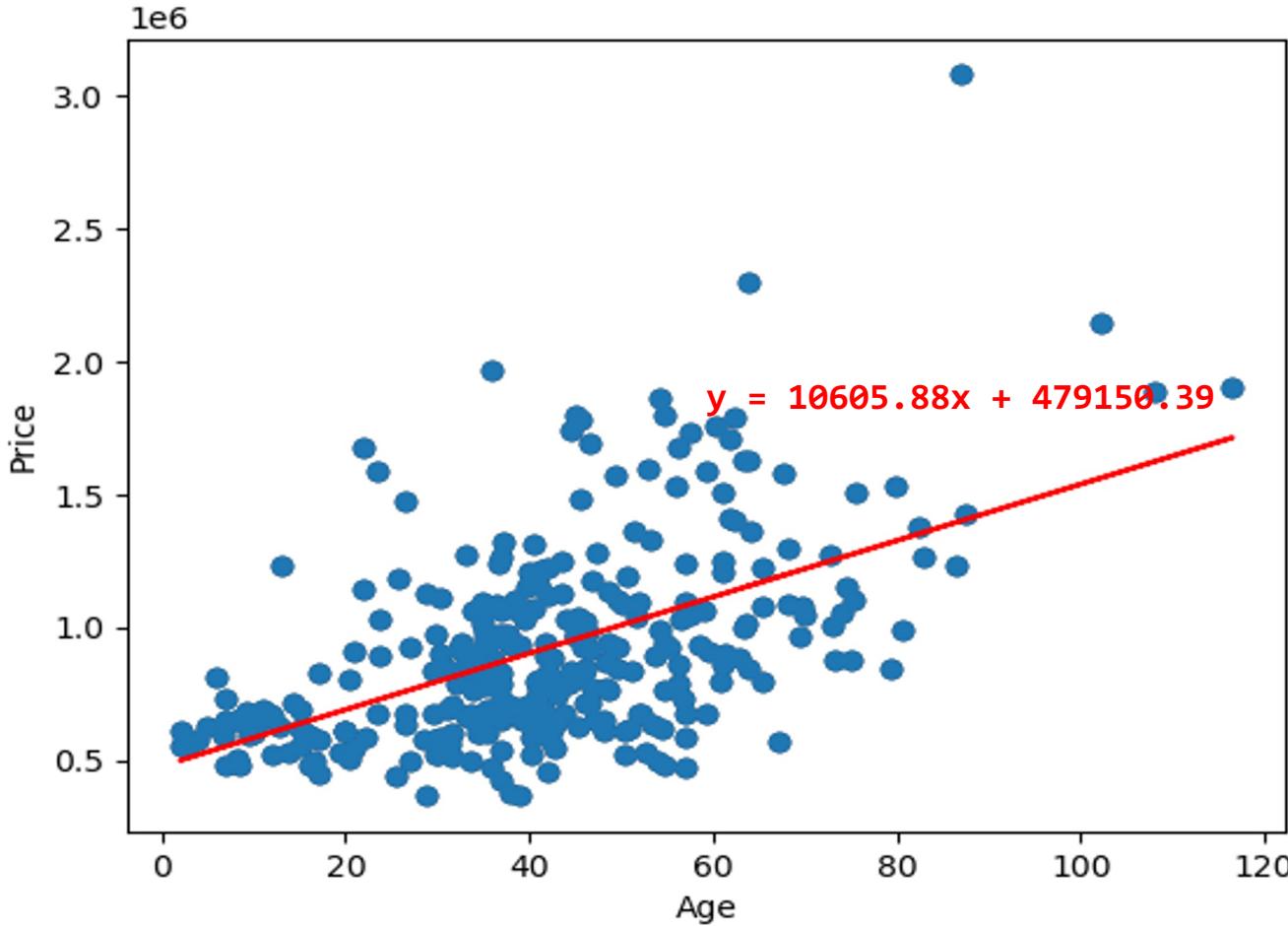


Key Question 4

Is age just a number?
Analysing the effect of building age on property prices in Melbourne, seeing if there is a correlation to price across all suburbs.

Relationship between Age and Price

Average Price verses Average Age of Properties by Suburbs in Victoria



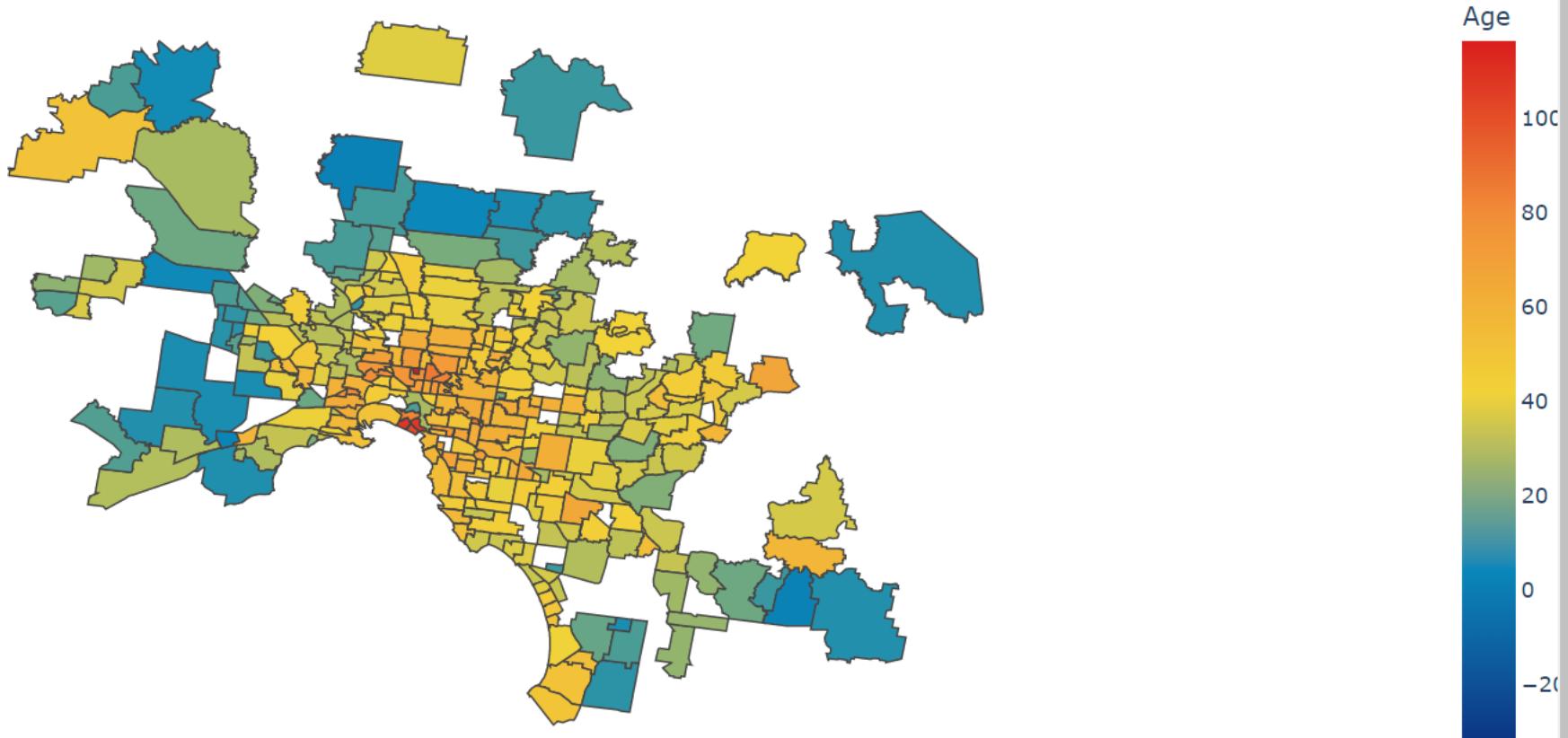
Correlation coefficient = 0.5315

Pearson correlation coefficient and p-value for testing non-correlation.

A **significance level** of 5%, $\alpha=0.05$

P-value = 7.3598836e-24

The average age of properties sold across suburbs in Victoria in 2016-2017



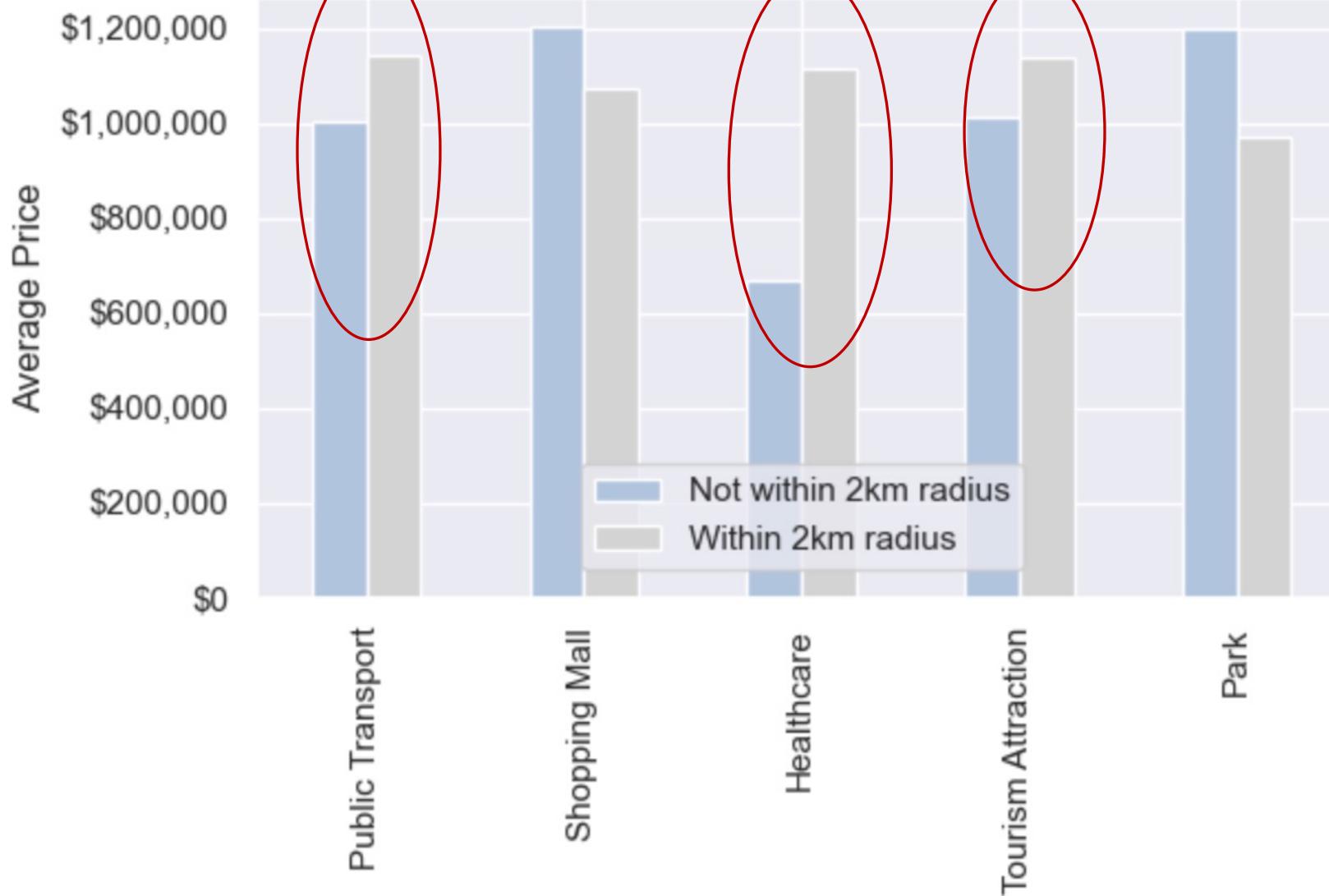
Key Question 5

Do lifestyle factors influence decision making?

An analysis of the impact of proximity to public transport, shopping, healthcare, tourist attractions and open parklands has on house prices in Melbourne.



How Unique Factors within a 2km Radius Affect House Prices for Properties Located 10 to 20km from the CBD



Summary and conclusion

- Beware of online articles
- Houses are highest priced in Southern Metro
- Better to sell summer and buy in winter
- Not all amenities are created equal
- Size matters - for the building only
- Price & Age – has relationship