



# DATA EXPLORATION ON AIRBNB MELBOURNE

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CHAUNG HE

# 01

## Introduction

In the rapid development of the past few years, Airbnb has become an important platform that cannot be ignored in the short-term rental market around the world, as well as a barometer of the travel market.

## Quick facts about Airbnb

**5.6M+**

Airbnb listings worldwide  
as of June 30, 2021

**100K+**

cities with active Airbnb listings  
as of September 20, 2021

**220+**

countries and regions with Airbnb listings  
as of June 30, 2021

**4M+**

Hosts on Airbnb  
as of June 30, 2021

**1B+**

Airbnb guest arrivals all-time  
as of September 20, 2021

# 02

## Data analysis

Through data mining and analysis, we can know the basic situation of Airbnb operations in Melbourne, to provide some essential insights for hosts who have already operated Airbnb or plan to run Airbnb business in the future.

## Quick facts about Airbnb Melbourne

**18,367**

Airbnb listings Melbourne  
as of 08 September 2021

**11,866**

Number of Airbnb hosts in Melbourne  
as of 08 September 2021

# Top 10 hosts own the most listings

Host name	listing number		
Valeria	144		<b>Valeria</b> Victoria, Australia  Verified
MadeComfy	120		
Advante Homes	77		
Kim	70		
Paul	67		
Eachann	64		
Beyond A Room	61		Hi, my name is Valeria. My husband Ben and I own and manage a number of upmarket guesthouses located... <a href="#">read more</a>
Boutique Stays Accommodation Group	61		
Shahrukh	58		
Bruce	56		371  Reviews Avg. rating

## Top 10 hosts with the most listings

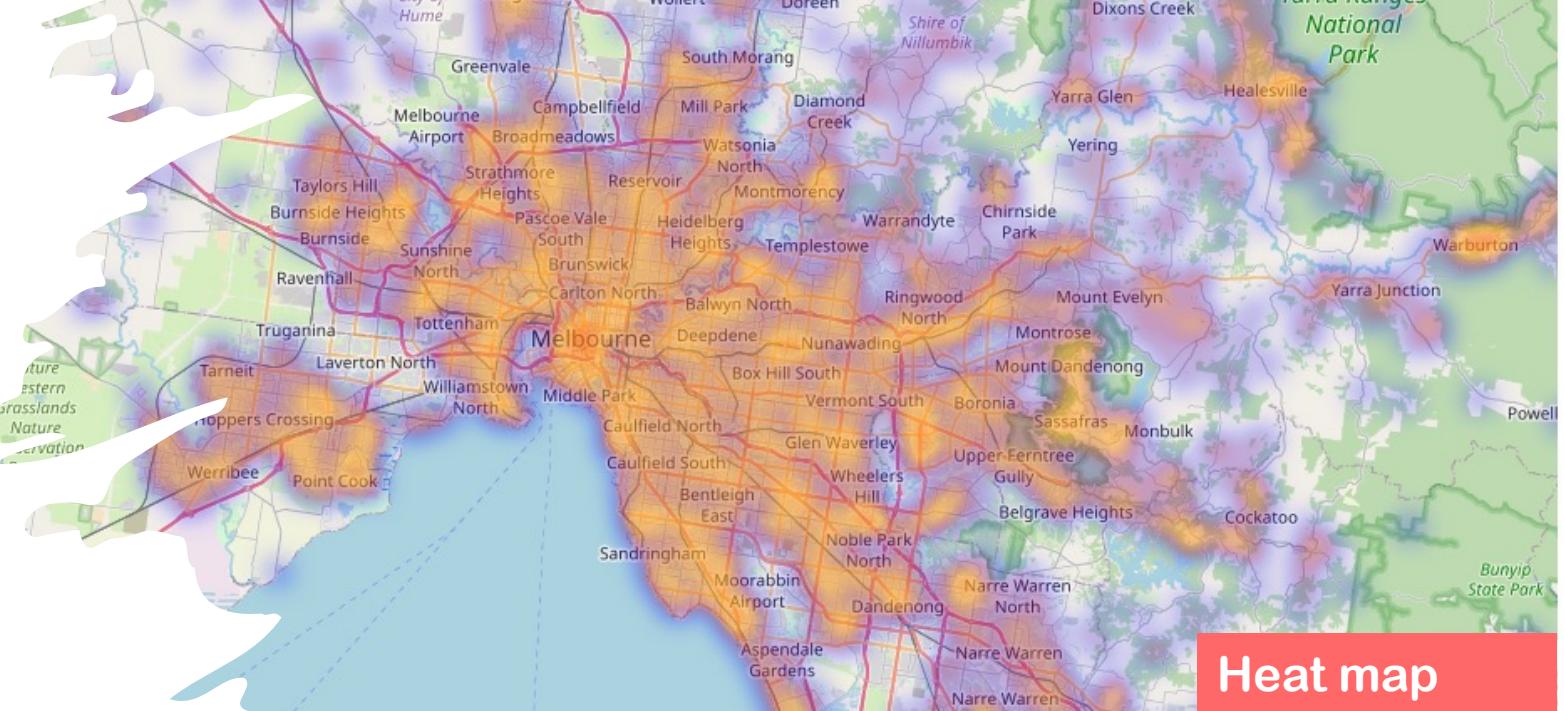
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With the development of the market, more and more professional Airbnb management companies and companies operating on behalf of the host appear

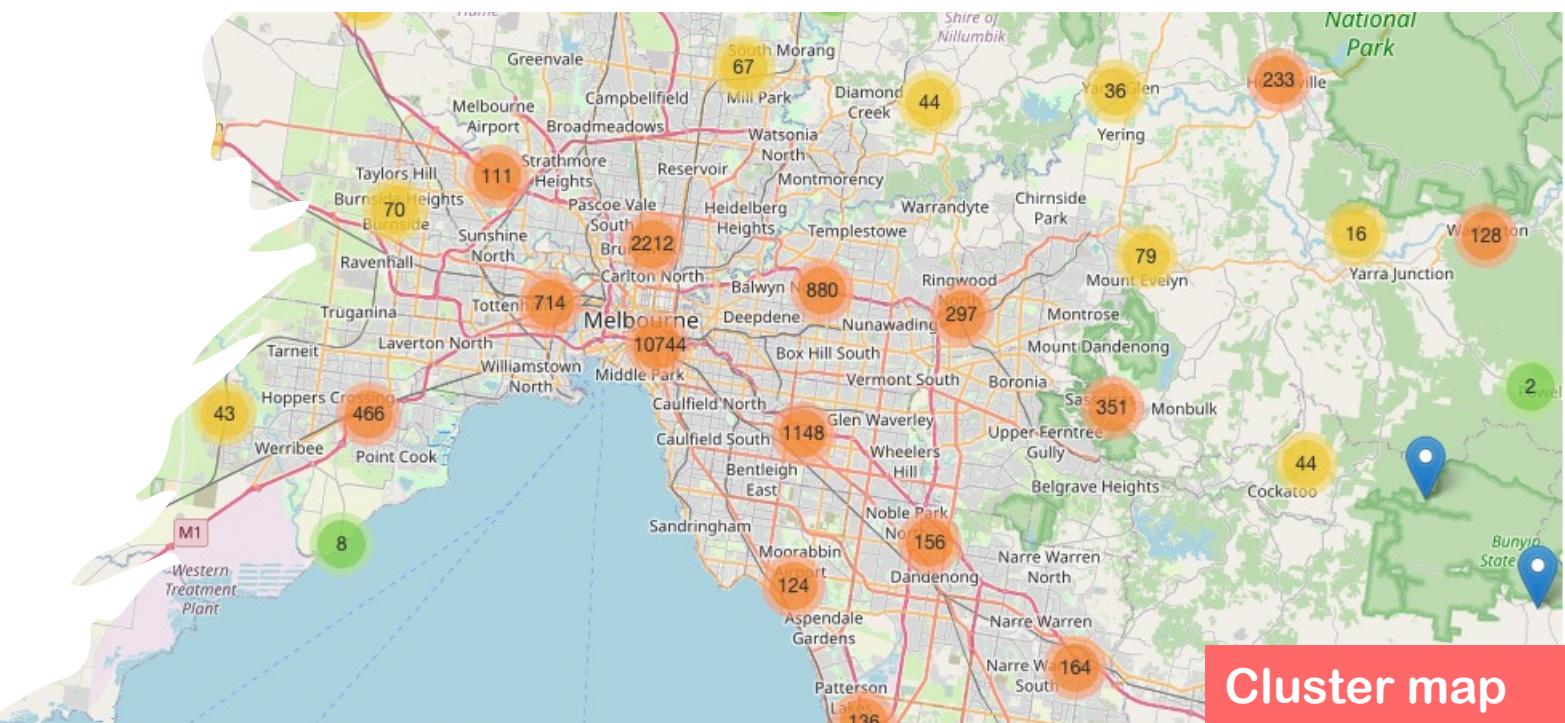


# Map visualization

Airbnb's listings in Melbourne are mainly concentrated in the city area and major tourist attractions.



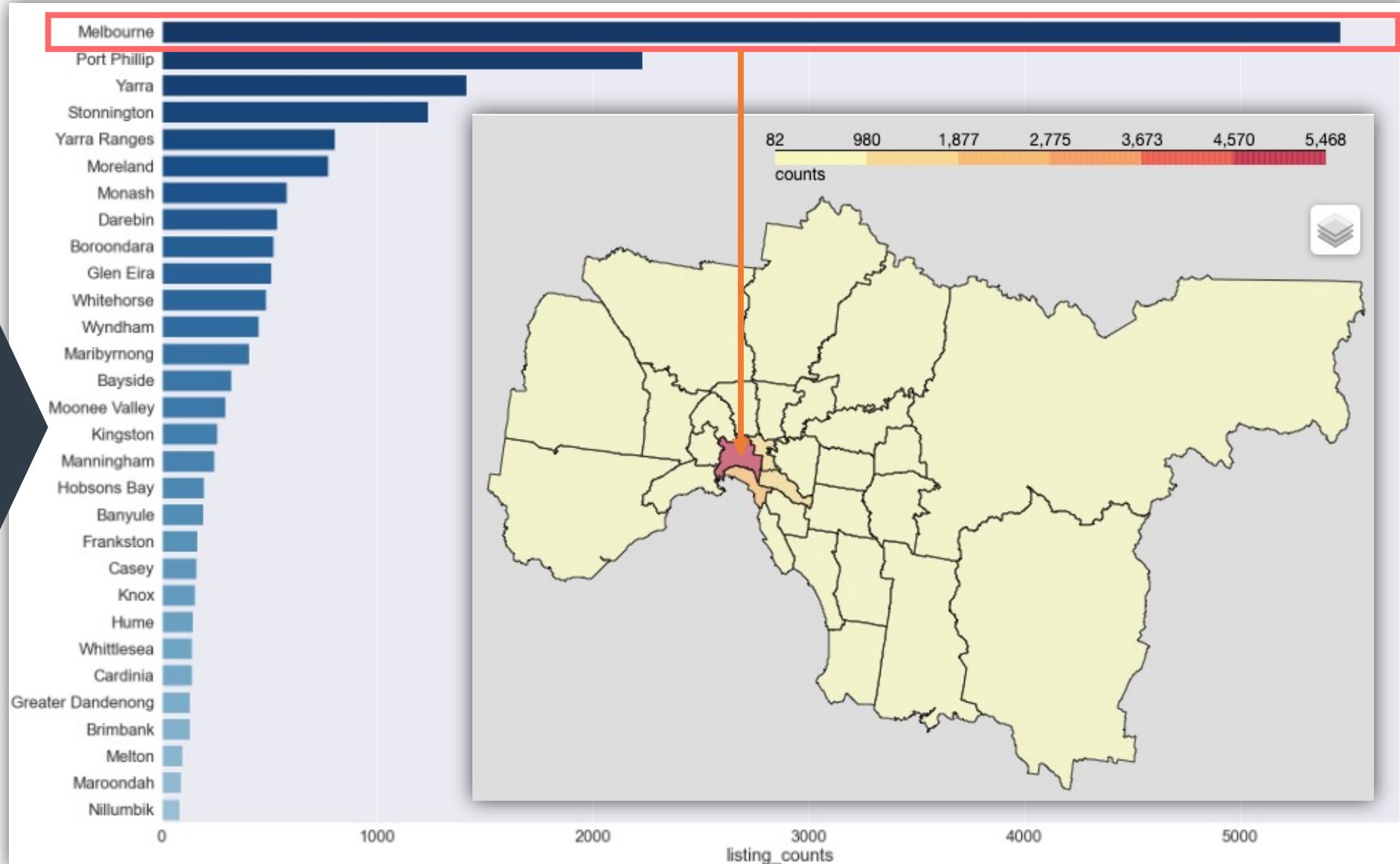
Heat map



Cluster map

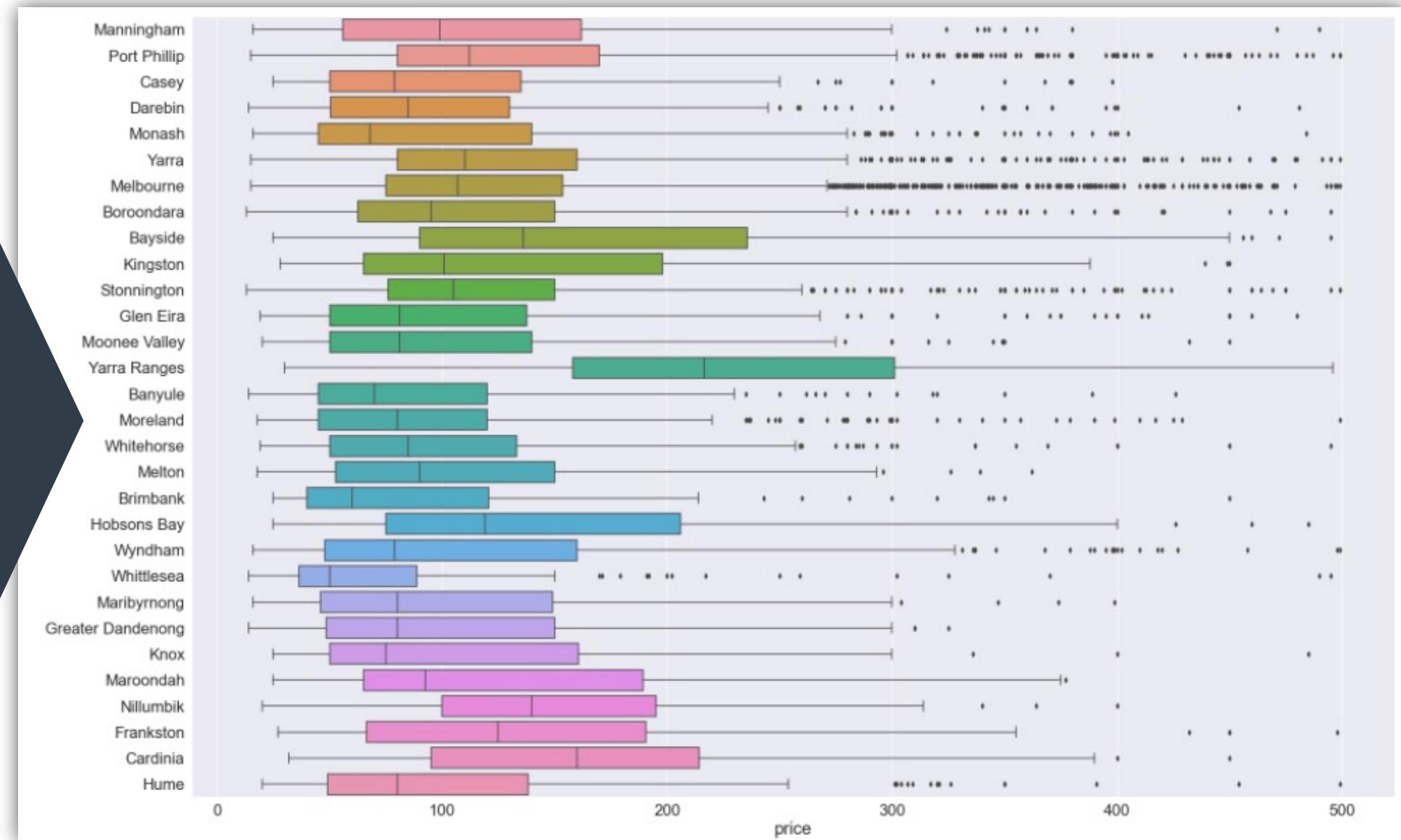
# Ranking by number of listings

The Melbourne city area has most of the listings, and the top 4 areas are also next to the city area.



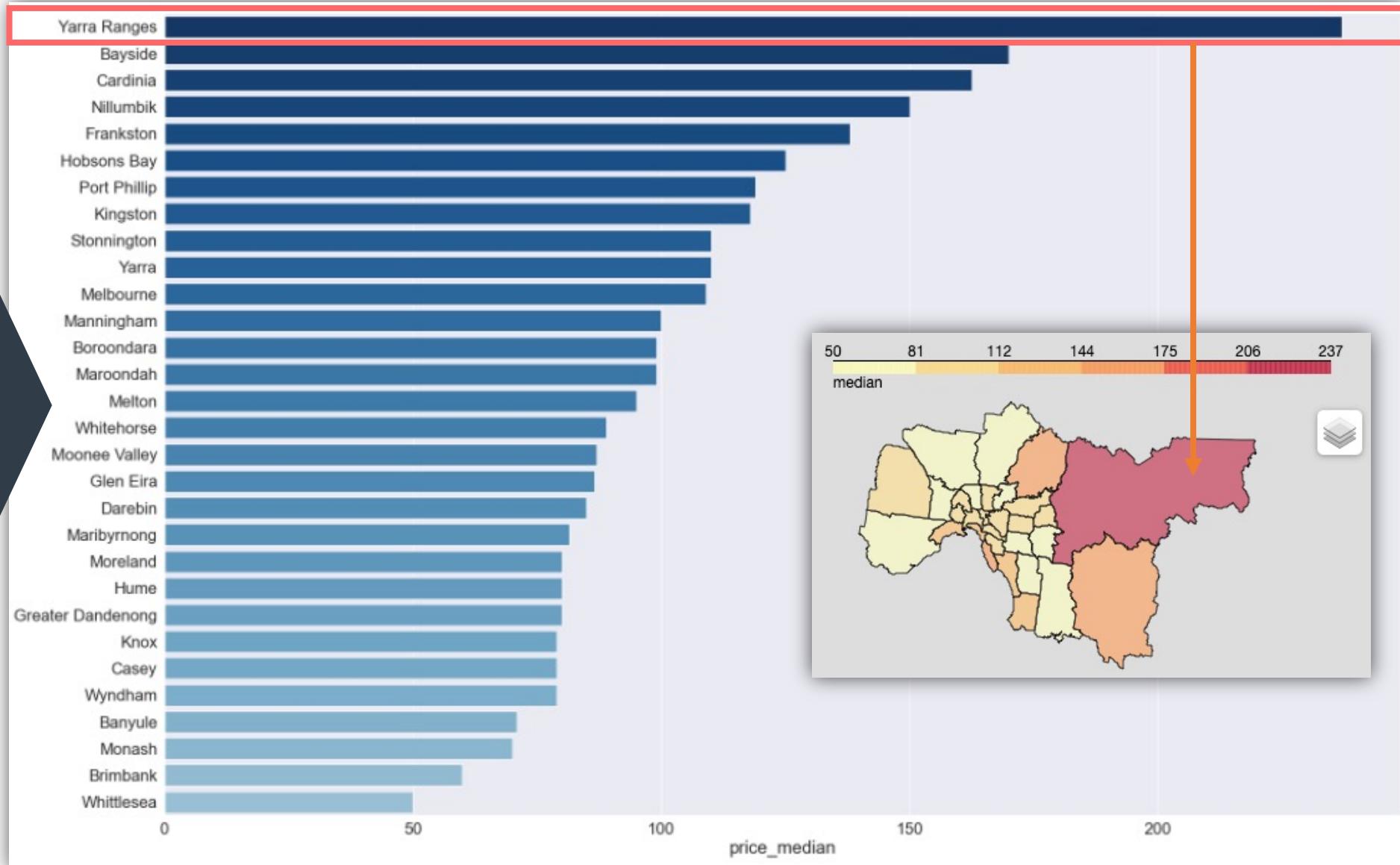
# Median price in each suburb

Airbnb's listing prices in most parts of Melbourne are between 50-150 Australian dollars. However, the prices of listings in Yarra Ranges are generally higher than those in other suburbs.



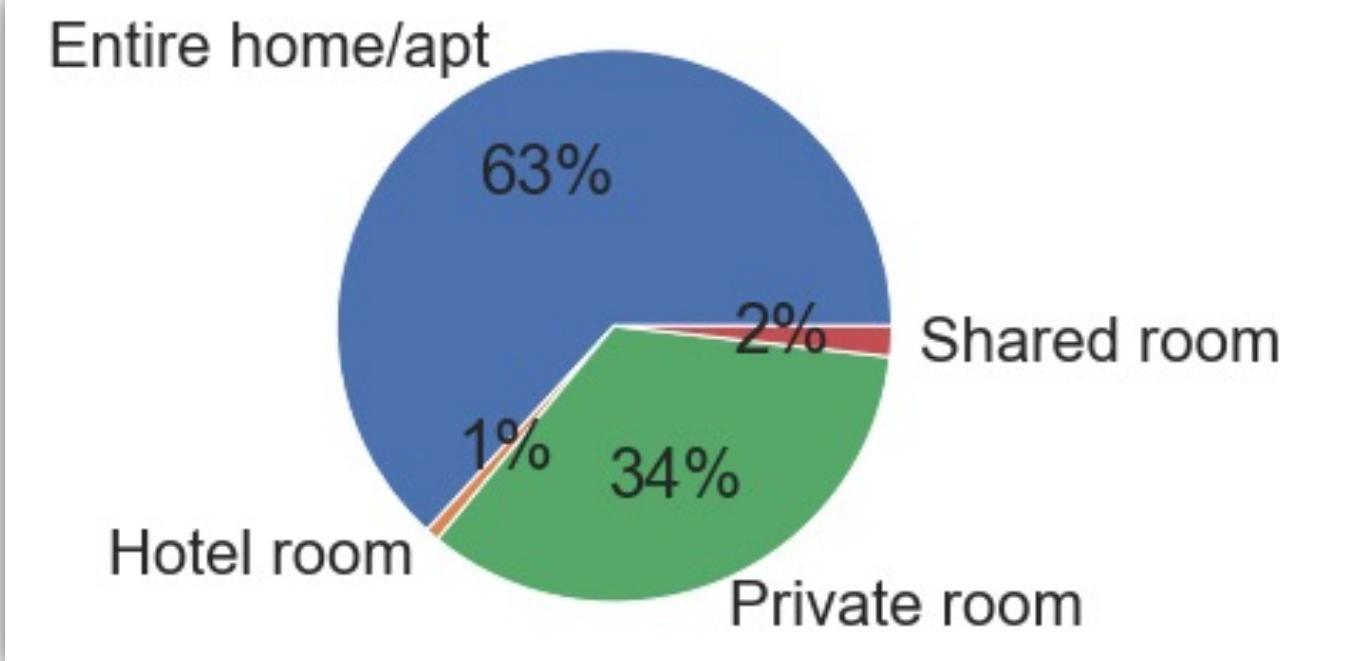
# Median price ranking

Yarra Ranges has the highest median rental price. This place has attractions such as Puffing Billy Railway, Dandenong Ranges National Park, etc.



## Room types

Most Airbnb room types in Melbourne are entire home or entire apartment, followed by private room

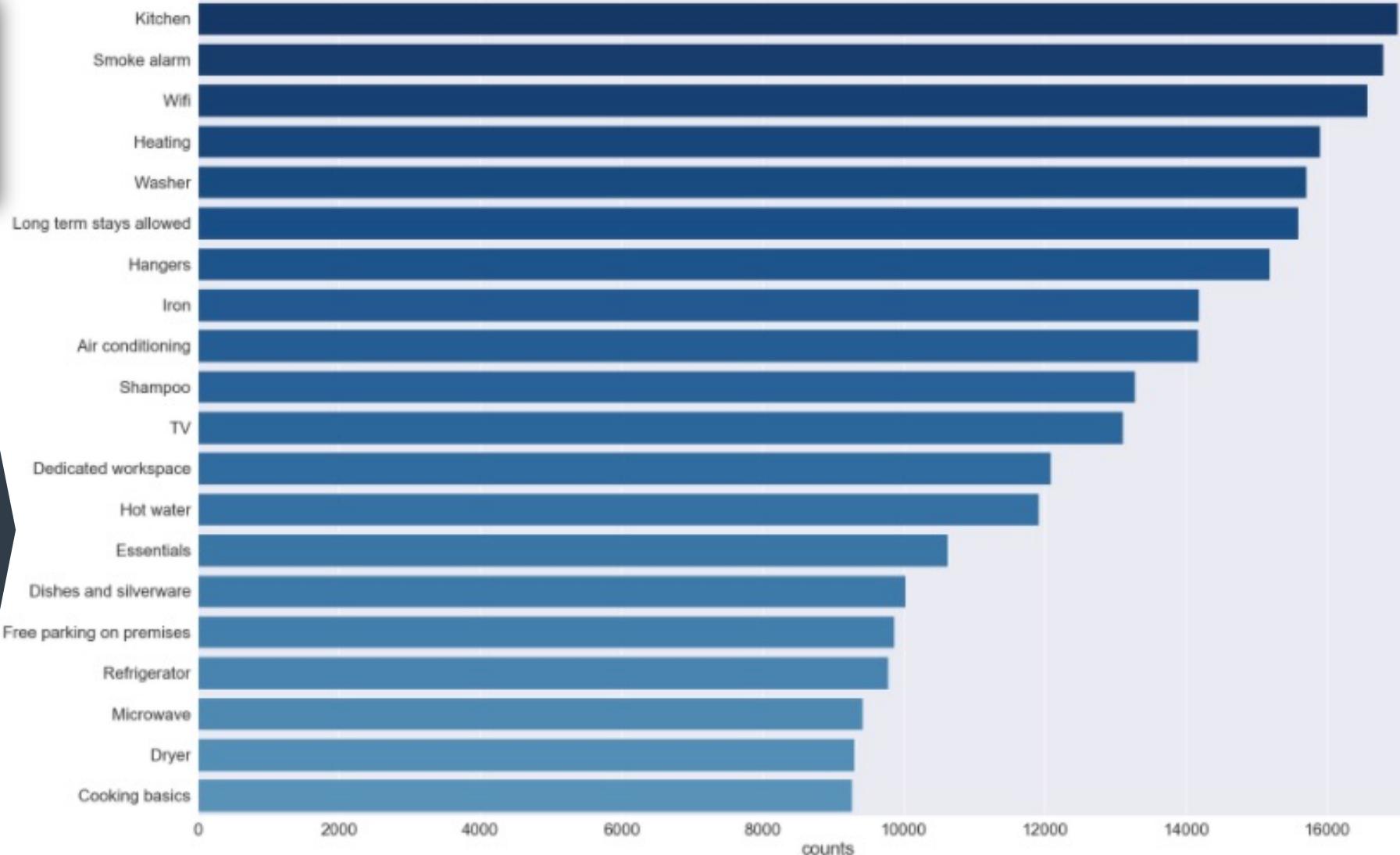


# Amenity's number ranking

## What this place offers

 Beach access – Beachfront	 Kitchen
 Wi-Fi	 Free parking on premises
 Pool	 TV with Standard cable
 Lift	 Washing machine
 Air conditioning	 Patio or balcony

Kitchen facilities are ranked first, WIFI, heating and other amenities are also ranked very high.



# The word cloud of listing names

# Southbank Warehouse, Free Parking & Wifi

**★ 4.91 (643 reviews)** ·  Superhost · [Southbank, Victoria, Australia](#)

Unique, Intimately Styled South Yarra Sanctuary

**★ 4.87 (594 reviews)** ·  Superhost · [South Yarra, Victoria, Australia](#)

RIVER VIEW\*2BR2BA+Free Parking&Tram\*City Docklands

**★ 4.90 (306 reviews)** ·  Superhost · [Docklands, Victoria, Australia](#)

**Hosts like to name their listing by room type, location, etc.**



# The word cloud of listing descriptions

Free Parking! Huge balcony! Harbour River view! Free trams in front of the building! Close to everywhere! The brand new apartment with two bedrooms and two bathrooms which is in the perfect location for a vibrant Melbourne with free tram zone, close to CBD, Southern Cross Station, Etihad Stadium, Harbour Town Shopping Centre, Crown Casino, South Wharf Shopping Centre, Exhibition Center, and Woolworths supermarket. It is currently the most sought -after address in Melbourne CBD.(889 Collins street)...

[Show more >](#)

**Hosts like to emphasize room facilities and describe the listing location in the description**



# The word cloud of comments

 <b>Kerry</b> November 2020	Terry's Warehouse Apartment is fantastic . The location is second to none with every part of Melbourne CBD at your fingertips. Check in was effortless and Terry was prompt wit... <a href="#">Show more &gt;</a>	
 <b>David</b> March 2020	Had a great stay at terry's place. Tucked away right behind the main part of southbank.	
 <b>Jamie</b> March 2020	Great place Even better location	



**Guests like to comment on the location, facilities and services of the listing**

# The listing has the most commented in Melbourne

- Good location
- Fair price
- Excellent service

**Southbank Warehouse, Free Parking & Wifi**

★ 4.91 (643 reviews) · Superhost · [Southbank, Victoria, Australia](#)

↑ Share    Save



... Show all photos

**Entire loft hosted by Terry**

4 guests · 1 bedroom · 4 beds · 1 bath



**Entire home**  
You'll have the loft to yourself.

**Enhanced Clean**

**\$110.00 AUD / night** ★ 4.91 (643 reviews)

CHECK-IN Add date	CHECKOUT Add date
GUESTS 1 guest	

<https://www.airbnb.com.au/rooms/2449576>

# 03

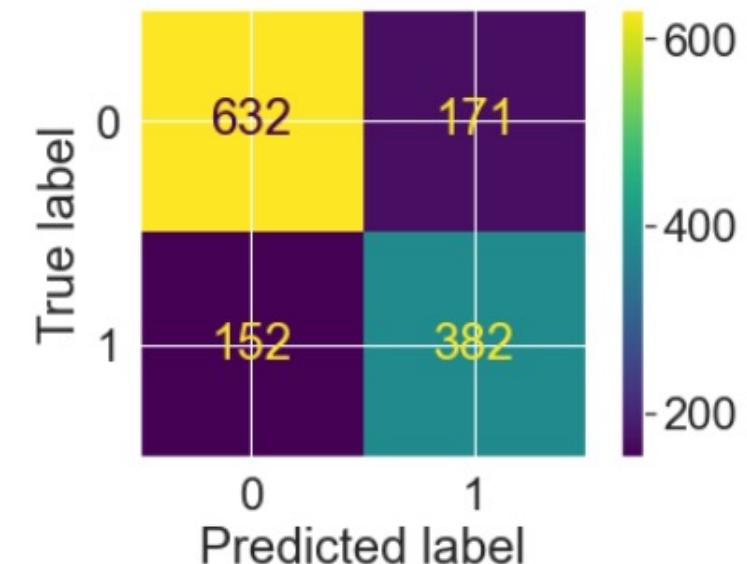
## Machine learning

Use machine learning algorithms to predict what kind of host can become a super host and predict the listing price.

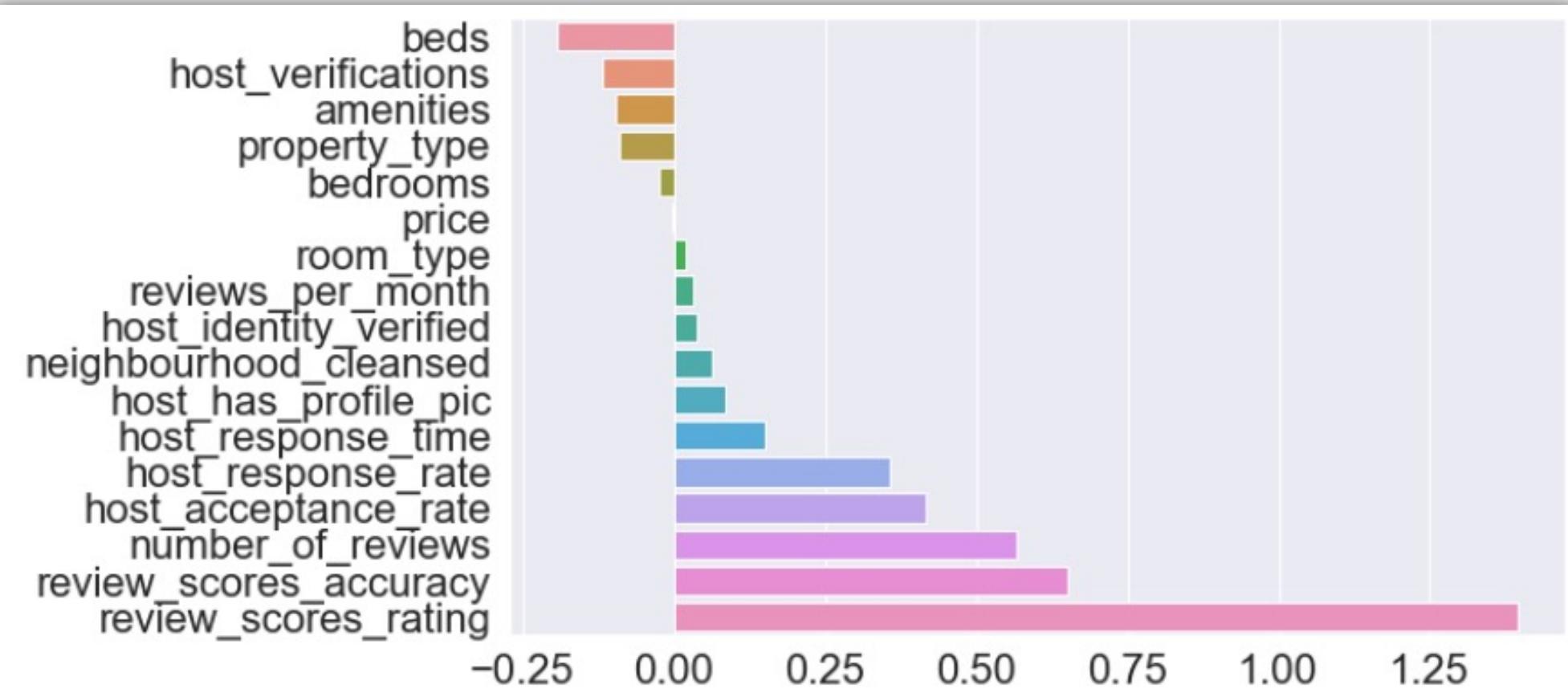
# LogisticRegressionCV

LogisticRegressionCV  
is a classification  
algorithm used to  
predict what kind of  
host can become a  
super host.

	precision	recall	f1-score	support
0	0.81	0.79	0.80	803
1	0.69	0.72	0.70	534
accuracy			0.76	1337
macro avg	0.75	0.75	0.75	1337
weighted avg	0.76	0.76	0.76	1337



# The most important features



Service is more important than facilities

# Machine learning algorithm

RandomForest

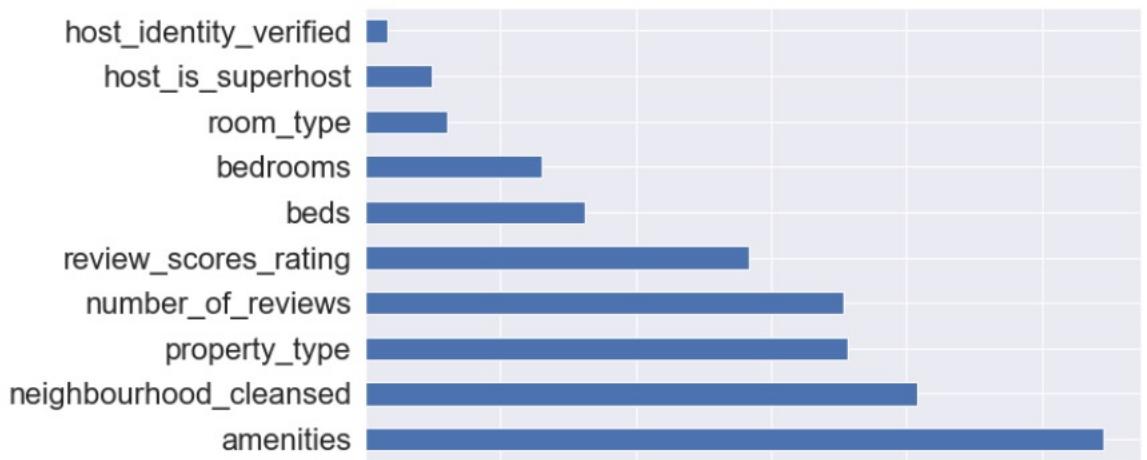


r2\_score = 0.4985

LightGBM



r2\_score = 0.5334



LightGBM Feature importance

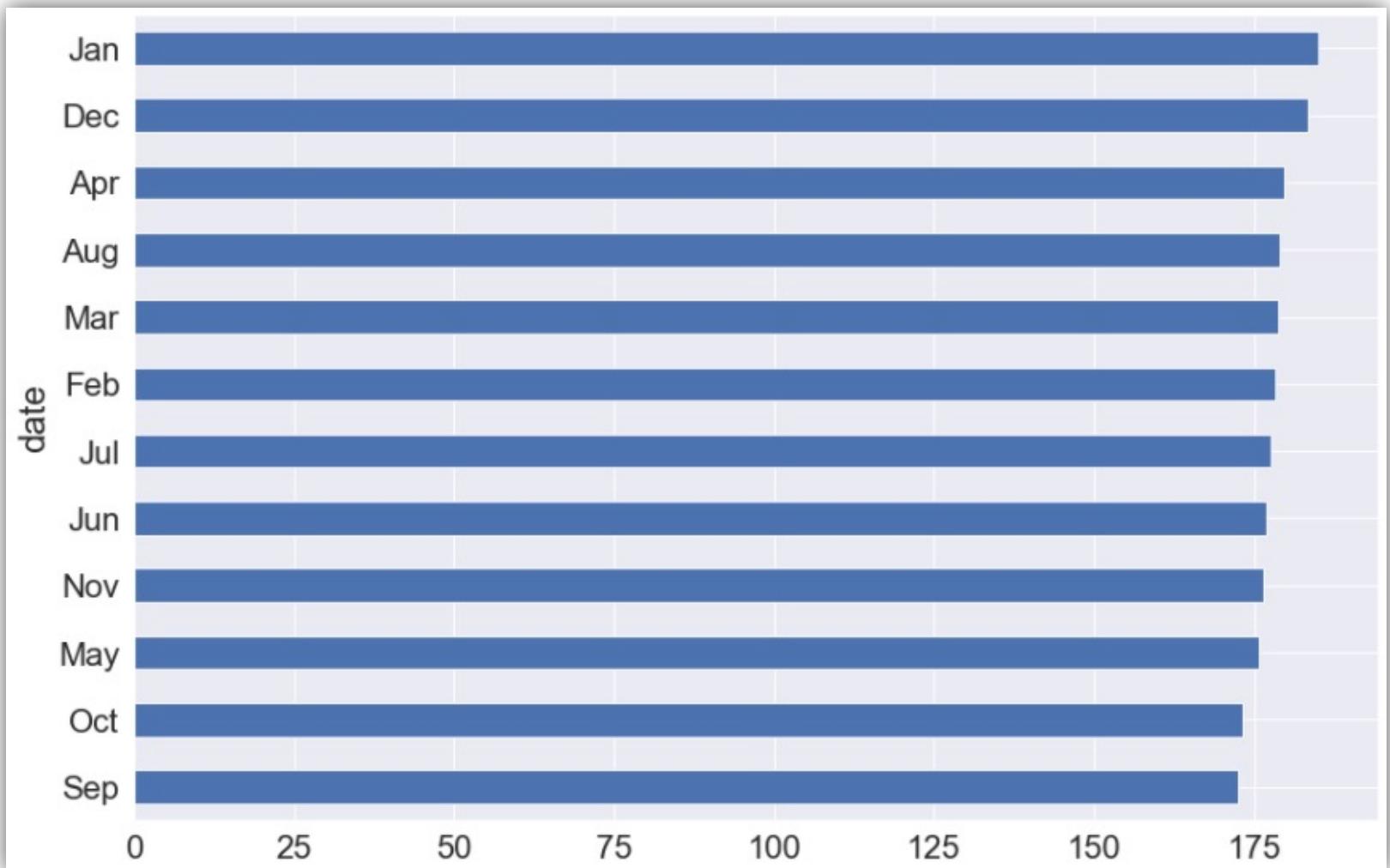
# 04

## Time analysis

We can observe from past data that there is a very strong correlation between Airbnb price and time.

# Average price in each month

December and January are Melbourne's traditional peak tourist seasons, and the average rental price in these two months is also the highest.



## Average price during the week



The average price on weekends will be higher than other days

# 05

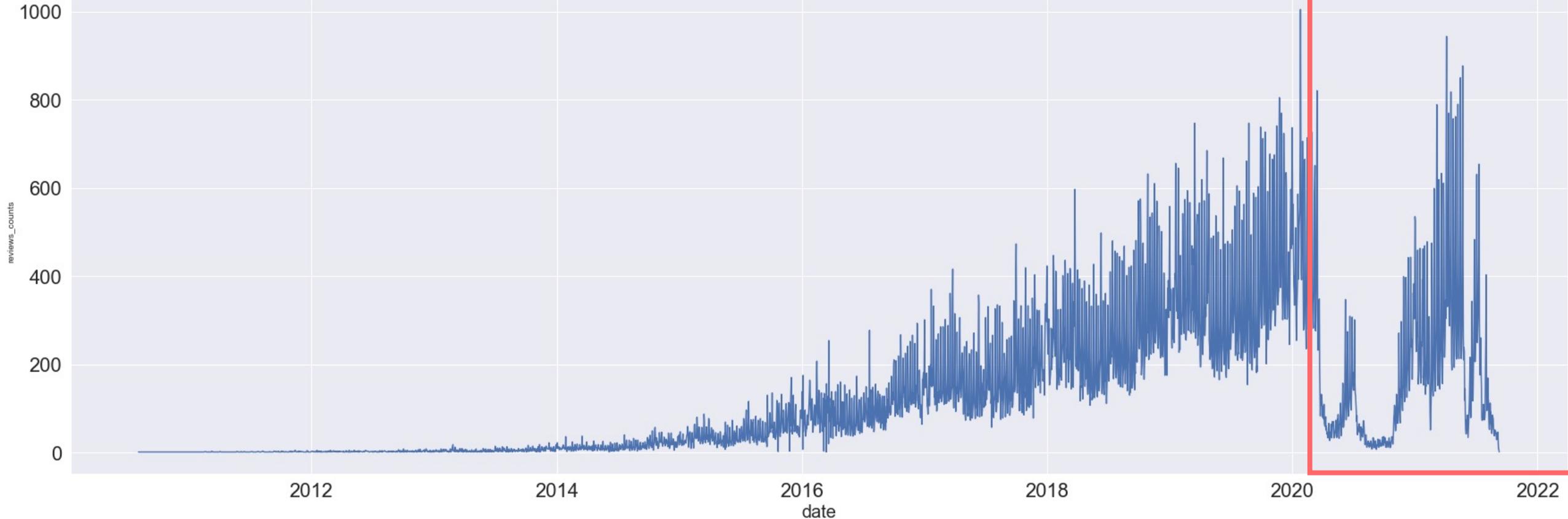
## After Covid-19

The COVID-19 pandemic has greatly impacted Airbnb's business, but we believe that Airbnb's business will recover quickly after the pandemic ends.

# Changes in the number of comments in the past

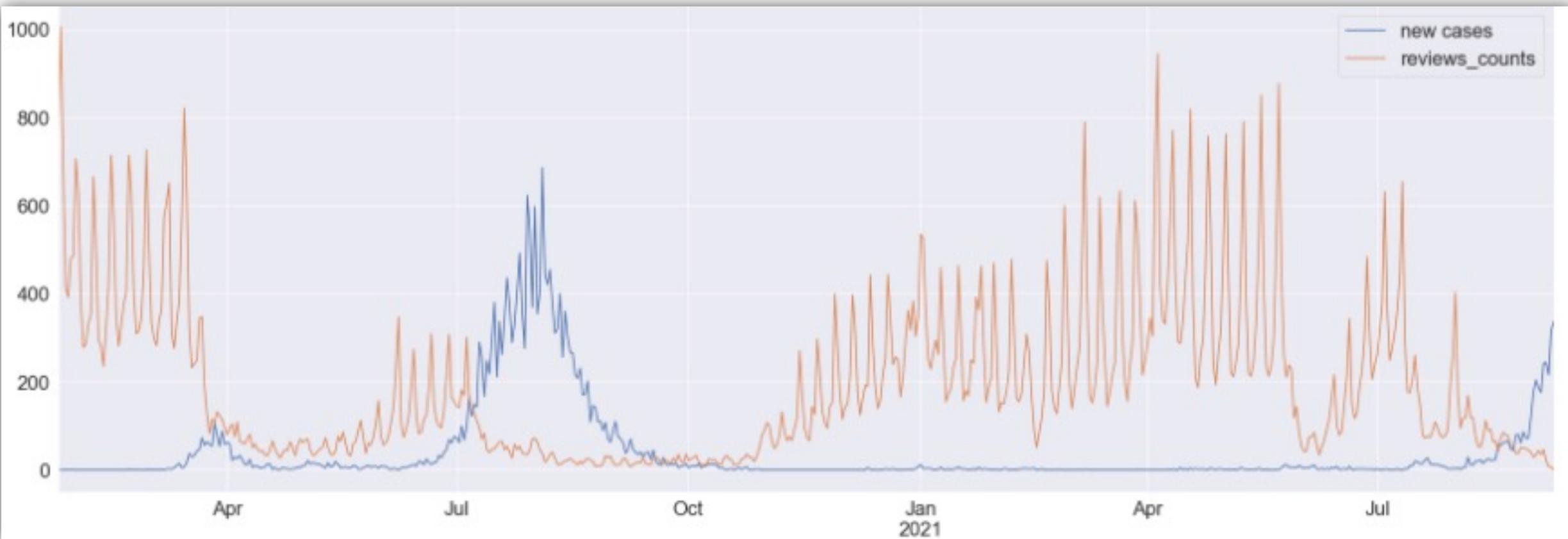
Covid19 outbreak period

Airbnb Melbourne reviews counts



When Covid19 outbreak, the number of Airbnb reviews plummeted

# Number of comments after the COVID-19 outbreak



When the number of new confirmed cases of COVID-19 in Melbourne rises, the number of comments on Airbnb drops

## Future booking



According to the Airbnb calendar data, it is expected that the following December and January will usher in the booking peak.

# Conclusion

## Marketing advice

- Hosts can prepare for the following December and January, such as increase exposure through advertising.
- Set keywords and descriptions according to user preferences to increase search exposure rate.

## Pricing Strategy

- The hosts can adjust the price according to the month and weekend fluctuations to gain more profits.
- The price-setting can refer to the median price of each suburb.

## Others

- The host can become a super host by improving the service level, such as increasing the response rate and responding to customer inquiries as soon as possible.

Thank You