



Google Cloud Hackathon

— Business Airbnb Recovery
Under COVID 19

Team MHS

Wenqing Hu

Zhexuan Meng

Boya Sun

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Business Case – policy bans on travel and rentals

Americans have been choosing to limit travel and going out, and some states and local governments have put restrictions on short-term rentals. Airbnb hosts had to adjust their rental strategy or even stop the rental business.

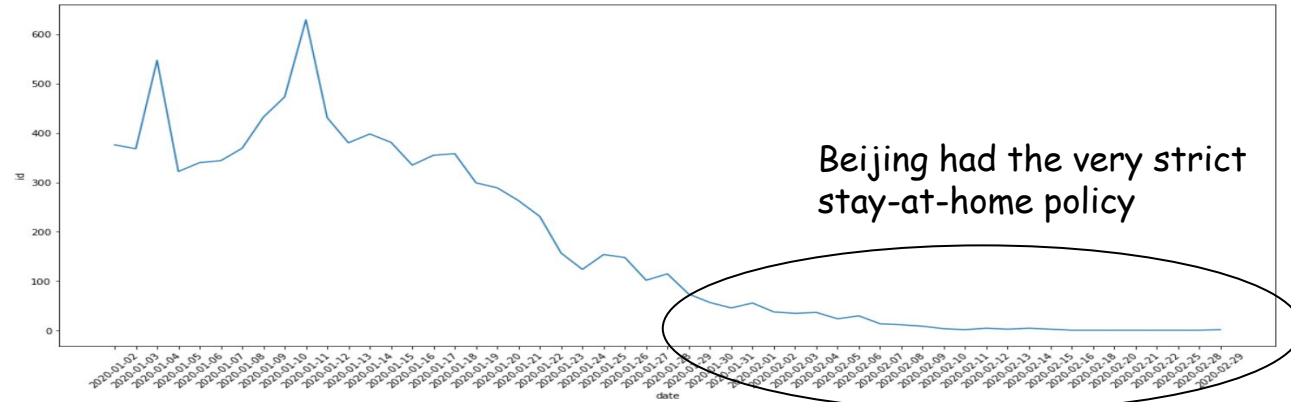
According to the survey conducted by IPX 1031:

- **47%** of hosts don't feel safe renting to guests
- **70%** of guests are fearful to stay at an Airbnb
- **44%** decrease in revenue June-August expected by Airbnb hosts

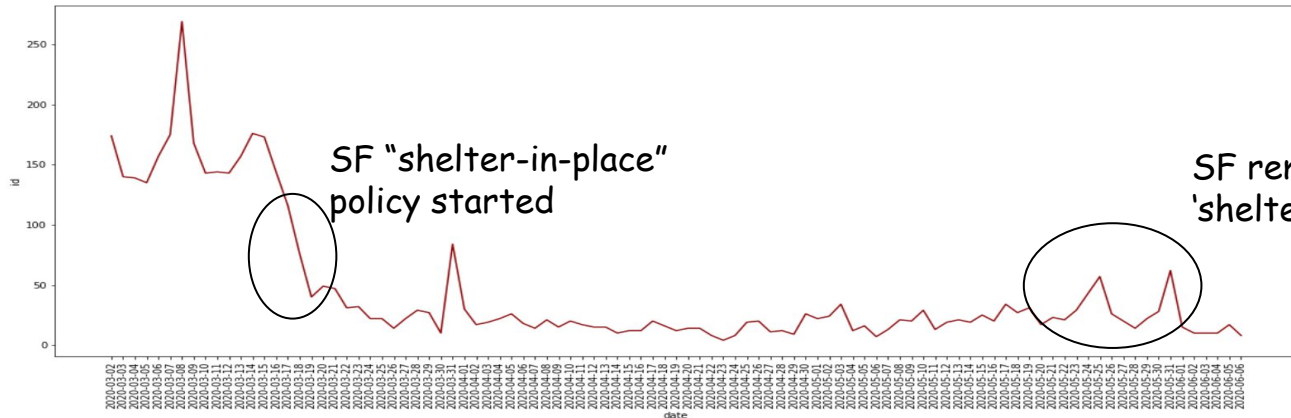


ANADOLU AGENCY VIA GETTY IMAGES

Challenges – globally significant reservation drops during covid-19

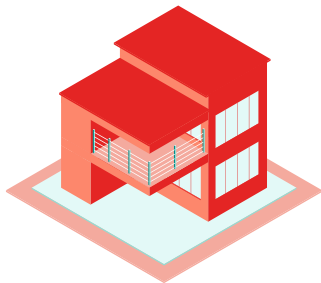


Beijing: Covid-19 in control after March



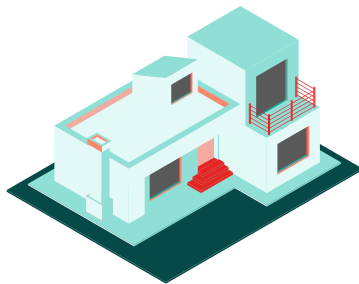
SF removed the 1st phase 'shelter-in-place' order

Seek Opportunity



Markets that haven't recovered

Dominant markets for North America has not recovered yet from the pandemic.



Markets that almost recovered

Some countries have almost recover from the COVID 19 and have resume the trips, like China.

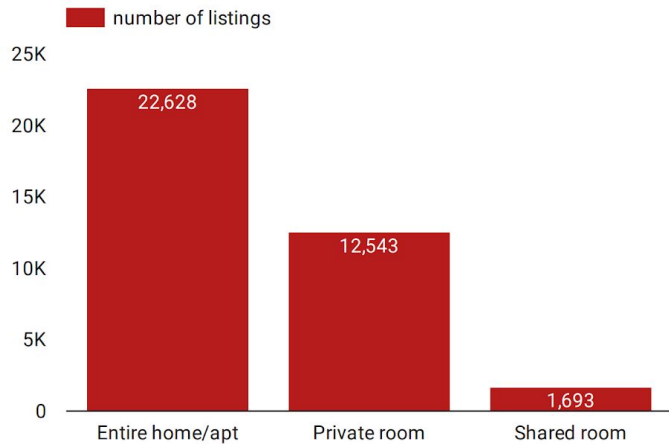
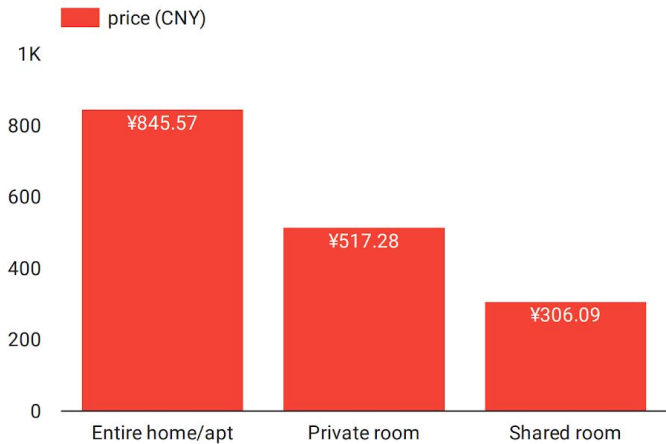
Victory!

BEIJING

availability/year
208.48

total reviews
258,218

median nights/stay
1

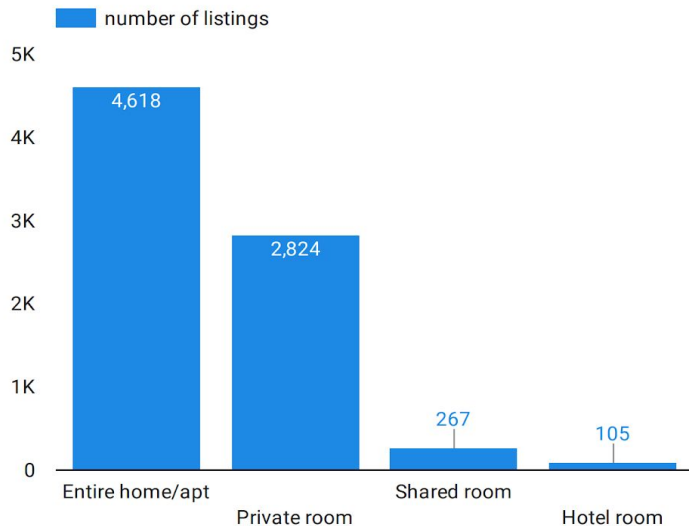
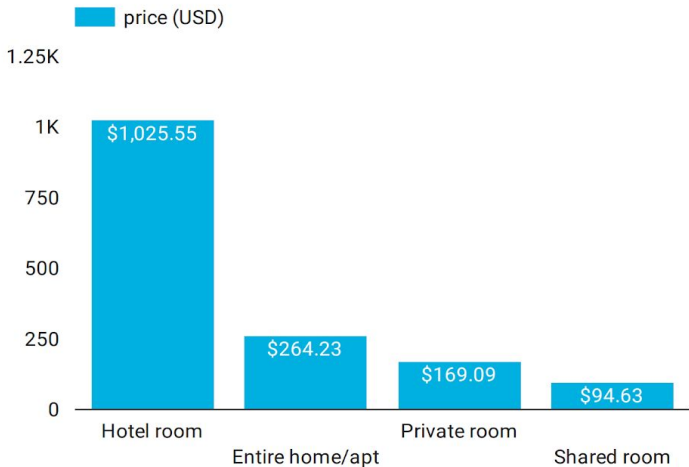


SAN FRANCISCO

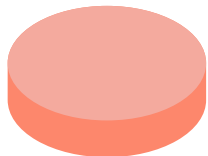
availability/year
169.64

total reviews
346,037

median nights/stay
7

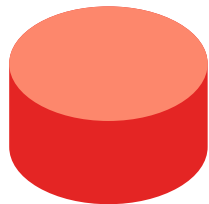


Analytical techniques - GCP



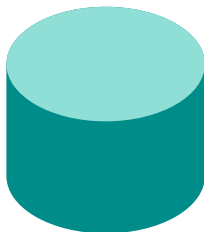
BigQuery

Conducted preliminary analysis on (1 GB, 100+ feature) data and explored the characteristics of datasets



Data Studio

Visualized data based on BigQuery's results



AI Platform

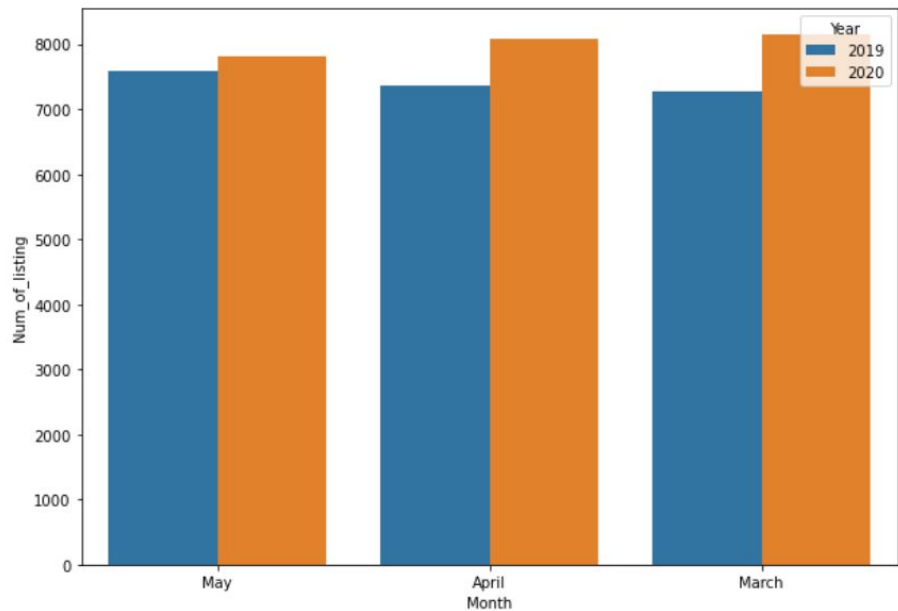
Applied Google Cloud NLP API and Chinese tokenizer Jieba; Used GCP notebook to run topic models



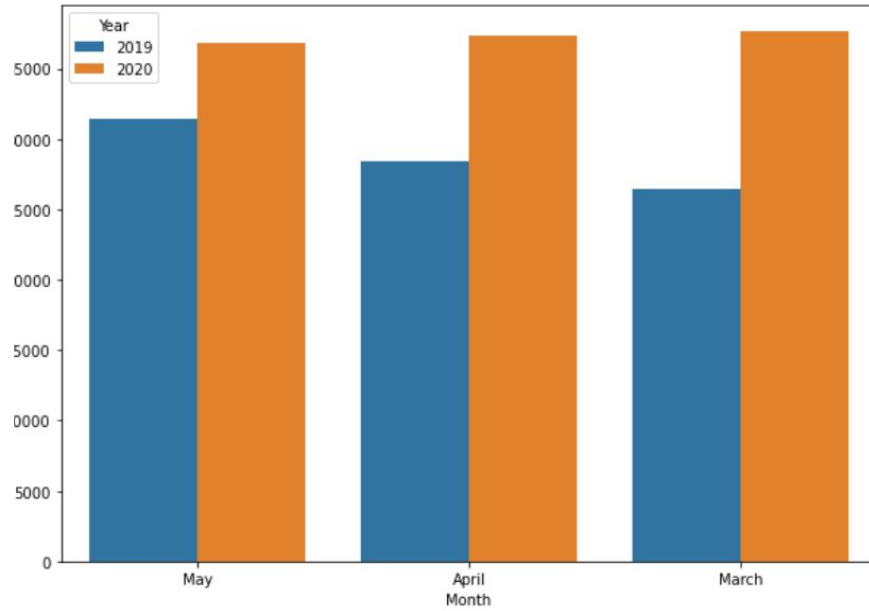
Exploratory data analysis & Model

Beijing vs. San Francisco

Listing number change under pandemic

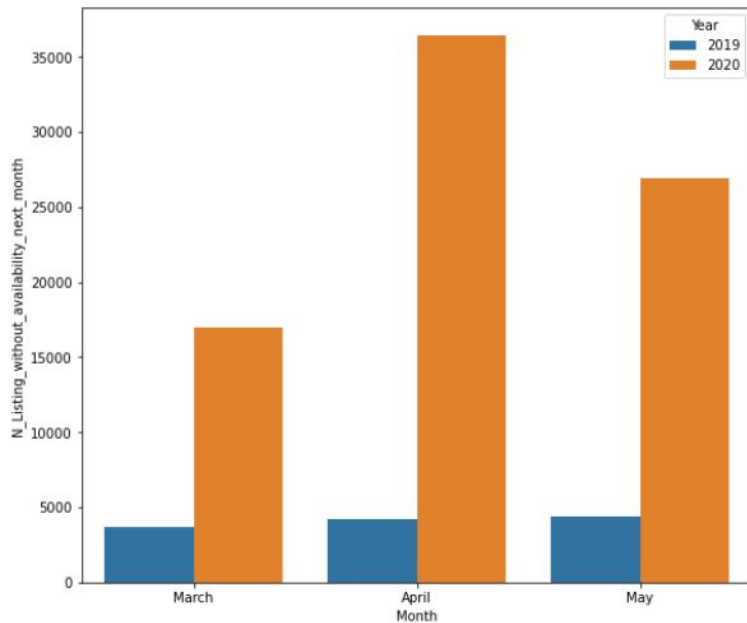


Number of listings in **SF** before and after COVID 19 pandemic

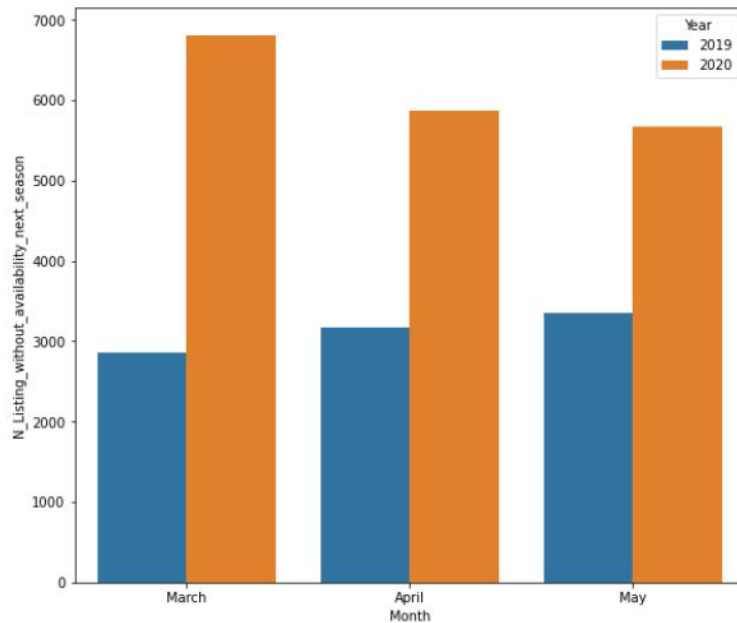


Number of listings in **BJ** before and after COVID 19 pandemic

Beijing - Availability change under pandemic

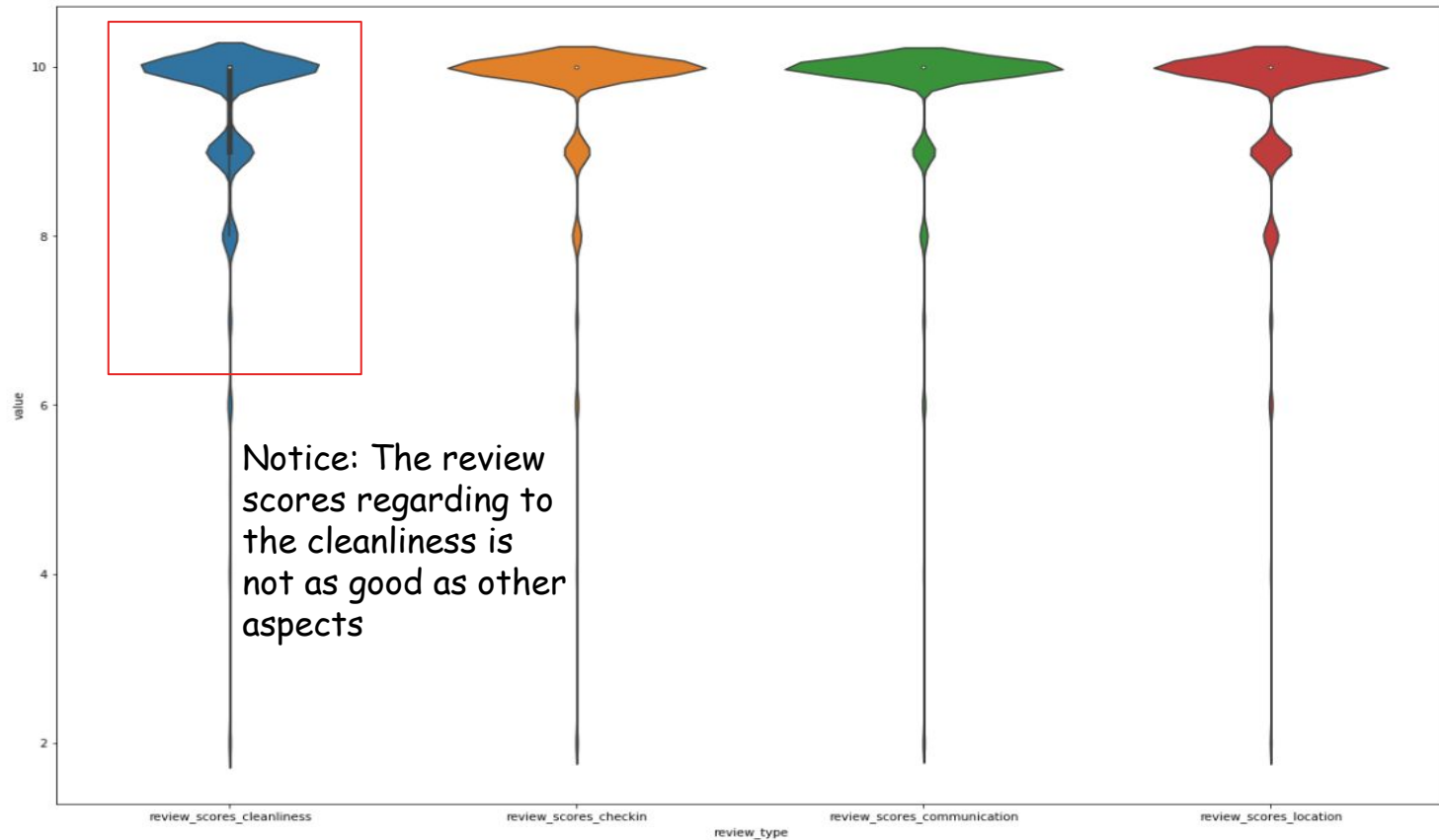


Number of listings with 0
availability in the **next month**



Number of listings with 0
availability in the **next season**

Beijing - review score distribution in 4 aspects



Beijing - topics model



**Host &
Communication**

Topic 1 words

房东, 热情, 沟通, 回复,
贴心, 舒服, etc.
(English: host,
welcoming,
communication, reply,
considerate,
comfortable)

**Facilities &
household items**

Topic 3 words

卫生, 价格, 热水器, 马
桶, 床垫, 沙发, 床单, 枕
头
(English: sanitation,
price, water heater,
toilet, mattress, sofa,
sheet, pillow)

**experience &
cleanness & attitude**

Topic 5 words

性价比, 新, 解决, 建议,
打扫, 味道, 隔音, 态度
(English:
price-performance
ratio, new, solve, help,
suggest, clean, smell,
sound, shower,
attitude)

**Design &
Layout &
Style**

Topic 2 words

住, 民宿, 风格, 朋友, 胡
同, 设计, 用心, 客厅, 睡
(English: live,
homestay, style,
friends, Beijing
Hutong, living room,
sleep)

Topic 4 words

地铁站, 交通, 地铁, 小
区, 便利, 很近, 好找, 步
行
(English: subway
station, transportation,
community,
convenient, near, easy
to find, walk)

**Location &
Convenience**

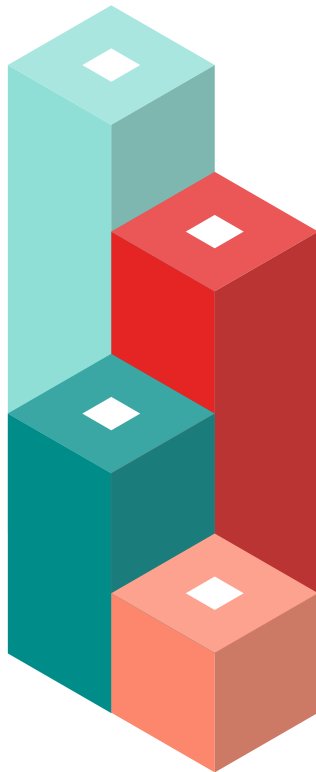
San Francisco – topics model (before vs after)

Before Covid-19

Topic 1: nice, clean, everything

Topic 2: host, space, home, room, neighborhood

Topic 3: place, stay, location, comfortable



After Covid-19

Topic 1: enjoyed, spot, public, kitchen, access

Topic 2: great, place, clean, nice, comfortable

Topic 3: room, bathroom, check, private, kitchen, bed

Topic 4: location, restaurants, convenient, walking, distance

Topic 5: easy, close, quiet

Recommendation for Reopening

Sanitation

Highlight safety and cleanliness score to provide assurance to guests

Domestic Travel

Encourage people to go on nearby trips after lockdown restrictions lift



Cooperation

Work with local medias and platforms to promote campaigns

Countryside Tour

Encourage people to explore countryside spots that are less crowded

THANKS

Do you have any questions?

