

Understand the impact of Covid 19 on tourism industry

Using Airbnb data as an entry point

Problem:

The tourism industry was one of the world's greatest markets; until the Covid-19 pandemic. It is commonly accepted that the tourism industry suffered greatly from the pandemic. But the following questions are still unclear and will be addressed in this project.

- How is the rate of new COVID-19 cases related to the performance of short-term rental markets? Is this correlation consistent across different countries, states and cities?
- What were hosts' responses to the decrease in booking orders? Did their response (price cut, offering additional amenities, allowing more flexible cancellation policies) boost the rate of orders?

Dataset:

- [COVID-19 dataset](#), which contains almost all useful data regarding COVID-19.
- [Airbnb dataset](#), which contains listing apartments' data in 103 cities. There are 29 cities in the United States across 20 states.

Availability不可以表示房间的occupancy, 因为host可以设置可租日期。不可租可能是因为已经被预定, 也可能是因为host不希望那个时候出租。

Proposed Solutions.

根据Visualization中提到的, 使用minimum stay, and number of reviews to estimate the occupancy rate.

For the first problem, we propose to use the availability attributes in the data. Average availability is regarded as a measurement of tourism industry performance in this city. The regression model trained based on data from the past three years will be used to predict the performance for this year without the covid-19 pandemic. Compare these two results, we could get to what extent the tourism industry is influenced by the pandemic.

We propose to check whether the correlation is similar across different countries, states and cities by applying the methods mentioned above to different cities' data.

As for the second problem, the attributes price, amenities and cancellation policies will be used. We mainly focus on case study for this problem. Instead of looking at the average for the whole city, we will dig deep into certain hosts to study what strategies he/she used after the pandemic and whether it worked.

We proposed to use such methodology to get both top-down and bottom-up information. It is expected to help us better understand the impact of this pandemic on the tourism industry.

Real-word Applications:

The understanding gained from this project will help both governments, Airbnb Inc. and Airbnb hosts. A fresh wave of COVID-19 is expected this Winter, and insights into how

and when tourism is impacted with changing COVID-19 cases can help in the strategic reopening and closing of hotels and apartment services. Governments could give subsidies to the tourism industry according to our study and the predicted number of COVID-19 cases in the region. Airbnb could implement certain actions to cut the service fee for hosts in severely impacted areas, to attract more tourists and more hosts. While Airbnb hosts will know which methods could boost their booking rate and which won't.

Timeline:

Steps	Estimated completion time	Person in charge
1. Combining the datasets	0.5 week	Haoyuan Cao
2. Case study.	1.5 week	Haoyuan Cao
2. City-level analysis. & Country level analysis	2 week	Xuehai He
2. State-level analysis.	2 week	Apoorva
3. Visualization	1 week	Apoorva & Haoyuan Cao
4. PPT	0.5 week	Together