

Comparative Analysis Airbnb vs. Long Term Rental

DATA DYNAMIS

TEAM 10 | Final Report

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All project files can be downloaded [here](#)

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Introduction

Since the inception of Airbnb in 2007, homeowners were given the opportunity to participate in a “Shared Economy” turning their spare rooms into a profit-generating machine. This causes major disturbance to the hotel industry and general rental market. Recent event caused by the Covid-19 pandemic along with inflation, a new challenge has arisen for business and homeowner to maintain profitability. Between Airbnb and private rental, which method provides better return in times of uncertainty?

Our goal is to determine which of the two methods provides more viable source of revenue for property owners with consideration of current global event, flexibility, taxation, and associated fee/cost rise in these options. We will examine the datasets found within Inside Airbnb and contrast the difference against private rentals from Zillow.

The process will uncover the intricacies of Airbnb operation. Along with our distinctive approach and methodology, this will break down the assumption used by Airbnb to derive the true return on investment. This will greatly benefit businesses and homeowners as they will have the necessary information and breakdowns of the expected annual revenue between the two methods.

Data Analysis & Computation

Dataset Summary

For this project, we have collected information from two data sources.

1. **Inside Airbnb** | Host Data, Guest Review Data, and Future Reservation Data.
2. **Zillow** | General rental properties found within the market.

The dataset we have accumulated allows us to examine closely to the annual revenue for each method. We have developed our initial hypothesis based on annual revenue and felt that this metric is the most reasonable and fair in relation to private rental properties.

Upon examination of the dataset, we discovered many assumptions made by Airbnb. The first challenge is to figure out the cause of price inflation where a listing generates more than \$15 million revenues. This was caused by Airbnb assumption that every Guest stayed the minimum night listed inside of the dataset, when realistically the Guest did not stay more than 2 nights.

The second challenge is to find an accurate reservation data to be used in our final calculation.

Dataset 1: Raw Data Airbnb

Our first obstacle is to identify relevant columns that can be used for the EDA. The dataset found within Inside Airbnb outlines Toronto's current listings in 2022. The dataset had 16036 rows and 74 columns.

Source:

- <http://insideairbnb.com/toronto>
- <http://insideairbnb.com/get-the-data>

Data Profiling

We begin by eliminating any redundant columns within the dataset that does not contribute to the scope of our analyses, such as Photo Links, original post link, and review ratings (*Further more columns is removed as the project moves forward*). This narrowed down our attention to focus on room types, prices, customer reviews, active status, and minimum nights.

Through our meeting sessions, we have discussed the revenue calculation used by Airbnb to derive the annual revenue. What we have discovered is that the revenue is abnormally large with revenue as high as \$15 million dollars for a 1 bedroom apartment. Upon deeper analyzes, we learned that Airbnb made an assumption in regards to the night a Guest had stayed with the Host. This assumption had a major impact that causes the revenue to be over inflated.

To understand this problem, consider the base calculation used by Airbnb:

$$\text{Total Revenue} = \text{Nightly Rate} \times \text{Minimum Night} \times \text{Guest Reviews}$$

The minimum night is provided within the dataset, it is a set number that should have indicate how long a Guest stayed per reservation. If the listed **Minimum** Night says 28 days, we will multiply the **Nightly Rate** by **28 days** to get the total rate for the reservation. This raises suspicion as reservation could not have been book so uniformly through the lifetime of the account and with this in mind; we began to explore other datasets such as the Future Reservation Data and Guest Review list.

7692882	129	300	1,125	\$ 140.00	\$ 5,418,000
37431114	55	28	1,125	\$ 3,570.00	\$ 5,497,800
23416911	28	30	1,125	\$ 6,848.00	\$ 5,752,320
20817533	63	28	1,125	\$ 3,500.00	\$ 6,174,000
1080121	516	90	120	\$ 186.00	\$ 8,637,840
24719725	33	300	1,000	\$ 1,128.00	\$ 11,167,200
19232550	45	28	1,125	\$ 9,999.00	\$ 12,598,740
28615622	3	365	366	\$ 13,000.00	\$ 14,235,000
22987823	107	28	364	\$ 5,000.00	\$ 14,980,000
14837477	226	365	1,125	\$ 191.00	\$ 15,755,590

Image of Over Inflated Revenue

Data Wrangling

Field	Type	Description
name_of_column	The column's data	Brief description of the field. If the field follows a specific format (e.g.

	format	a specific date format) include that here too.
id	INTEGER	Airbnb's unique identifier for the listing
listing_url	STRING	
scrape_id	INTEGER	Inside Airbnb "Scrape" this was part of
last_scraped	DATETIME	UTC. The date and time this listing was "scraped".
source	STRING	One of "neighbourhood search" or "previous scrape". "neighbourhood search" means that the listing was found by searching the city, while "previous scrape" means that the listing was seen in another scrape performed in the last 65 days, and the listing was confirmed to be still available on the Airbnb site.
name	STRING	Name of the listing
description	STRING	Detailed description of the listing
neighborhood_overview	STRING	Host's description of the neighbourhood
picture_url	STRING	URL to the Airbnb hosted regular sized image for the listing
host_id	INTEGER	Airbnb's unique identifier for the host/user
host_url	STRING	The Airbnb page for the host
host_name	STRING	Name of the host. Usually just the first name(s).
host_since	DATETIME	The date the host/user was created. For hosts that are Airbnb guests this could be the date they registered as a guest.
host_location	STRING	The host's self reported location
host_about	STRING	Description about the host
host_response_time	DATETIME	
host_response_rate	FLOAT	
host_acceptance_rate	FLOAT	That rate at which a host accepts booking requests.
host_is_superhost	BOOLEAN [t=true; f=false]	
host_thumbnail_url	STRING	
host_picture_url	STRING	
host_neighbourhood	STRING	
host_listings_count	STRING	The number of listings the host has (per Airbnb calculations)
host_total_listings_count	STRING	The number of listings the host has (per Airbnb calculations)
host_verifications	STRING	Phone,Email,work_email..
host_has_profile_pic	BOOLEAN [t=true; f=false]	
host_identity_verified	BOOLEAN [t=true; f=false]	
neighbourhood	STRING	
neighbourhood_cleansed	STRING	The neighbourhood as geocoded using the latitude and longitude against neighborhoods as defined by open or public digital shapefiles.
neighbourhood_group_cleansed	STRING	The neighbourhood group as geocoded using the latitude and longitude against neighborhoods as defined by open or public digital shapefiles.
latitude	FLOAT	Uses the World Geodetic System (WGS84) projection for latitude and longitude.

longitude	FLOAT	Uses the World Geodetic System (WGS84) projection for latitude and longitude.
property_type	STRING	Self selected property type. Hotels and Bed and Breakfasts are described as such by their hosts in this field
room_type	STRING	<p>[Entire home/apt Privateroom Sharedroom Hotel]</p> <p>All homes are grouped into the following three room types:</p> <p>Entire place Private room Shared room</p> <p>Entire place Entire places are best if you're seeking a home away from home. With an entire place, you'll have the whole space to yourself. This usually includes a bedroom, a bathroom, a kitchen, and a separate, dedicated entrance. Hosts should note in the description if they'll be on the property or not (ex: "Host occupies first floor of the home"), and provide further details on the listing.</p> <p>Private rooms Private rooms are great for when you prefer a little privacy, and still value a local connection. When you book a private room, you'll have your own private room for sleeping and may share some spaces with others. You might need to walk through indoor spaces that another host or guest may occupy to get to your room.</p> <p>Shared rooms Shared rooms are for when you don't mind sharing a space with others. When you book a shared room, you'll be sleeping in a space that is shared with others and share the entire space with other people. Shared rooms are popular among flexible travelers looking for new friends and budget-friendly stays.</p>
accommodates	INTEGER	The maximum capacity of the listing
bathrooms	FLOAT	The number of bathrooms in the listing
bathrooms_text	STRING	<p>The number of bathrooms in the listing.</p> <p>On the Airbnb web-site, the bathrooms field has evolved from a number to a textual description. For older scrapes, bathrooms is used.</p>
bedrooms	INTEGER	The number of bedrooms
beds	INTEGER	The number of bed(s)
amenities	STRING	List of the amenities in Listing
price	STRING	daily price in local currency
minimum_nights	INTEGER	minimum number of night stay for the listing (calendar rules may be different)
maximum_nights	INTEGER	maximum number of night stay for the listing (calendar rules may be different)
minimum_minimum_nights	INTEGER	the smallest minimum_night value from the calender (looking 365 nights in the future)
maximum_minimum_nights	INTEGER	the largest minimum_night value from the calender (looking 365 nights in the future)
minimum_maximum_nights	INTEGER	the smallest maximum_night value from the calender (looking 365 nights in the future)
maximum_maximum_nights	INTEGER	the largest maximum_night value from the calender (looking 365

		nights in the future)
minimum_nights_avg_ntm	FLOAT	the average minimum_night value from the calender (looking 365 nights in the future)
maximum_nights_avg_ntm	FLOAT	the average maximum_night value from the calender (looking 365 nights in the future)
calendar_updated	DATETIME	
has_availability	BOOLEAN	[t=true; f=false]
availability_30	INTEGER	availability_x. The availability of the listing x days in the future as determined by the calendar. Note a listing may not be available because it has been booked by a guest or blocked by the host.
availability_60	INTEGER	availability_x. The availability of the listing x days in the future as determined by the calendar. Note a listing may not be available because it has been booked by a guest or blocked by the host.
availability_90	INTEGER	availability_x. The availability of the listing x days in the future as determined by the calendar. Note a listing may not be available because it has been booked by a guest or blocked by the host.
availability_365	INTEGER	availability_x. The availability of the listing x days in the future as determined by the calendar. Note a listing may not be available because it has been booked by a guest or blocked by the host.
calendar_last_scraped	DATETIME	
number_of_reviews	INTEGER	The number of reviews the listing has
number_of_reviews_ltm	INTEGER	The number of reviews the listing has (in the last 12 months)
number_of_reviews_l30d	INTEGER	The number of reviews the listing has (in the last 30 days)
first_review	DATETIME	The date of the first/oldest review
last_review	DATETIME	The date of the last/newest review
review_scores_rating	FLOAT	
review_scores_accuracy	FLOAT	
review_scores_cleanliness	FLOAT	
review_scores_checkin	FLOAT	
review_scores_communication	FLOAT	
review_scores_location	FLOAT	
review_scores_value	FLOAT	
license	STRING	The licence/permit/registration number
instant_bookable	BOOLEAN	[t=true; f=false]. Whether the guest can automatically book the listing without the host requiring to accept their booking request. An indicator of a commercial listing.
calculated_host_listings_count	INTEGER	The number of listings the host has in the current scrape, in the city/region geography.
calculated_host_listings_count_entire_homes	INTEGER	The number of Entire home/apt listings the host has in the current scrape, in the city/region geography
calculated_host_listings_count_private_rooms	INTEGER	The number of Private room listings the host has in the current scrape, in the city/region geography
calculated_host_listings_count_shared_rooms	INTEGER	The number of Shared room listings the host has in the current scrape, in the city/region geography
reviews_per_month	FLOAT	The number of reviews the listing has over the lifetime of the listing

Dataset 2: Future Reservation

After learning about the discrepancy that Airbnb created with its assumption, we quickly turn our attention find other sources of data that can accurately show us the number of night stayed by the Guest.

We then discovered a dataset within Inside Airbnb that outlines all of the days in which a listing is occupied. Meaning, which days is already reserved and which days is not reserved.

This dataset has over 5 million records, 365 rows (*one for each day*) for each listing found inside of our original raw data. There are 7 columns that outline the detail of this dataset.

```
1 # OPEN THE FILE
2 file = open( "Prototype/TextSamples/2022-Airbnb_calendar_AllBooking.csv", "r" )
3
4 # =====
5 # EXTRACT FIRST RECORD (HEADER)
6 # =====
7 header = ( file.readline( ) ).split( "," )
8
9 # =====
10 # CLEAN UP HEADER FOR ESCAPE SEQUENCE
11 # =====
12 colNum = 0
13
14 for col in header:
15     header[colNum] = header[colNum].replace( "\n", "" )
16     colNum += 1
17
18 # =====
19 # SEPARATE ALL THE RECORDS BY THEIR
20 # LISTING_ID
21 # =====
22 uniqueIDs = {}
23 curRecord = 0
24
25 while( True ):
26     record = ( file.readline( ) ).split( "," )
27
28     if( record[0] == '' ):
29         print( "\n-- End of Reading --" )
30         print( str( len( uniqueIDs ) ) + " records processed" )
31         print( "\n" )
32         break
33
34     if( record[0] in uniqueIDs ):
35         uniqueIDs[ record[0] ].append( record )
```

Sample Python used to filter datasets

Data Profiling

The most important column is “**listing_id**”, “**date**” and “**available**”, this tells use the availability for each day that belong to the listing.

We filter this dataset using Python, since excel was not able to process anything beyond 1 million records. The program splits the records in 9 different excel spreadsheet, which then later condense all the records into a two columns. **Reserved_Nights** and **not_Reserved_Nights**.

Upon having this information, our conclusion was to use these records as we thought that it is the most accurate to represents the number of nights is reserved by the Guest collectively. After a few sanity checks, we discovered that Airbnb does make any distinction between “**Reserved Nights**” and “**Blocked**”.

Blocked means the Host has made it unavailable to Guests, and this information is mixed into the “**Available**” column. Another word, our revenue is at best an overly inflated assumption and it is unsuitable for use to compare against private rental.

listing_id	reserved	notReserved	Revenue_Reserved
533659	234	131	\$ 52,884
27640141	220	145	\$ 19,800
27658681	38	327	\$ 7,030
27675456	290	75	\$ 15,660
27677502	229	136	\$ 39,617
27692483	207	158	\$ 24,840
27694920	202	163	\$ 30,300
27701168	309	56	\$ 152,646
27705416	33	332	\$ 3,597
27725239	176	189	\$ 11,792
27734689	319	46	\$ 44,660
27759221	71	294	\$ 8,662
27761046	365	0	\$ 54,750

Revenue difference using Future Reservation Dates

Data Wrangling

Field	Type	Description
listing_id		
date	datetime	The date in the listing's calendar
available	boolean	Whether the date is available for a booking
price	currency	The price listed for the day
adjusted_price	currency	
minimum_nights	integer	Minimum nights for a booking made on this day
maximum_nights	integer	Maximum nights for a booking made on this day

Dataset 3: Guest Reviews

The last dataset we used is the Guest Review, which was later discovered late into the project. It has 445,798 records and 3 columns. This dataset shows the exact date in which a Guest has written a review for a listing, the date goes back to the inception of the listing account.

Data Profiling

This dataset is extremely valuable as it shows the exact **year of operation** for each account and when the **review data** happened. The **year of operation** tell us the total revenue a listing made over the life time of the account. We use this information extensively to evaluate the real annual return. Also, this field aligns perfectly with Private Rental as we intent to measure both types of revenue by the year.

Another important aspect of this dataset is that we can gauge the total number of nights reserved by taking the difference between reviews. For example:

The listing on the left shows 4 different reviews.	
As outline by Airbnb, the listing has minimum night of 28 days. When cross reference with this dataset, the date difference between reviews is at most 11 days apart. So therefore, the minimum night requirement is entirely not accurate.	
When we discovered this trend, we filtering them in chronological order and calculate the difference between all of the dates after.	
This gives us a closer approximation of the real reserved nights.	

listing_id	date
27640141	8/12/2018
27640141	8/17/2018
27640141	8/19/2018
27640141	8/28/2018

However, despite this discovery to be more accurate, there are outliers that cannot be included in the dataset. For instance:

- Dates between reviews that are too long can suggest that there are no reservations in between. Another words, we cannot distinguish how many nights a Guest have stayed, this information is needed to be excluded as it is inconclusive. Any difference that is greater than 10 days become unreasonable to include into our final calculation.

After this process is complete, we have an accurate estimation of how much revenue is accumulated over the life time of the account and how much we can realistic make on an annual basis.

listing_id	lifetime_reviews	Estimated Real Reserved Days	nightly_rate	Year in Business	Actual_LifeTime_Earning	Actual_Average_Earning_YTY
533659	164	384	\$ 226.00	13	\$ 86,784	\$ 6,676
27640141	47	96	\$ 90.00	7	\$ 8,640	\$ 1,234
27658681	41	143	\$ 185.00	4	\$ 26,455	\$ 6,614
27675456	3	0	\$ 54.00	4	\$ -	\$ -
27677502	18	23	\$ 173.00	6	\$ 3,979	\$ 663
27692483	12	17	\$ 120.00	4	\$ 2,040	\$ 510
27694920	102	302	\$ 150.00	7	\$ 45,300	\$ 6,471
27701168	254	807	\$ 494.00	7	\$ 398,658	\$ 56,951
27705416	137	393	\$ 109.00	6	\$ 42,837	\$ 7,140
27725239	4	0	\$ 67.00	5	\$ -	\$ -
27734689	38	54	\$ 140.00	7	\$ 7,560	\$ 1,080

Result after filtering Guest Review data and incorporated into the Original Dataset

Data Wangling

Field	Type	Description
listing_id	Number	Host Listing Id
date	Date	The day in which a Guest left their review

Dataset 4: Zillow

To compare against Airbnb, we scrapped the current listings from Zillow using a program. The dataset we gathered is very straight forward. There are only 9 columns with 1116 rows.

Data Profiling

There is no cleaning up that is required except for some terminology fixing. All price figures on the list are monthly base which can be converted into annual revenue easily.

Data Wangling

Field	Type	Description
City	Text	The city in which this property resides.
House_url	Link	The link to the home listing

Price	Currency	Monthly rate
bedroom_s_	Number	Number of bedrooms
bathroom_s_	Number	Number of bathrooms
square_feet	Number	The size of the property
status	Text	Status for purchase or rent
Property type	Text	Property type such as House, Condo, Apartment
address	Text	Address of the property

Exploratory Data Analysis

During the exploratory stage, we have developed various graphs and charts to find a fair comparison between Airbnb and Private Rental. We have tried to break down the dataset into individual property type and discovered that each Host describes their property differently. For example, a Host with a listing for a Basement would call it a Condo, while some listing says it is an apartment.

After thoroughly studied Airbnb' operation, we learned that the terminologies used by Airbnb differs from Real Estate. Airbnb does not care for property type, they only concern with room privacy, and the subdivision of the Host property being offer, Airbnb calls it “**Entire Place**”

This is how Airbnb Defines Entire Place: A house that has a bedroom, a bathroom, a kitchen, and a separate dedicated entrance. *This definition may be different from how the word “Entire” is perceived.* When we hear the word “Entire”, we imagine the whole property and everything in it.

This includes the main floor, second floor and the basement. However, the word “Entire” have a different meaning to Airbnb.

Entire means a dedicated space that is separated from other living spaces. **For example**, a **House** can have multiple “**Entire Place**”. The main floor in addition to the second floor can be considered an Entire Place, because it has bedrooms, bathroom(s), kitchen, and a separate dedicated entrance. The basement can also be considered as an Entire Place as long as it has a bedroom, bathroom, kitchen, and a separated dedicated entrance.

Also note that the two Entire Place is private, this means the main floor cannot access the basement and vice versa.

This means whether your property is a House, Condo, or Apartment, they are all categorized as Entire Home. This creates a more complex issue since revenue is not determined by the Property Type.

Host Property Type Breakdown		Average Nightly Rate By Room Count		Average Nightly Rate by Room Type	
Property Type	Average Nightly Rate	Bedroom(s)	Average Nightly Rate	Room Type	Average Nightly Rate
Entire home/apt	\$114.00	0	\$137.40	Entire home/apt	\$248.01
Entire guest suite	\$136.87	1	\$147.59	Private room	\$114.53
Entire guesthouse	\$145.17	2	\$292.53	Shared room	\$95.39
Entire rental unit	\$ 180.84	3	\$364.70		
Entire serviced apartment	\$212.44	4	\$532.18		
Entire bungalow	\$256.42	5	\$666.60		
Entire vacation home	\$263.50	6	\$475.02		
Entire loft	\$272.48	7	\$621.00		
Entire home	\$284.64	8	\$405.75		
Entire townhouse	\$285.41	9	\$448.00		
Entire condo	\$295.66				
Entire place	\$305.83				
Entire cottage	\$393.20				
Entire villa	\$903.28				

Initial breakdown of our EDA based on Property and Room Type

We shift our focus to solely on annual revenues and then later introduce the breakdown of number of rooms. These are the two metrics that is common between Airbnb and Private Rental.

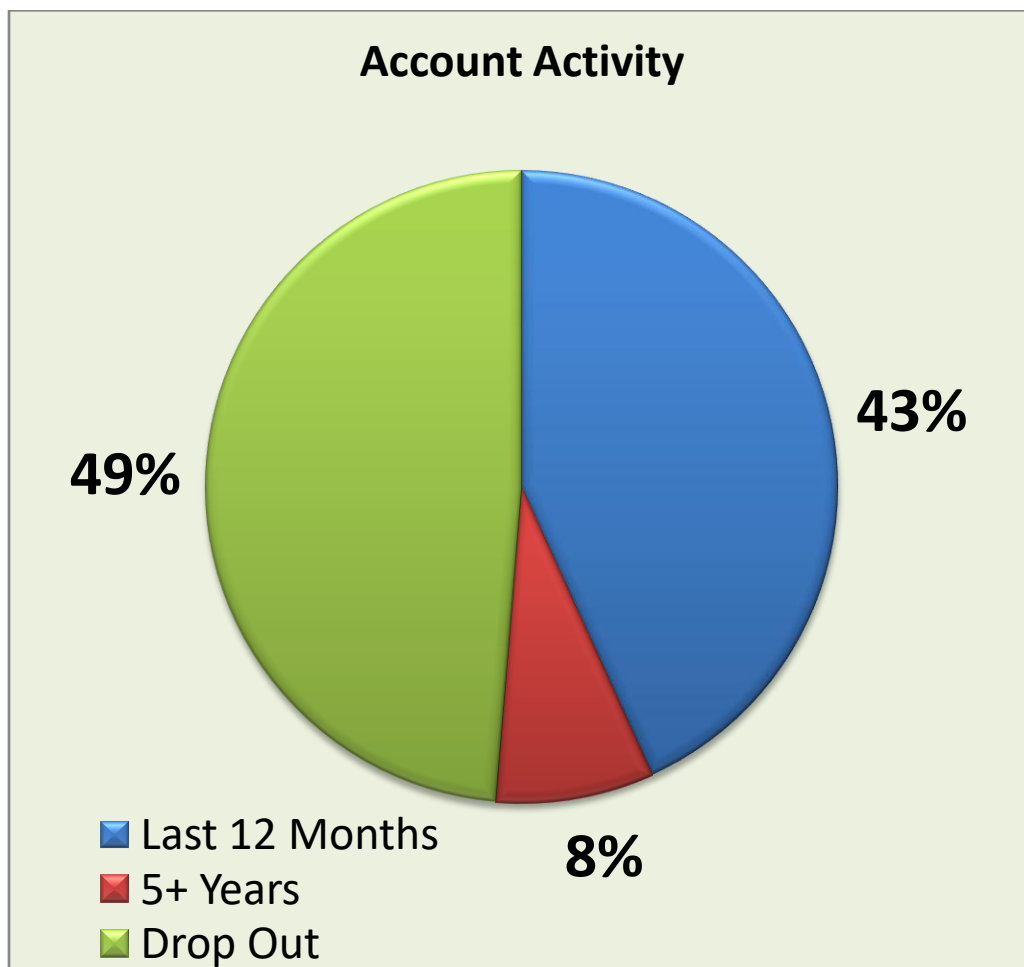
For Airbnb, we discovered from the Guest Review dataset that listings age can be determined. A breakdown of operation in years is essential as this creates the most realistic annual return based on the number of years a Host is in business. The chart below shows the Revenue Bracket based on the number of years in operation.

Airbnb Average Annual Revenue Based on Number of Years in Operation						
Year(s) in Operation	Average Revenue By Brackets					
	Nothing	0K-10K	10K-25K	25k-50k	50k-100k	over 100k+
0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3	\$0.00	\$1,900.31	\$15,142.50	\$31,751.70	\$78,194.53	\$596,639.67
4	\$0.00	\$2,109.34	\$14,755.91	\$33,029.65	\$81,250.00	\$142,881.86
5	\$0.00	\$2,192.11	\$15,021.11	\$34,172.57	\$71,850.03	\$295,970.40
6	\$0.00	\$2,559.27	\$15,825.19	\$32,110.53	\$67,657.92	\$200,526.00

7	\$0.00	\$2,762.23	\$14,674.61	\$36,543.66	\$63,434.43	\$0.00
8	\$0.00	\$2,912.41	\$15,730.88	\$31,573.97	\$66,437.98	\$105,380.25
9	\$0.00	\$2,811.96	\$15,203.39	\$31,111.99	\$73,460.93	\$115,488.33
10	\$0.00	\$2,534.67	\$15,283.78	\$33,356.68	\$60,316.16	\$0.00
11	\$0.00	\$2,118.15	\$15,250.62	\$30,388.59	\$0.00	\$0.00
12	\$0.00	\$1,822.37	\$15,306.31	\$28,864.25	\$0.00	\$0.00
13	\$0.00	\$2,265.45	\$0.00	\$0.00	\$0.00	\$0.00
14	\$0.00	\$1,589.29	\$0.00	\$0.00	\$0.00	\$0.00
15	\$0.00	\$319.20	\$0.00	\$0.00	\$0.00	\$0.00

Most accurate Average Revenue based on the number of Operating Years.

Upon discovering the low return based on the Chart above, we begin investigating the Account Activities to gauge the reaction of Host. By categorizing listings by consecutive years in Operation, we can see how many listing is still active, which listing is solemnly active, and listings completely dropped out.

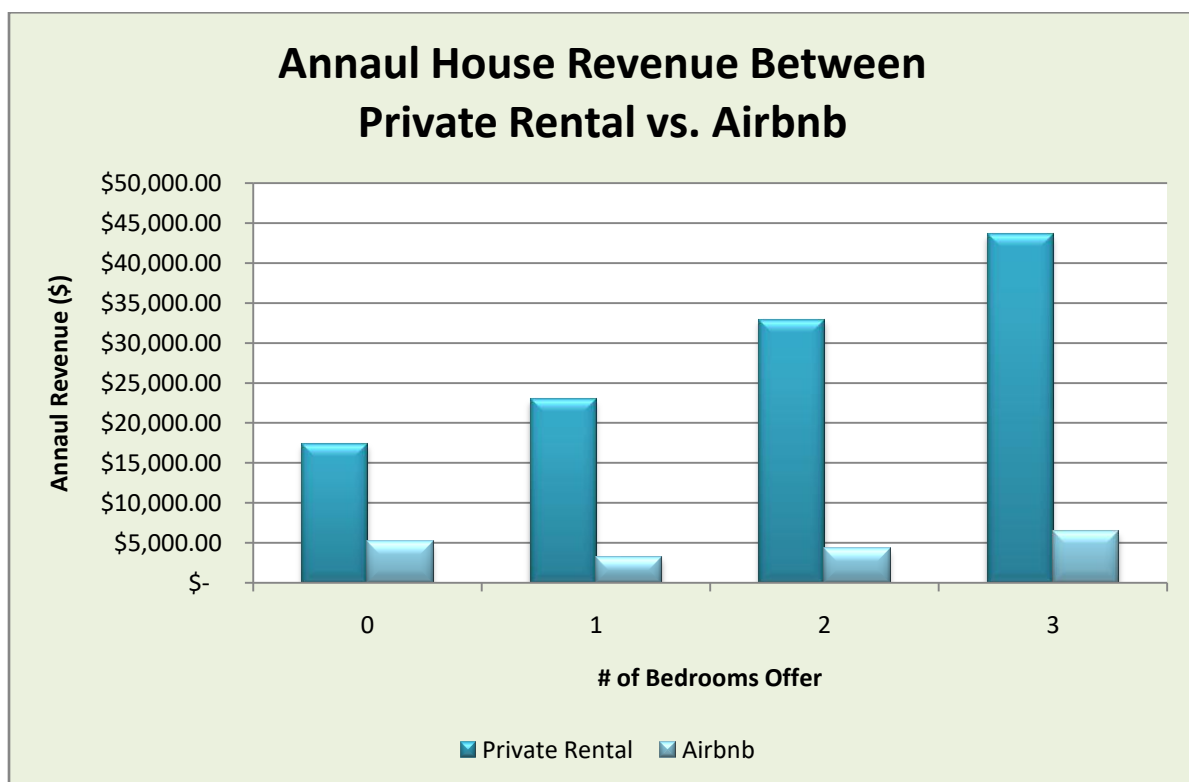


A pie chart shows the number of active listing in consecutive years.

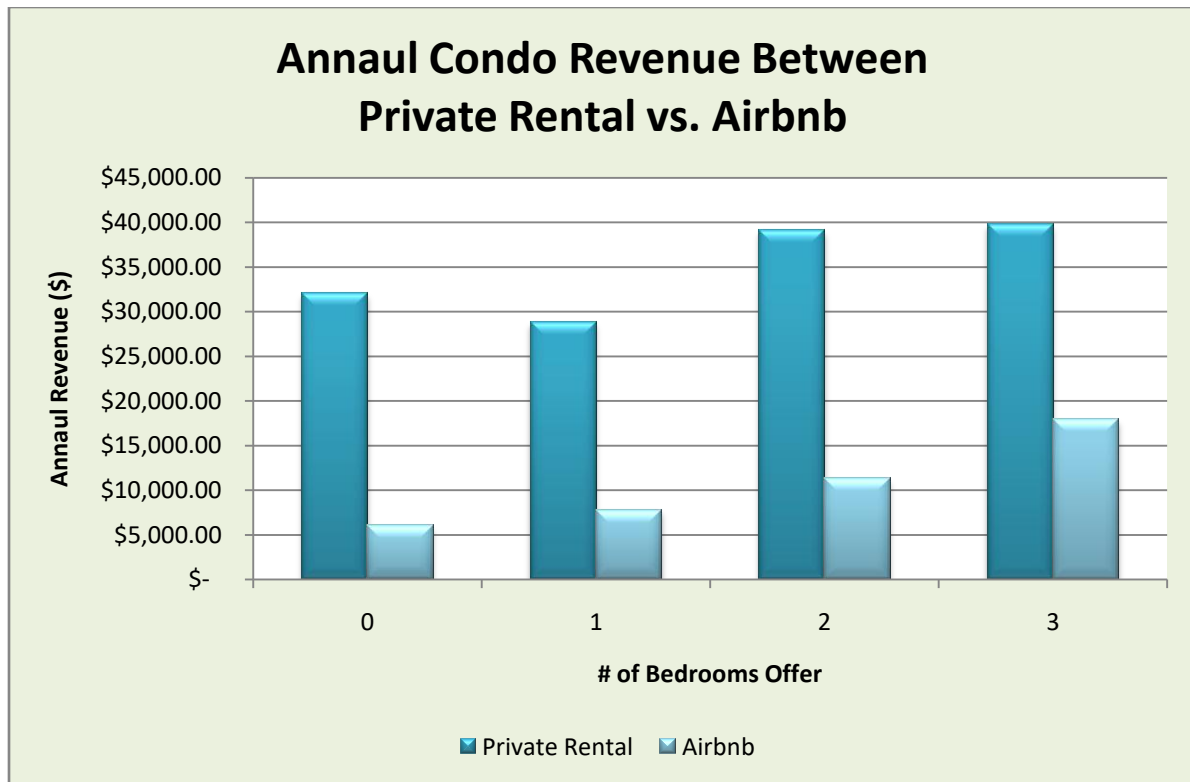
With the full understanding of the Airbnb business model, we can then complete the project by comparing annual revenues side by side.

Average Annual Revenue by Brackets			Average Annual Revenue by Property Type	
Earning Brackets	Percentage	Annual Average	Property Type	Annual Revenue
Nothing	36.0%	-	Condo	\$34,031.83
0K-10K	56.3%	\$2,227.69	House	\$39,413.10
10K-25K	5.8%	\$15,155.58	Apartment	\$31,613.33
25k-50k	1.5%	\$32,822.26	Townhouse	\$41,503.23
50k-100k	0.3%	\$69,104.51		
over 100k+	0.1%	\$251,977.74		

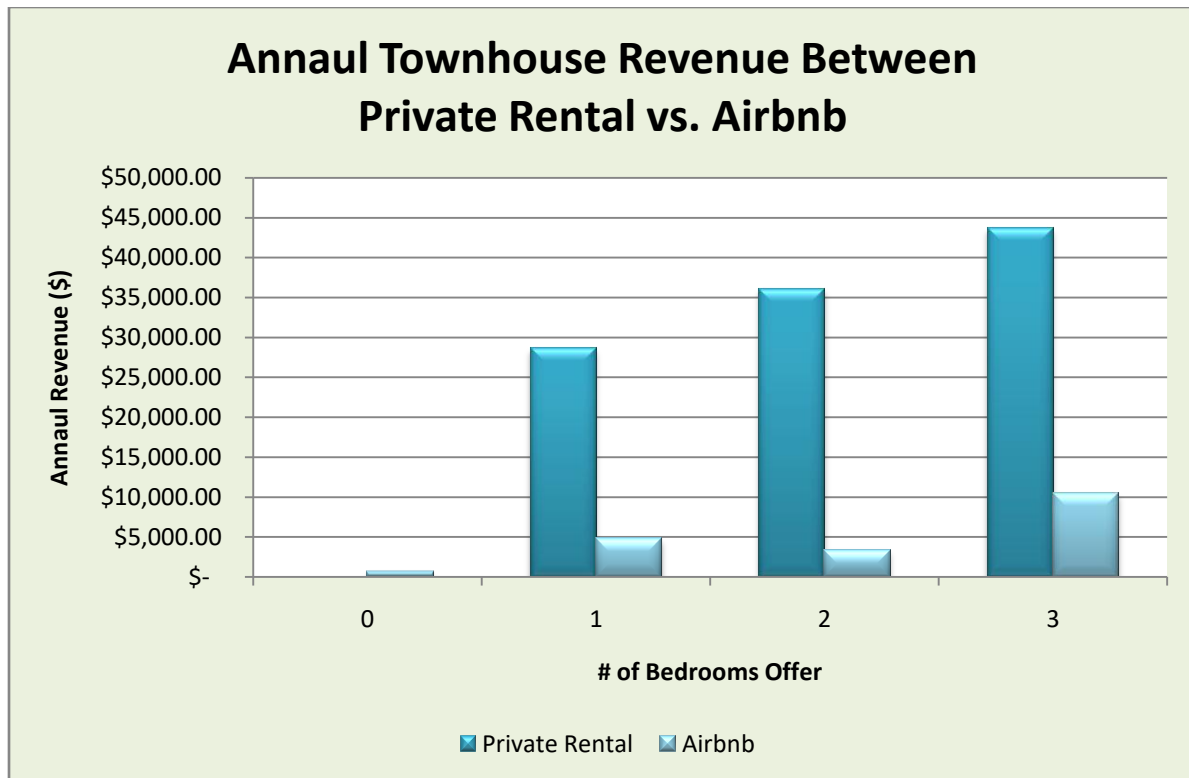
Side by Side comparison between Average Annual Revenue



Bar chart showing Annual Revenue based on House and Number of Rooms between Airbnb and Private Rental



Bar chart showing Annual Revenue based on Condos and Number of Rooms between Airbnb and Private Rental



Bar chart showing Annual Revenue based on Townhouse and Number of Rooms between Airbnb and Private Rental

Dashboard

Dashboard link

<https://public.tableau.com/app/profile/c1team10/viz/Team10Dashboard/Dashboard1>

Dashboard Summary

The dashboard consists of two parts:

- Summary of finding – Airbnb
- Revenue comparison between Airbnb and long-term private rental

The first part demonstrates the information we extracted from the raw Airbnb datasets. It provides information regarding the room type composition, number of active accounts over the last 12 months, average life time earnings of different room type, and breakdown of all Airbnb listings based on income level.

The second part provides a comparison of the average annual income between Airbnb and long-term private rental based on property type. In order to have a fair comparison, only active, licensed, and entire-place type listings of the Airbnb dataset were included in the analysis.

Dashboard Use case

Property owners who are interested in operating an Airbnb rental could gain an insight into the profitability of Airbnb rental by exploring the data of the dashboard. Based on the type of properties and number of available bedrooms they have, they could know how many similar properties are available on Airbnb, and what the potential income they could generate.

Moreover, property owners could compare the Airbnb income number with the potential income from similar long-term private rental properties. This comparison could help them to make informed business decision to choose the optimal method to drive profitability for their rental properties.

Conclusion

The Airbnb dataset made a lot of assumptions how the revenue is calculated, moreover, there were many missing data to accurately gauge the revenues. Despite this challenge, we investigated deeply to find evidence to support our claim that Airbnb might not be an appropriate business for everyone and that private rental is the better option.

In terms of revenue potential and stability, private rental reign supreme in both dimensions. On average, majority of Airbnb Hosts made less than \$10,000 a year, whereas Private Rental earns as much as \$30,000 - \$40,000 a year. Although we cannot downplay the astronomical earning potentials of Airbnb, this highly depends on location, demand and strategic usage of the property within the city.

Future Works

Moreover, there were many aspect of this project that we have yet to explore, such as:

- Shared Economy Regulation
- Rental Regulation
- Geographical Differences
- Suburban vs. Urban City
- Impact of Covid-19
- Inflation impact on Shared Economy

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