

# ***REAL ESTATE***

## IN VICTORIA IMPACTED BY COVID-19

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### Group 38- The Six Dimensions

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# Introduction

➤ **Project background**

- ✓ COVID-19 pandemic spread globally
- ✓ Impact Australia Socially and economically across industries

➤ **Project aim**

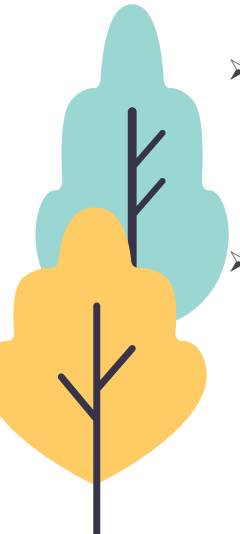
- ✓ Understanding of the impact of COVID-19 on Victorian real estate industry

➤ **Main business consideration**

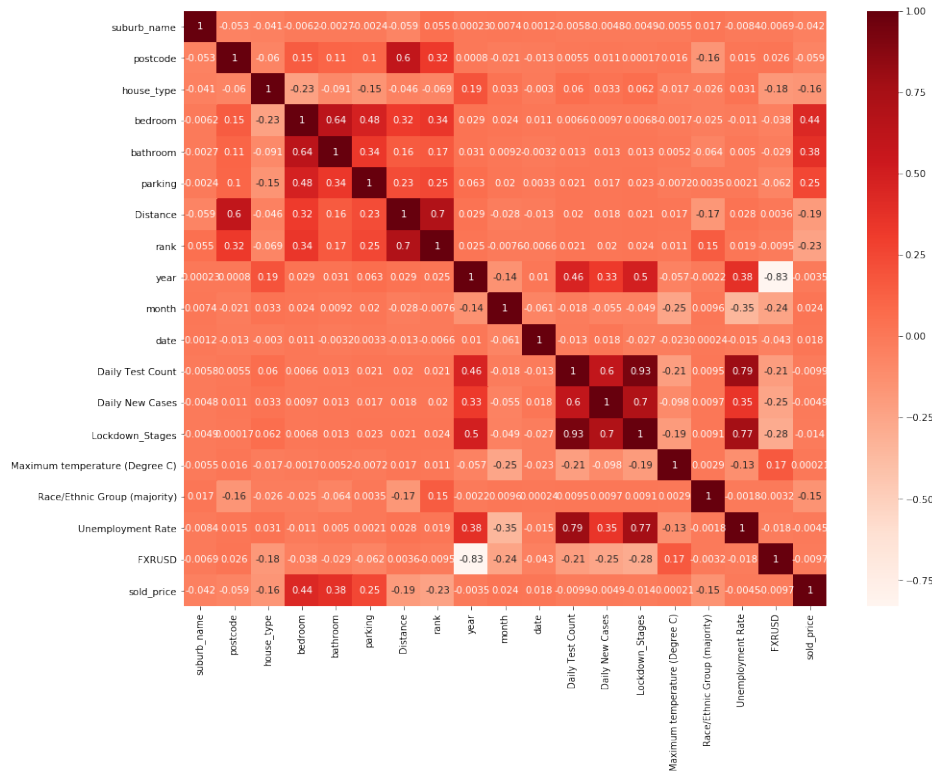
- ✓ House pricing can be related to a range of factors
- ✓ Covid-19 impacting the economy in a syndromic manner

➤ **Potential business values**

- ✓ Business insights for Victorian real estate industry
- ✓ Information to support real estate agents and investors for decision making

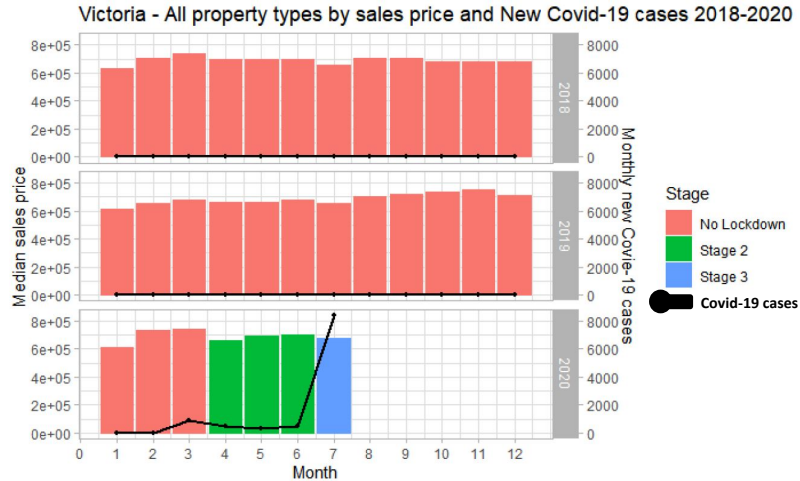


# exploration

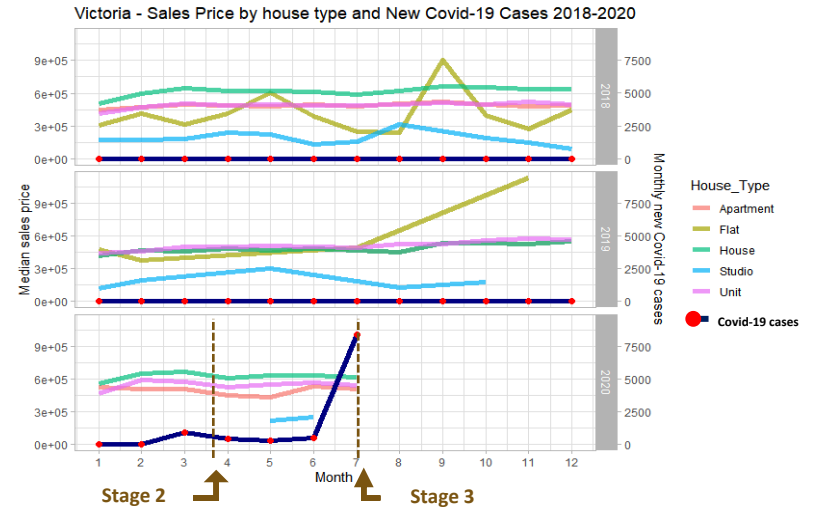


- **Attributes selected & retrieved**
- **Correlation heat map built**
- **Key features**
  - ✓ **Housing sale data from 2018-2020 over suburbs in Victoria**
  - ✓ **Covid-19 daily tests & confirmed cases & Victorian lockdown stages**
  - ✓ **Unemployment rate in Australia & Australian dollar**

# Valuable insights 1 – Impact of COVID-19 on house pricing

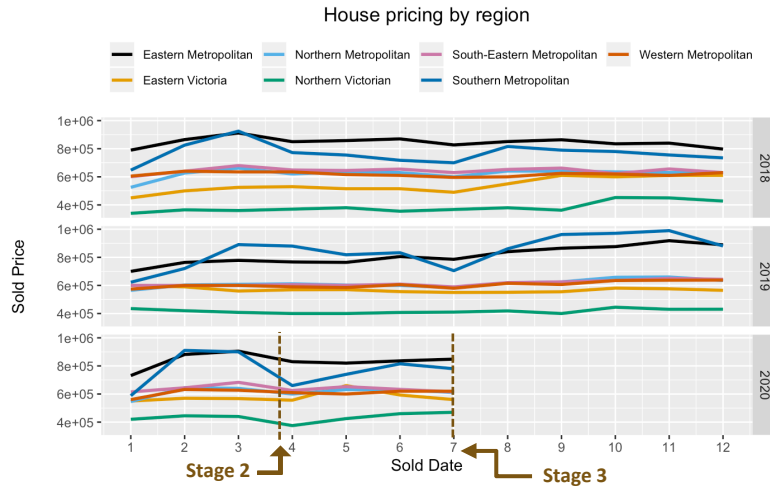


- All property prices **have risen** overall from 2019.
- According to this data, the pandemic has **not affected** house pricing



- House Price **increasing**
- The sale numbers of Studios and Flats **decreasing**

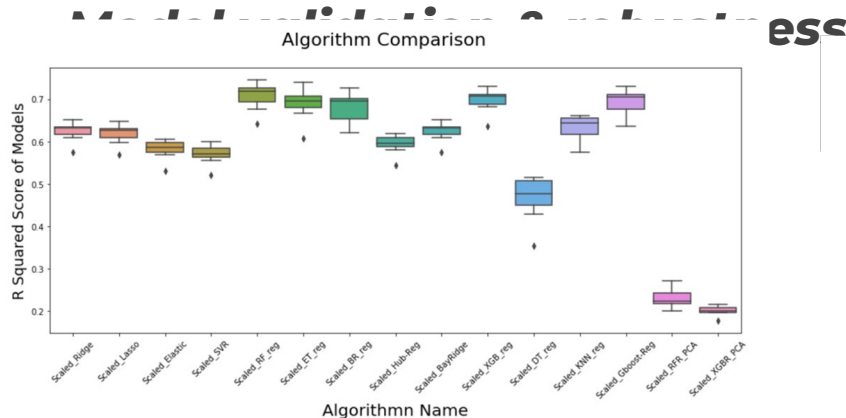
# Valuable insights 1 – Impact of COVID-19 on house pricing (Co



- The trend of house prices by region **has changed** in 2020
- In 2020 compared to 2019, house prices in **Southern Metropolitan have fallen** and house prices in **Eastern Metropolitan have risen**.
- Unemployment rates **↑** due to **influence of Covid-19**
- Despite the **higher** unemployment rate in 2020, house prices were **not significantly affected**.

## Valuable insight 2 - House pricing Prediction model

- **Feature selection algorithm applied**
- **Comparison using different regression models – random forest selected**
- **Model parameter tuning for optimised model performance**



Mean Absolute Error: 131575.95 degrees.  
Accuracy: 84.24 %.

Mean Absolute Error: 128755.57 degrees.  
Accuracy: 84.63 %.

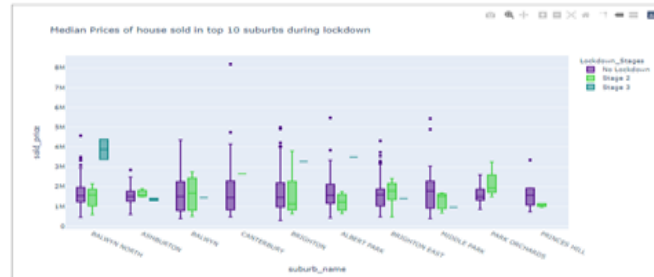
## Business Solution

- Business solution proposed: Website
- USP of this solution is – Dashboard and Web Page
- Dashboard deliverable: house price trending visualisation



Home Dashboard Prediction Team

### MEDIAN HOUSE SOLD PRICE DURING LOCKDOWN STAGES IN TOP 10 SUBURBS



## Business Solution (Cont.)

- **Webpage deliverable:**
- A robust model
  - Variables (related to Covid-19) considered
  - House price prediction on a certain date

Daily Test Count

Daily New Cases:

Daily New Count

Lockdown Stage: No Lockdown ▾

Maximum Temperature on selling date:

Temperature

Race/Ethnic Group(majority in that suburb):

Afghani ▾

Unemployment Rate:

Unemployment

Foreign Exchange Rate(with USD):

Exchange Rate

Predict House selling price

House Price is \$ [741636.31079872]





## Summary

- Understand the impact of COVID-19 on real estate industry
- Victorian house pricing over COVID-19 pandemic investigated.
- Business solutions- Website
  - ✓ Dashboard
  - ✓ Prediction model
- Recommendations
  - ✓ Forecasting of house prices for next 3 months.
  - ✓ Integrating an auto-update of dashboard