

WHAT FUELS THE MELBOURNE PROPERTY MARKET

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In a sizzling Real Estate market, what fuels property transactions?

Analysis:

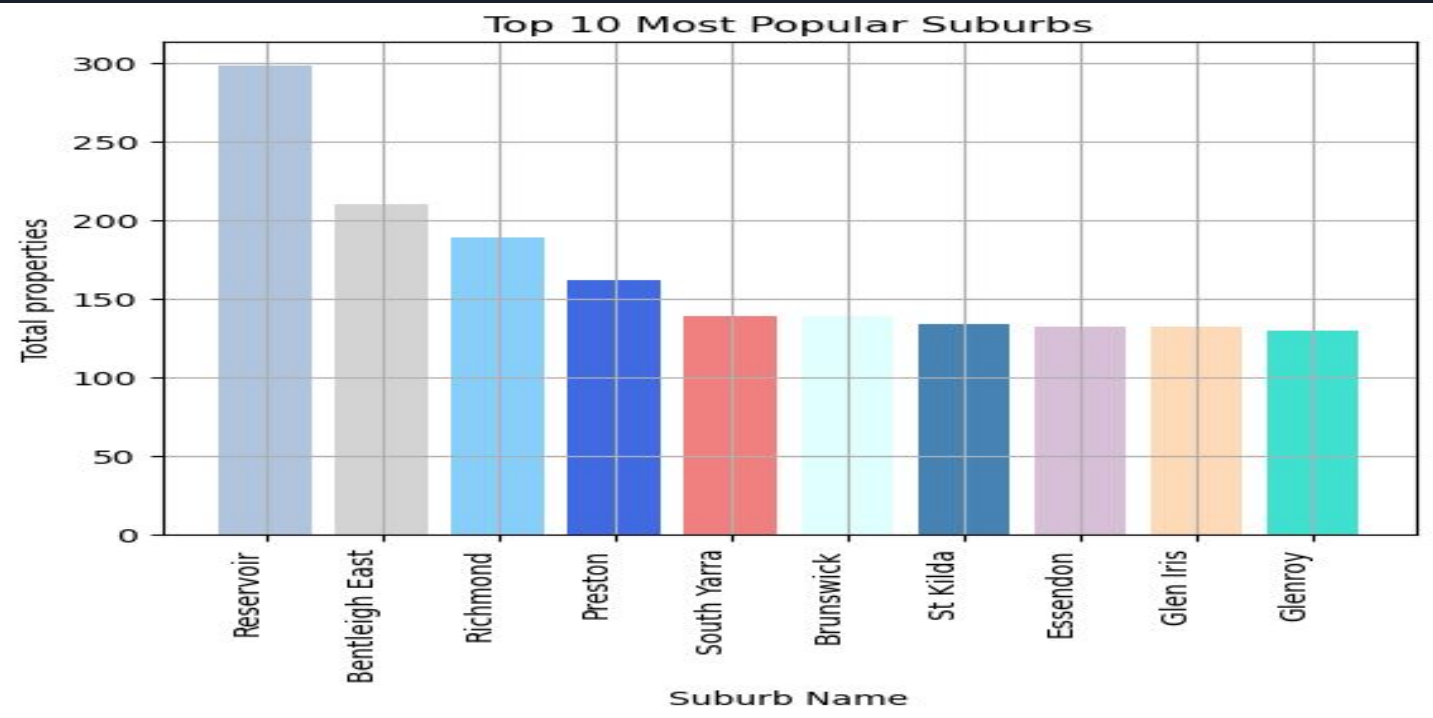
- We will be looking at what factors influence median suburban house prices.
- How does location impact prices?
- Does weather have any role to play in property prices?
- Is there any correlation to year built?
- How do lifestyle factors influence decision making?

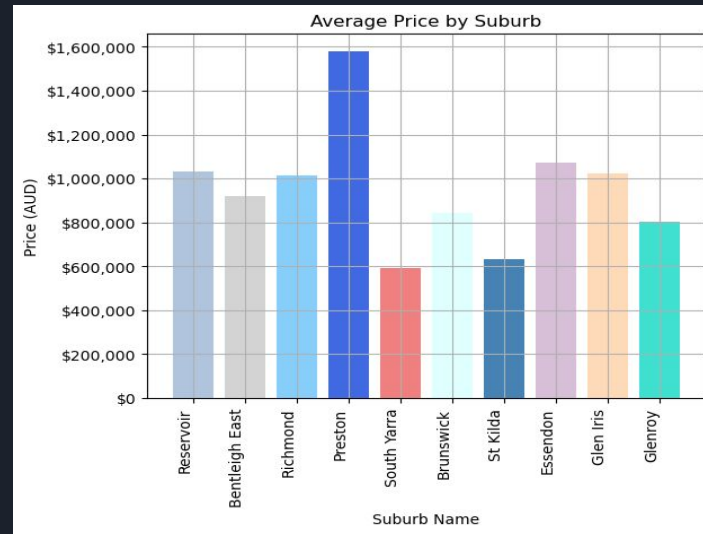
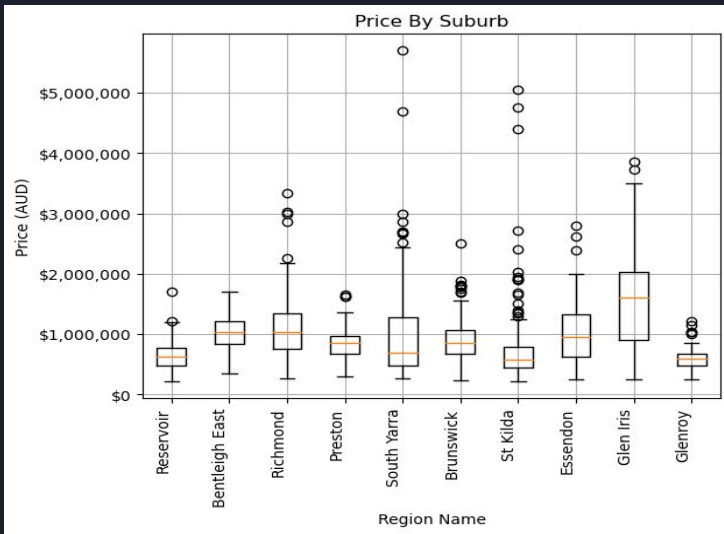
We want to verify, if this data correct ?

Most sought-after suburbs in 2016

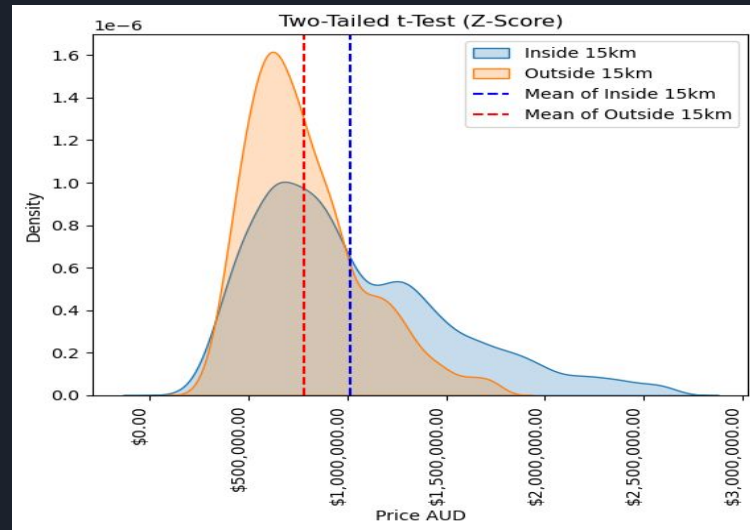
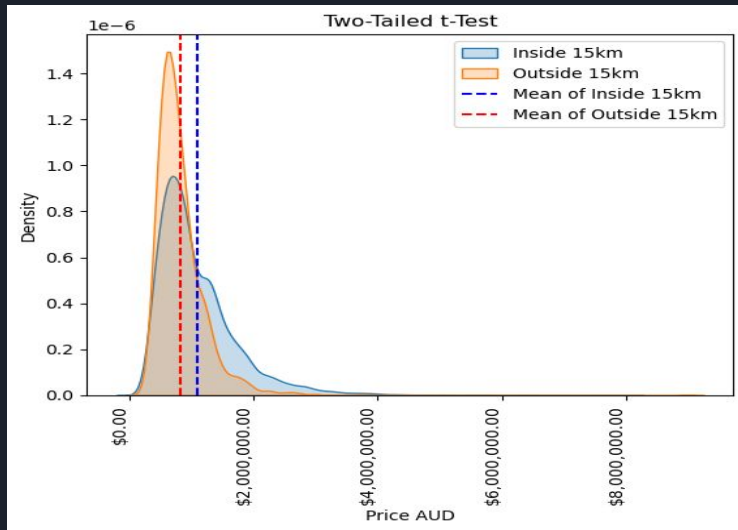
 Location	 Rank	 Demand-Supply Ratio	 Total Number of Listings	 Visits with at least 1 Property View	 Median Price
Warrandyte VIC 3113	1	3,249	187	607,626	\$1.03m
Brunswick VIC 3056	2	3,064	257	787,360	\$925k
Norwood SA 5067	3	2,931	194	568,525	\$743k
Northcote VIC 3070	4	2,898	316	915,710	\$1.11m
Ascot 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


Ammar: Location: Analysing the impact of Suburb, Region, and Distance to CBD on Melbourne Property Prices.





Independent T-Test





Simon: Suburb weather and its effects on housing prices.

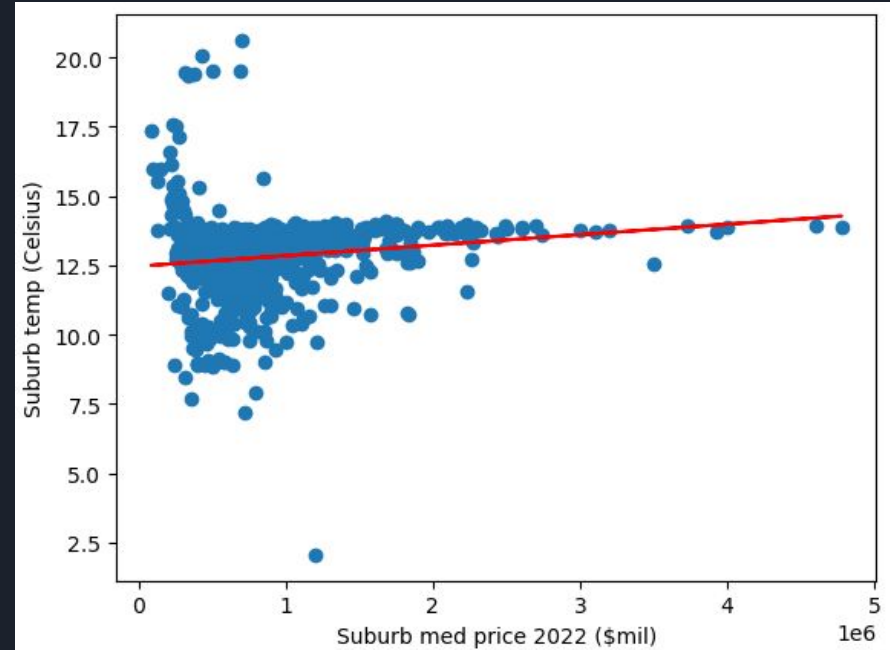
This analysis was to determine whether suburb temperature had an effect on median house prices.

- The theory was that Suburb temperature did not have an effect on median house price.
- Correlation coefficient proved a very weak correlation between the two variables
- Additional analysis of Driving distance from CBD vs Temperature was completed
- Suburb temperature varied between suburbs

Analysis of Suburb Temperatures vs Median house prices

R-squared of 0.0201

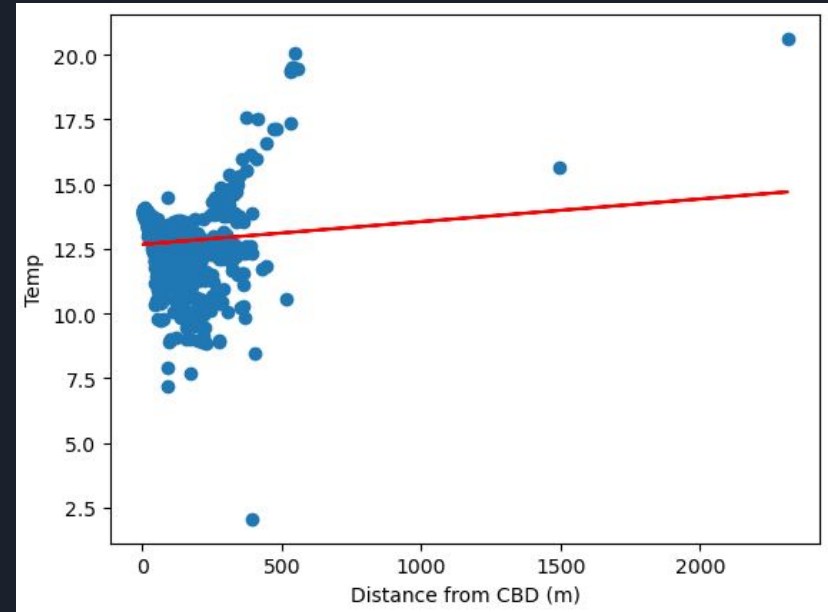
- Indicating very weak correlation between Suburb Temp and Median House price
- Median house price does not vary as suburban temperature changes
- Very low t-test score which




Analysis of Suburb Temperatures vs Driving distance from CBD

R-squared of 0.00714

- Indicating very weak correlation between Suburb Temp and driving distance from CBD
- Majority of the suburbs are within 50km from the Melbourne CBD
- Variation of Temperature becomes spread as you move further away





Bich: Age as a Variable: Examining the influence of building age and area age on Victorian Property Value.

This analysis was to determine correlation between house price and year built

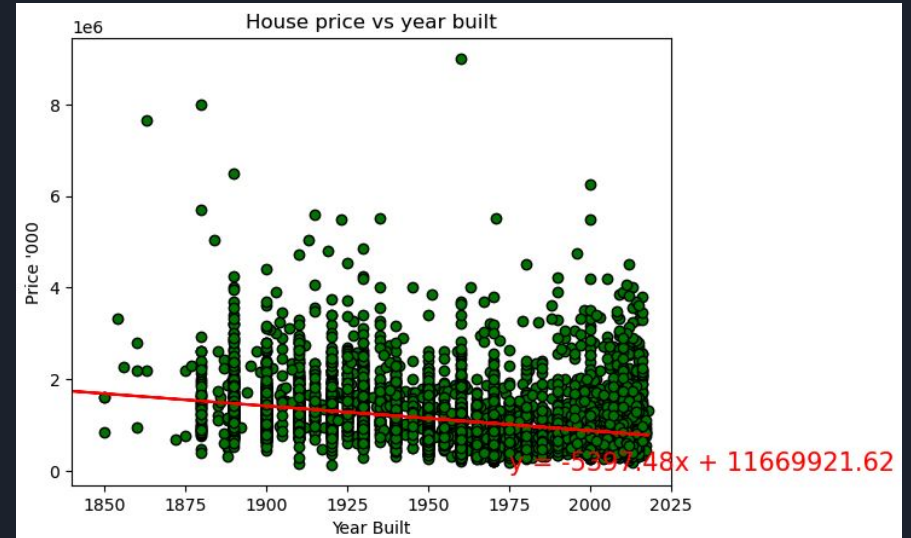
- Null hypothesis: There is no correlation between housing pricing and age of building.
- Alternate Hypothesis: There is significant correlation between housing pricing and age of building.

Analysis of median housing price sales compared to the year of being built

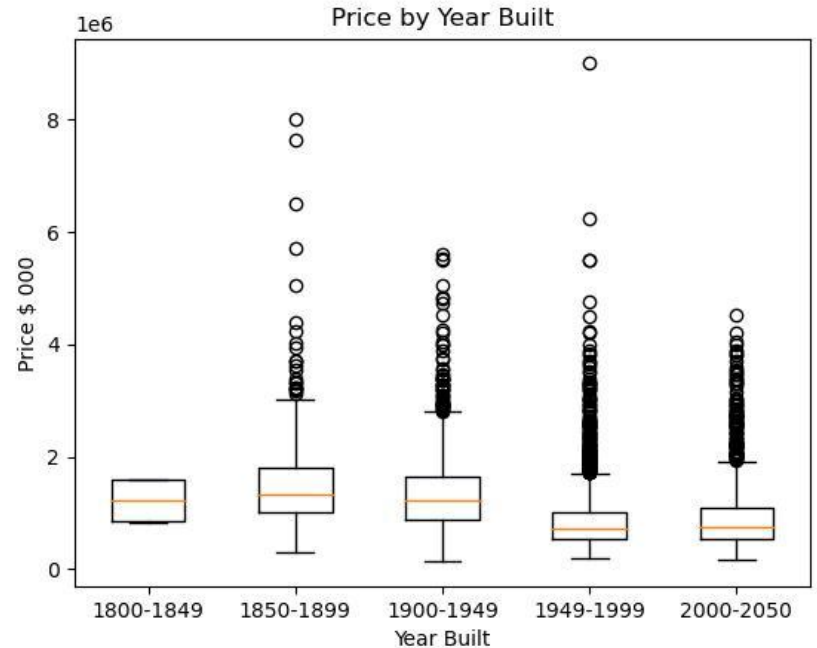
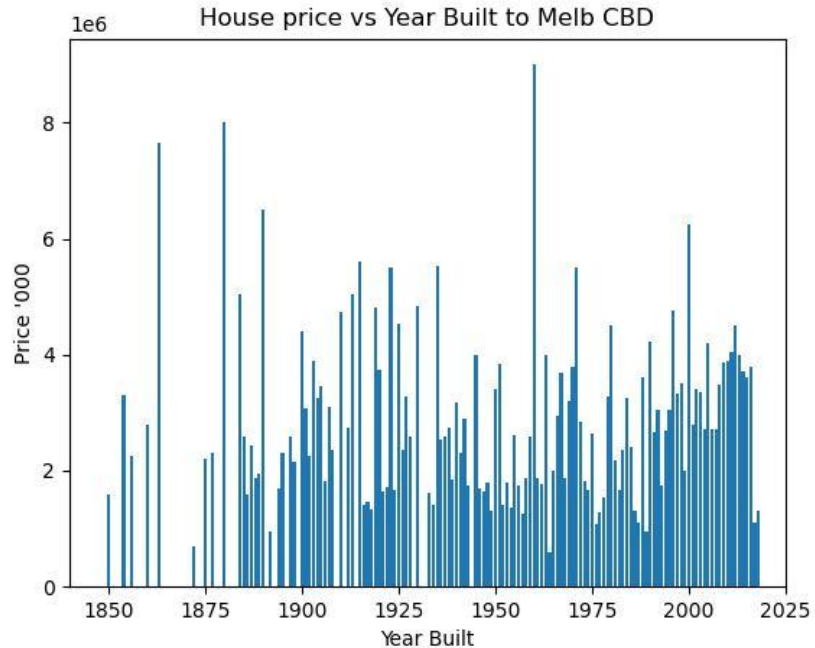
R-squared of 0.093


- Indicating low level of dependence correlation
Between year built and house price
- Inflation correlation for further analysis

(source: <https://www.in2013dollars.com/Australia-inflation>)



Variability of price as a function of year built





Age as a Variable: Examining the influence of building age on Victorian Property Value.

This analysis was to determine correlation between house price and year built

- Null hypothesis: There is no correlation between housing pricing and age of building.
- Alternate Hypothesis: There is significant correlation between housing pricing and age of building.
- R-squared value is 0.093 which is indicating there is a low level of dependence correlation between the two variables
- T-statistic: 0.326
- P-value: 0.7445
- P value > 0.05 therefore the alternate hypothesis is true, there is significant correlation between housing pricing and age of building.
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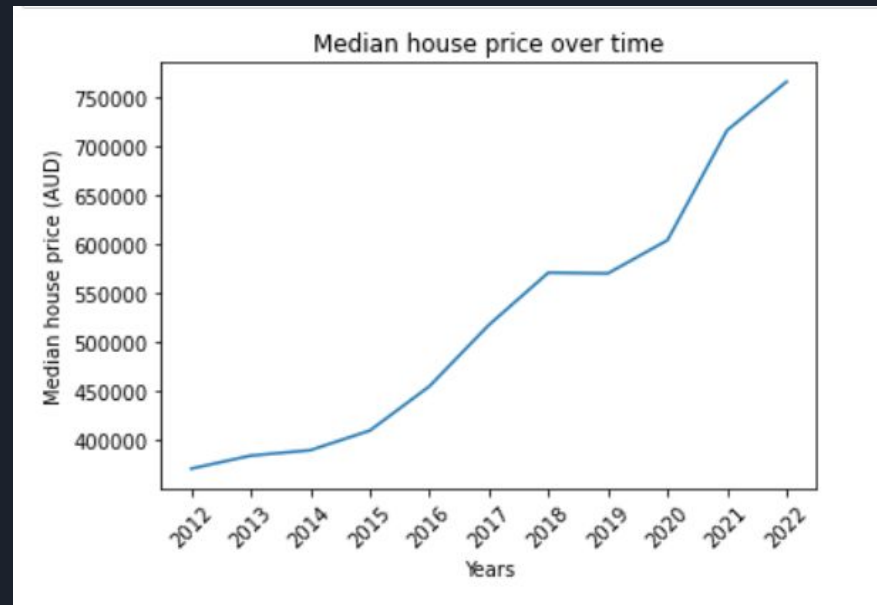
Oormi: Assessing the Impact of the number of facilities and their type on the median house price of a suburb.

Null hypothesis: The number of total facilities and each type of facility does not have any impact on suburb house prices.

Alternative hypothesis: The number of total facilities and each type of facility should increase with suburb house prices as demand should increase with a higher number of facilities.

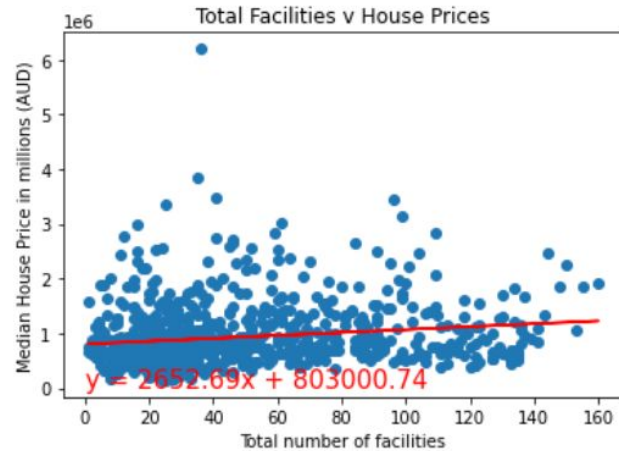
The top five suburbs with the highest median prices for 2022 are:
 Toorak with a median price of 6200000.0
 Portsea with a median price of 3850000.0
 Canterbury with a median price of 3490000.0
 Brighton with a median price of 3450000.0
 Flinders with a median price of 3342000.0
 The median price overall was 765000.0

	A	B	C	D	E	F	G	H	I	J	K
1	Suburb	Place_id	commercial	catering	education	entertainment	healthcare	public_transport	office	nature	total
2	Abbotsford	511d4f159	1	20	4	6	4	20	20	6	81
3	Aberfeldie	5104c2f3f	0	6	4	1	0	0	0	2	13
4	Aintree	51c04b5fb	0	1	2	0	0	19	0	10	32
5	Aireys inlet	5161a5828	0	6	1	0	1	4	0	20	32
6	Airport west	5195e6a09	1	8	3	1	4	20	0	1	38
7	Albanvale	5109eef60	2	1	1	0	0	0	0	0	4
8	Albert park	5188ee62c	4	20	20	20	20	20	20	20	144
9	Albion	5189168f4	0	5	2	0	0	5	1	3	16
10	Alexandra	51107a36a	0	7	4	2	0	0	0	20	33

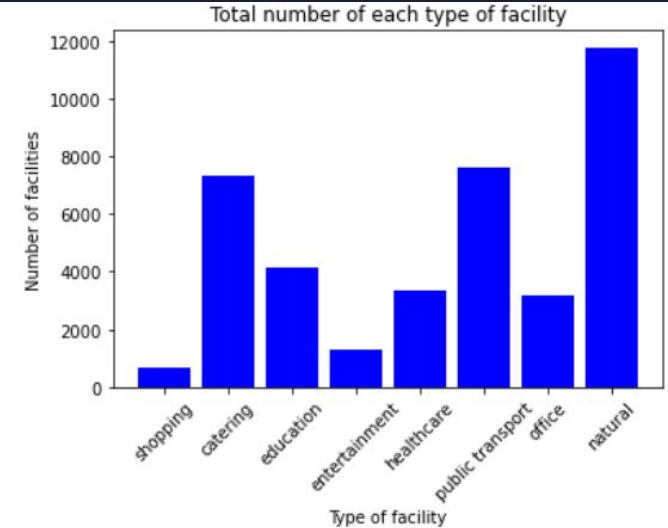


Facility categories: shopping malls, catering, education, entertainment, healthcare, public transport, office, and nature.

Oormi: Assessing the Impact of the number of facilities and their type on the median house price of a suburb.

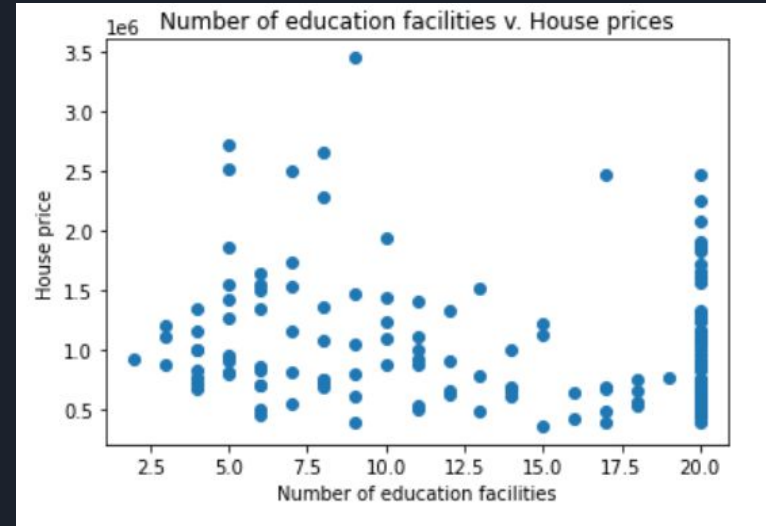
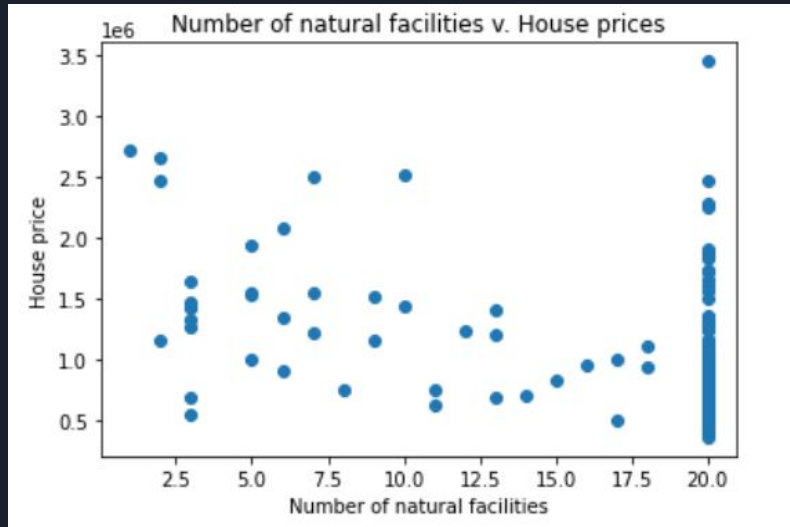


The correlation coefficient between house prices and the total number of facilities is 0.16 (slightly positive; very weak)



Highest: natural
Lowest: shopping

Oormi: Assessing the Impact of the number of facilities and their type on the median house price of a suburb.





Limitations of the study

Price as it relates to distance and year built in Melbourne was property sold in 2016 and 2017.

Most recent properties developed in dataset is from 2018.

We don't know about the quality of the facilities and how they impact liveability

Weather limitations, no historical data, analysis based on current weather conditions

Geoapify limits to 20 responses per suburb

We just looked at houses. What about apartments, units, etc. that are more popular in urbanised areas?

The data did not cover post-covid impacts to the property market.

These limitations open the opportunity for future analysis.



Conclusions

- House pricing in Melbourne is complex
- There is no relationship between suburban Temperature and median house price
- There is significant correlation between housing pricing and age of building.
- The number of facilities does not strongly correlate with the median house price of a suburb
- House prices vs Melbourne CBD - The analysis suggests house price had a lot of dependencies and not solely based on one factor.
- Supply and demand? Oversupply of properties with not enough buyers can bring the prices down.



Data Sources

- Property prices 2012-2022:
<https://www.land.vic.gov.au/valuations/resources-and-reports/property-sales-statistics>
- Geoapify API: <https://apidocs.geoapify.com/docs/places/#about>
- Open Weather API: <https://openweathermap.org/api>
- Property Sales: Melbourne
City: <https://www.kaggle.com/datasets/amalab182/property-salesmelbourne-city?select=Property+Sales+of+Melbourne+City.csv>
- <https://www.realestate.com.au/news/australias-sought-suburbs-2016/>