

Analysis on Airbnb Data

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Abstract: The newly created sharing economy has revolutionized the way individuals utilize resources. Since its founding in 2008, Airbnb, a web-based service that connects travelers and hosts, has given individuals the opportunity to rent out their homes on a short-term basis. Despite its rapid growth and wide appeal, Airbnb's unique business model has raised challenging questions on how to regulate the home-sharing industry. This paper focuses on two important issues [2] – the effect of Airbnb's short-term rentals on housing supply, the safety and insurance ramifications of Airbnb's operations¹ – and proposes practical regulatory solutions that adequately address these considerations without compromising Airbnb's innovative and unique business model.

1. Introduction

This paper is on the survey [1] done on Airbnb for different cities. Airbnb is an online market place and hospitality service, enabling people to lease or short-term lodging including vacation rentals, apartment rentals, homestays, hostel beds, or hotel rooms.

In terms of awareness — represented here by Google search trends — Airbnb is already approaching the same frequency as mainstream hotel and travel-booking brands, such as Expedia and Marriott. In this paper there are different sections included, it starts from why Airbnb is chosen over other topics and what is the flow chart followed while visualising the data set. Further hardware specification is also discussed. This paper gives different insights on the data set, which shows about what people prefer, how is the business doing and how it can be improved. These insights are important for business purpose. Comparisons and overall satisfaction has been done among various cities.

The Internet coupled with new technology and operations defines the sharing economy, however, the sharing economy also stands on core pillars. The core pillars of the sharing economy illustrate its benefits. These pillars include: digital platforms connecting capacity and demand; transactions offering access over ownership; collaborative forms of consumption; branded experiences driving emotional connection; and understanding an economy built on trust. While some of the pillars are not unique to the sharing economy, the pillars allow for the sharing of more assets.

2. About Airbnb

Airbnb has a huge database of places to stay, whether you fancied renting a beach bungalow in the Maldives, a tree house in Brazil or sharing a space with a local in Brooklyn, they've pretty much got you covered[1]. The places range from the basic to the downright fancy. Airbnbs work particularly well for groups traveling together or even a solo traveler looking for a more local experience. Airbnb is usually accommodation hosted by locals that live in the property or own it. Airbnb gives you the opportunity to rent an entire home or even a room in a shared space and pay by the night, rather than per person. This usually works out a lot cheaper for big groups and having your own space also provides you with a lot more freedom to relax, enjoy each others' company and of course cater for yourself.

With Airbnb you shouldn't expect any amenities or services and with a cleaning fee added on at the end of every booking- you definitely don't receive a turn down service.

2.1 Facts on Airbnb

In less than a decade, Airbnb has transformed how millions of people travel, building a global marketplace around short-term apartment and room rentals. It has also become a real threat to the hotel industry — a rivalry that is likely to intensify as Airbnb continues to expand in popularity. Its growth rate remains impressive. So far this year it has already accommodated more than 50 million “guest arrivals” — a term the company uses to measure each trip by each guest, regardless of length. This puts the company on track to likely pass 100 million this year, up from about 80 million in 2016. People always want to have homes in different cities or places wherever they travel that are why they prefer to have entire home/apt when they travel. This has been visualized for this paper and will be discussed later in this paper.

2.2 Airbnb and its competitors

Airbnb — most recently valued at \$31 billion [1] — is just a fraction of the size of the hotel market. As of March, Airbnb in the U.S. reached about 6 percent of the hotel industry's room supply, 4 percent of demand and nearly 7 percent of its revenue, according to commercial real estate services company CBRE. In general, 64% of consumers believe government regulation is less important than peer regulation in the sharing economy.

That's up several percentage points for each category compared to a year ago. But there still seems to be plenty of room to grow. Half of those who used Airbnb last year used

¹ Services offered by Airbnb

it to replace a traditional hotel stay, according to the Morgan Stanley report. But this is where Airbnb’s efforts to attract business travelers — including partnering with large companies to accommodate their employee travel needs and surfacing “Business Travel Ready” listings² — matter even more. The sharing economy has emerged as an additional supplier of goods and services to those already on the market. As the size of the sharing economy grows, so does the magnitude of its economic impacts. Approximately 70 percent of room nights for the U.S. lodging industry are business stays

3. Flow Chart

To get the insights, data is being sorted first, data is firstly sorted in Excel and any values that are not available is replaced by null. Data in different excel sheets available is first is combined into four excel sheets named as format1.csv, Format2.csv, Format3.csv and Format4.csv³. This data is then stored on ambari and then is put into four tables using Hive query language named as- Airbnb_stage1, Airbnb_stage2, Airbnb_stage3, and Airbnb_stage4 respectively. This is then combined into one master table which is then queried in Tableau to get the visualizations. All Data that is being visualized is from the master table created externally. Files are then loaded in ambari and are used in Tableau.

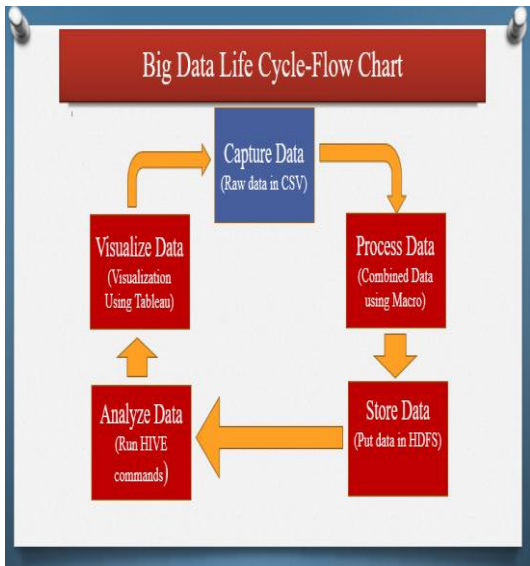


Figure1: Sequence of step followed for Airbnb data Analysis-FlowChart

4. Data Analysis

All the analysis is being done so as to make better decisions. Below are some visualizations which can help Airbnb to take decisions for the growth of business . Totally 4 visualizations are included in this paper.

² Listings include usage, promoted traffic, and growth in revenues
³ Datasets that are uploaded in Ambari

4.1 Sentiment Analysis

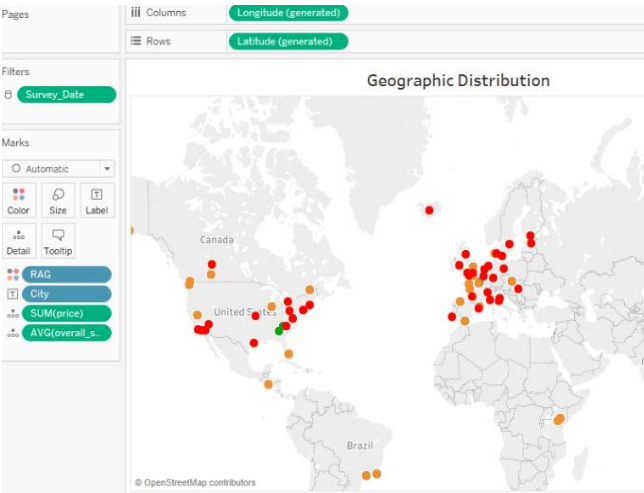


Figure 2: Sentiment Analysis-Overall Satisfaction
 Red Dots- Least Satisfied
 Orange Dots- Medium Satisfied
 Green – Most Satisfied

In this visualization, Geographic distribution with maps is used for getting insights about satisfaction of different cities around the world. Here cities are categorized on basis of least, moderate and most satisfaction. We have used Overall-satisfaction and cities attributes in order to pop up a map of business metrics. Airbnb can use most satisfied cities as reference and can use those business principles for implementing on least and medium satisfied cities. Overall Satisfaction around the globe in which Least Satisfied helps to be focus on cities which needs to be improved for the Better business. Airbnb can work on these decisions and checkout the facility and can work for better.

4.2 Overall Satisfaction

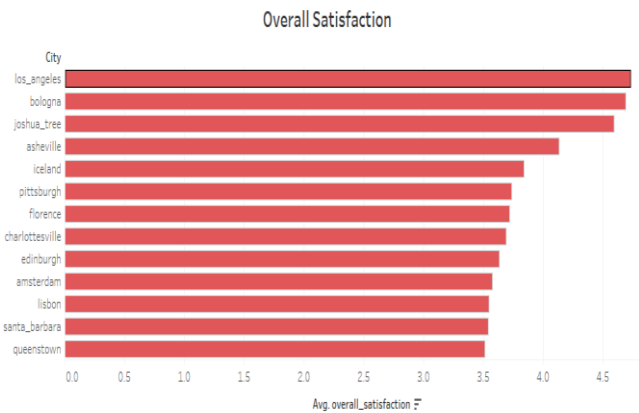


Figure 3: Rank of cities in decesending over of their satisfaction

In this visualization, highly satisfied cities⁴ with Airbnb service are graphed down in such a way that cities on top of graph are highly satisfied followed by next city which ranks 2nd in satisfaction and so on. In this graph, average overall satisfaction is taken on x-axis and City names are taken in Y-axis.

This will help to focus on cities with most satisfaction to look for factors of positivity and apply those factors to least Satisfied cities. This is an important information which will help to make better decisions.

4.3 Survey Trend

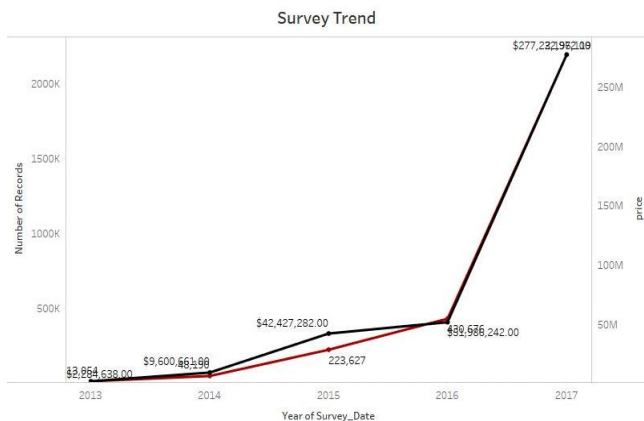


Figure 4: Airbnb Business Trend for different years
Black – Price
Red – No. of people surveyed

This Trend shows Price, which is being offered by people to the services offered. 2016 shows fall in the trend but in 2017 it again rises, as per the Google study 100 million people registered for the Airbnb in the year 2017. Though it's a rage but to stay in market⁵ we need to stay updated. Direct customer marketing helps a lot to stay updated.

4.4 Room Preference

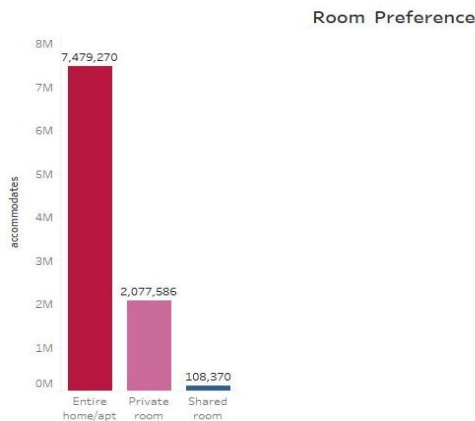


Figure 5: Airbnb Room Preference across the world

The above map is going to give detailed explanation about room preferences of different cities around the world. It is going to explain which rooms are mostly used by customers and rooms which are least used by customers.

By analyzing the above map, Airbnb can actually see which cities are in high demand. As per the figure, “Entire home/apt” type is most frequently used by the customers. By this data, Airbnb can actually increase this type of rooms for mushrooming the sales of their business.

5. Conclusion

As the pioneer for the collaborative consumption industry, Airbnb will be forced to quickly adapt to changes in the market and attempt to secure the most customers during the industry's expansion period. Currently, Airbnb is facing new issues like Safety & security [2], Regulatory issues and cultural adaptation. By effectively prioritizing the strategic issues, Airbnb can ensure market dominance in the domestic or worldwide market. The future of the collaborative consumption market is very uncertain, but Airbnb is poised for continued dominance of the peer-to-peer accommodations marketplace contingent on its upcoming decisions.

6. References

- [1] “Airbnb Is Inc.'s 2014 Company of the Year”, by Newyork Times
- [2] “The-two-faces-of-airbnb-2015-10”, by Business Insider

⁴ Cities which are highly satisfied by Airbnb service

⁵ peer-to-peer accommodation rental market