

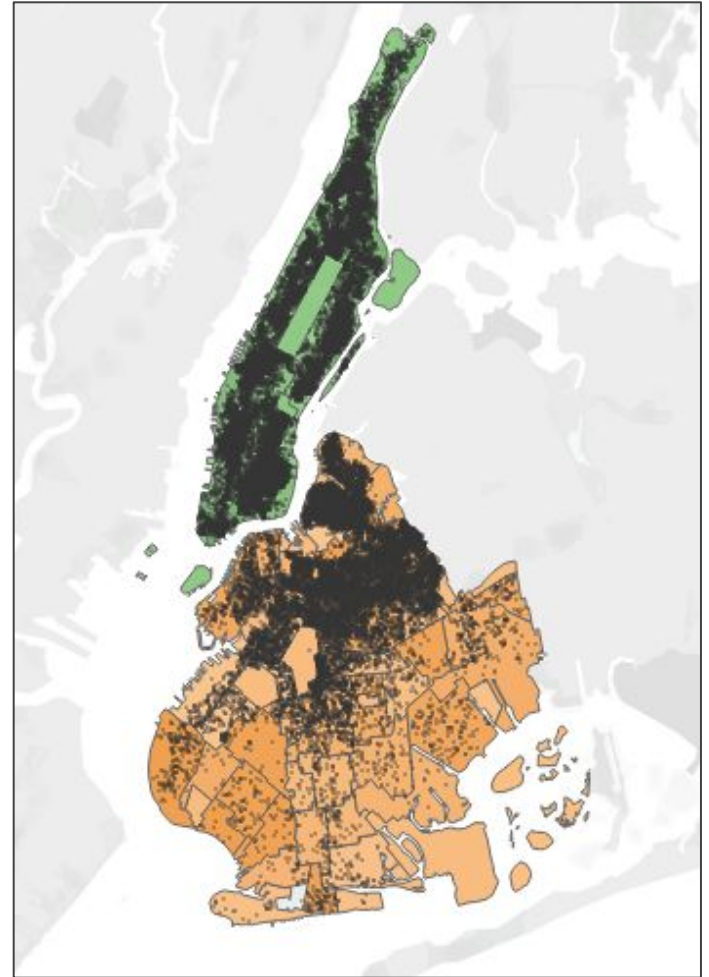
So, you want to host an Airbnb in NYC?*

*Heavily Brooklyn and Manhattan biased



Airbnb 2019 Data

- Largest share of listings held by Manhattan and Brooklyn
- Metrics:
 - Room type
 - Availability
 - Minimum Nights



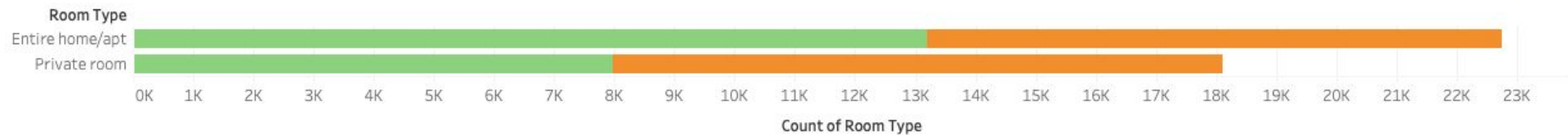
Room Type per Borough

Neighborhood Group

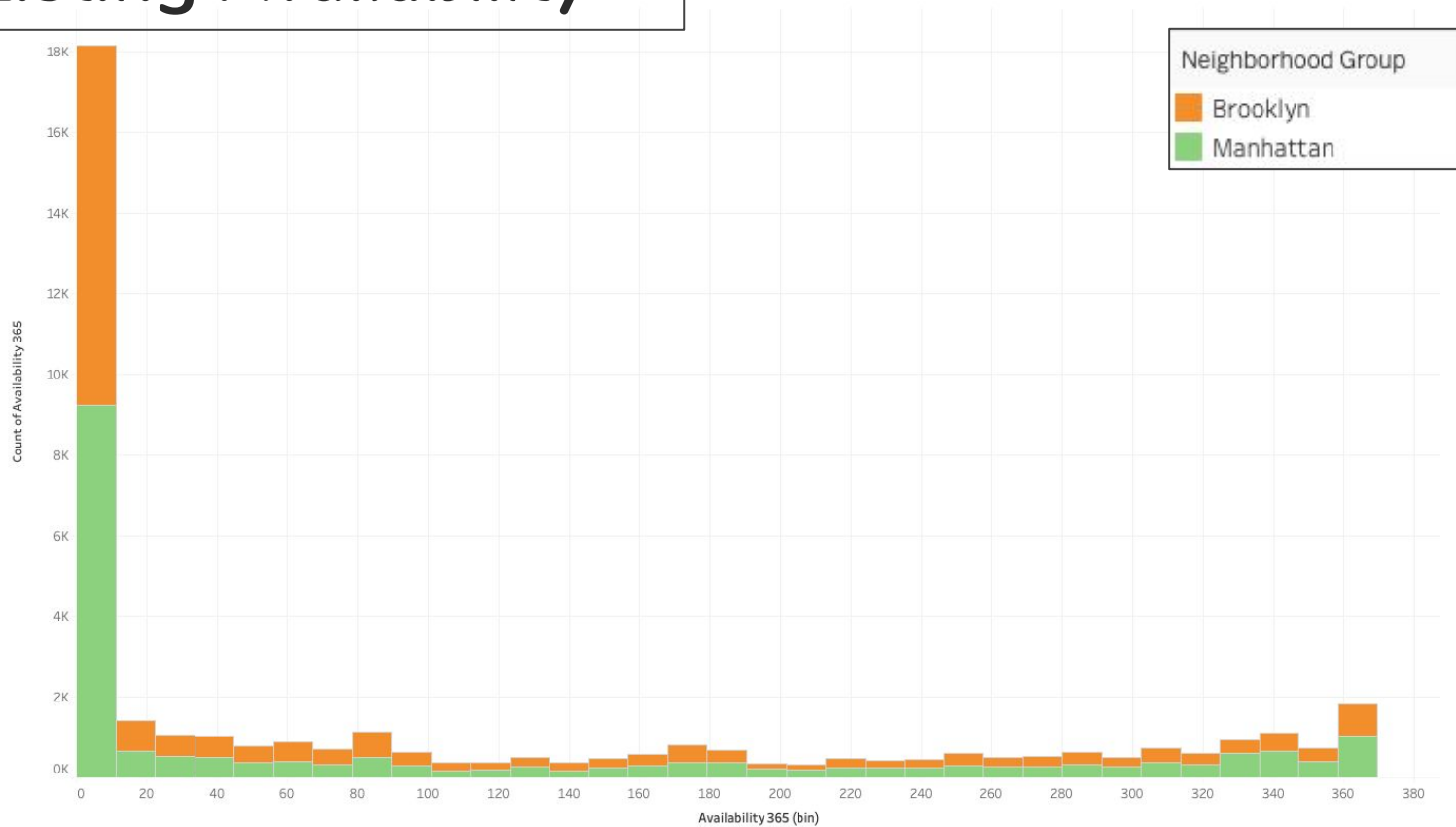
Brooklyn

Manhattan

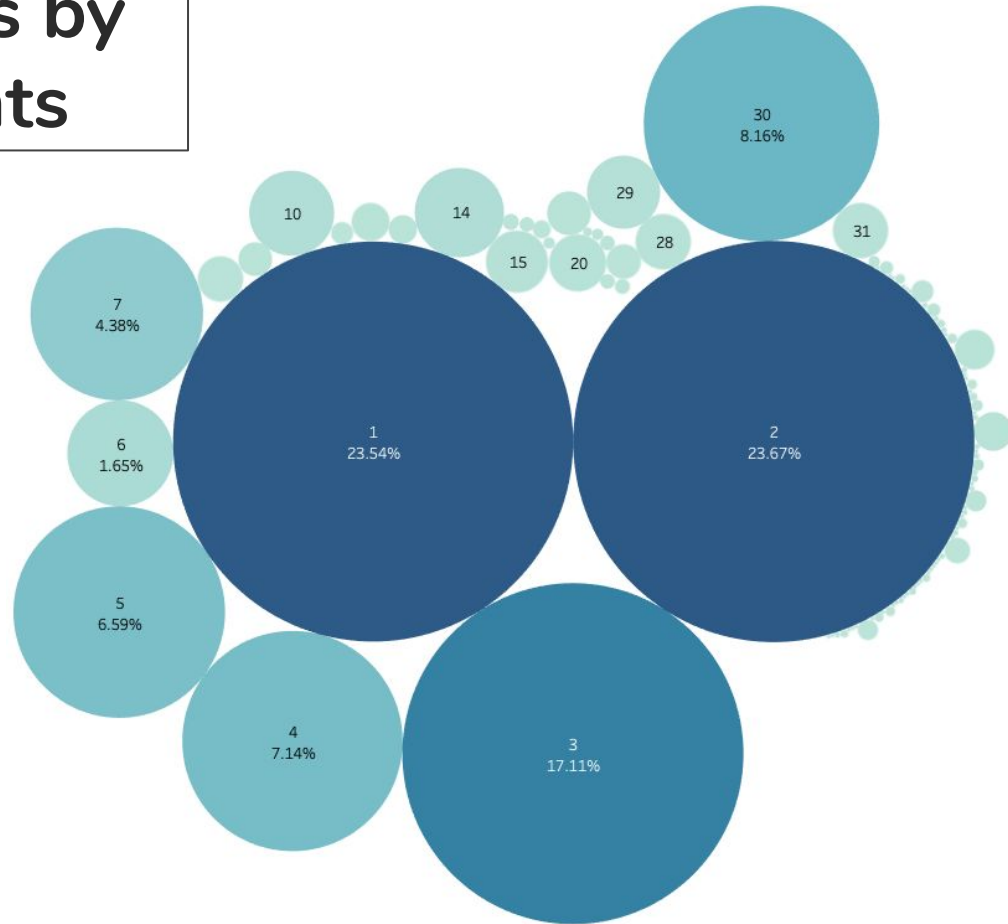
Counts Per Room Type



Listing Availability

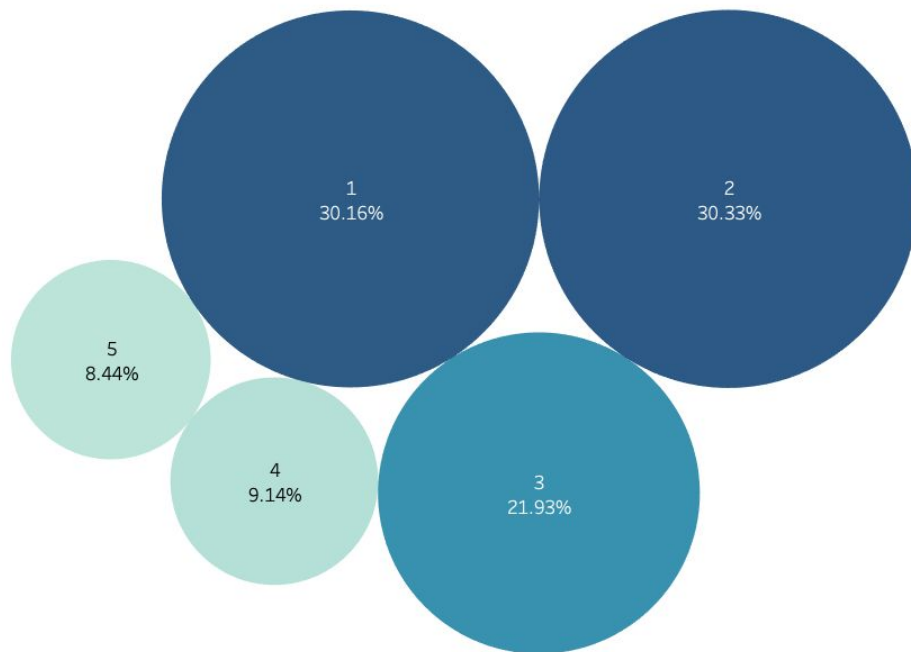


Available Rooms by Minimum Nights



Hypothesis

I'm 99% sure it's more possible
to find an entire house/apt in
Manhattan for 5 nights or less
than a private room in Brooklyn



What I Did

Hypothesis Testing with Sample Means

Manhattan (entire home/apt) ≤ 5				Brooklyn (apt) ≤ 5			
Availability Type (days)				Availability Type (days)			
Counts of each	Frequency	Type * Frequency	Weighted Mean of Availability	Counts of each	Frequency	Type * Frequency	Weighted Mean of Availability
0	3555	0.432429145	0	0	3555	0.432429145	0
1	88	0.010704294	0.010704294	1	88	0.010704294	0.010704294
2	72	0.008758059	0.017516117	2	72	0.008758059	0.017516117
3	81	0.009852816	0.029558348	3	81	0.009852816	0.029558348
4	62	0.00758059	0.030223357	4	62	0.00758059	0.030223357
5	62	0.00758059	0.037778947	5	62	0.00758059	0.037778947

Sample mean		Brooklyn	Manhattan
Sample size		6967	8221
Sample standard deviation		135.4782576	143.0959349

Null Hypothesis	$\mu(1) \geq \mu(2)$
Alternative Hypothesis	$\mu(1) < \mu(2)$
Alpha	0.01
Sample 1	Brooklyn
Sample 2	Manhattan
Standard Error	2.263894812
Difference in sample means (true mean)	11.71016426

27	20	0.002189515	0.052548352	-64.28366379	4261.956758
28	21	0.002432794	0.054737866	-63.28366379	4132.38943
29	20	0.002554434	0.063252646	-62.28366379	4004.822102
30	24	0.00432794	0.068969712	-61.28366379	3879.254775
31	16	0.002919353	0.068118234	-60.28366379	3755.687447
27	14	0.001946235	0.084661233	-59.28366379	3634.12012
26	71	0.001702956	0.058387058	-58.28366379	3514.552792
27	28	0.00258044	0.052791631	-57.28366379	3396.985465
28	18	0.00301277	0.081741881	-56.28366379	3281.418137
29	23	0.002583608	0.080091864	-55.28366379	3167.850809
30	18			-54.28366379	3056.283482
31					2946.716164

Results

- We reject the null hypothesis in favor of the alternate
- More possible to find a Manhattan apt/home than Brooklyn private room

P-Value	1.18207E-07
P-Value > Alpha?	FALSE

Conclusions

- Need more hosts for private rooms in Brooklyn for shorter stays
- Manhattan hosts with a house should favor longer stays