BEIJING
北爱彼
京迎
13
GROUP

airbnb

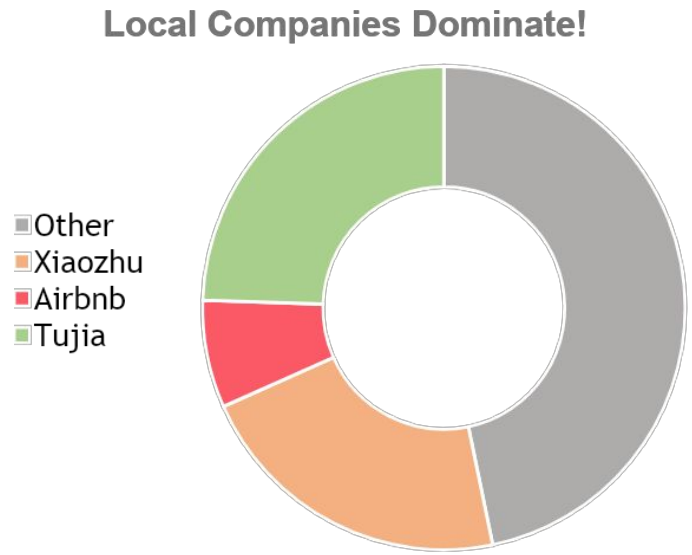
Introduction and Background

Scope of the Project

Given the Airbnb listing data for Beijing, we set out to create a regression model to predict the price of a 4 night stay for 2 people.
To achieve this we did the following:

- ➔ Cleaning data
- ➔ Exploratory Data Analysis
- ➔ Iterative model development
- ➔ Price prediction
- ➔ Model performance evaluation

Airbnb China - Current State



Final Results

We created a model that explained **54.3%** of the variability in our data!

This model gave us a predicted price of: **$1,173**

The Growth Potential

- ➔ Sharing Economy
- ➔ Advantaged by its **international identity**
- ➔ **Encouraged** by the Chinese Government
- ➔ "**Homestay**" embedded in local culture
- ➔ Potential for a **250%** growth **rate**

Exploratory Data Analysis

Improve your Beijing Listings

Want to hike up prices?

Increase the number of guests! $\rho = 0.314$
Plus, it won't affect your score. $\rho = 0.008$

Want to increase turnover?

No add-on costs such as cleaning fees make the property cheaper and thus more appealing!

Want to increase marketability?

*Aim for short stays, no longer than 3 days as these account for **92%** of bookings!*

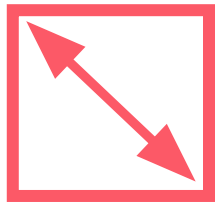
*Definitely don't be that one listing that has a **1085 minimum night** stay…*

36,283 properties and ~40% are **Apartments**

You the cold type?
Rent an **igloo**!

Need a bathroom?
How about
101.5 of them!?

High roller?
$70,723



Average Size:
56m^2

Model Decision Process

To determine which variables to include in our final model, we went through the following iterative process:

Step 1:	Add a variable of interest	(e.g. + Breakfast)
Step 2:	Interpret variable significance	(Is it 95%+ significant?)
Step 3:	Interpret marginal impact on model	(better explanatory power)
Step 4:	Check if other combinations/ functional forms of that variable improves model	

If Step 2 OR Step 3 is a NO, then this variable is NOT a good predictor of price and is thus discarded.

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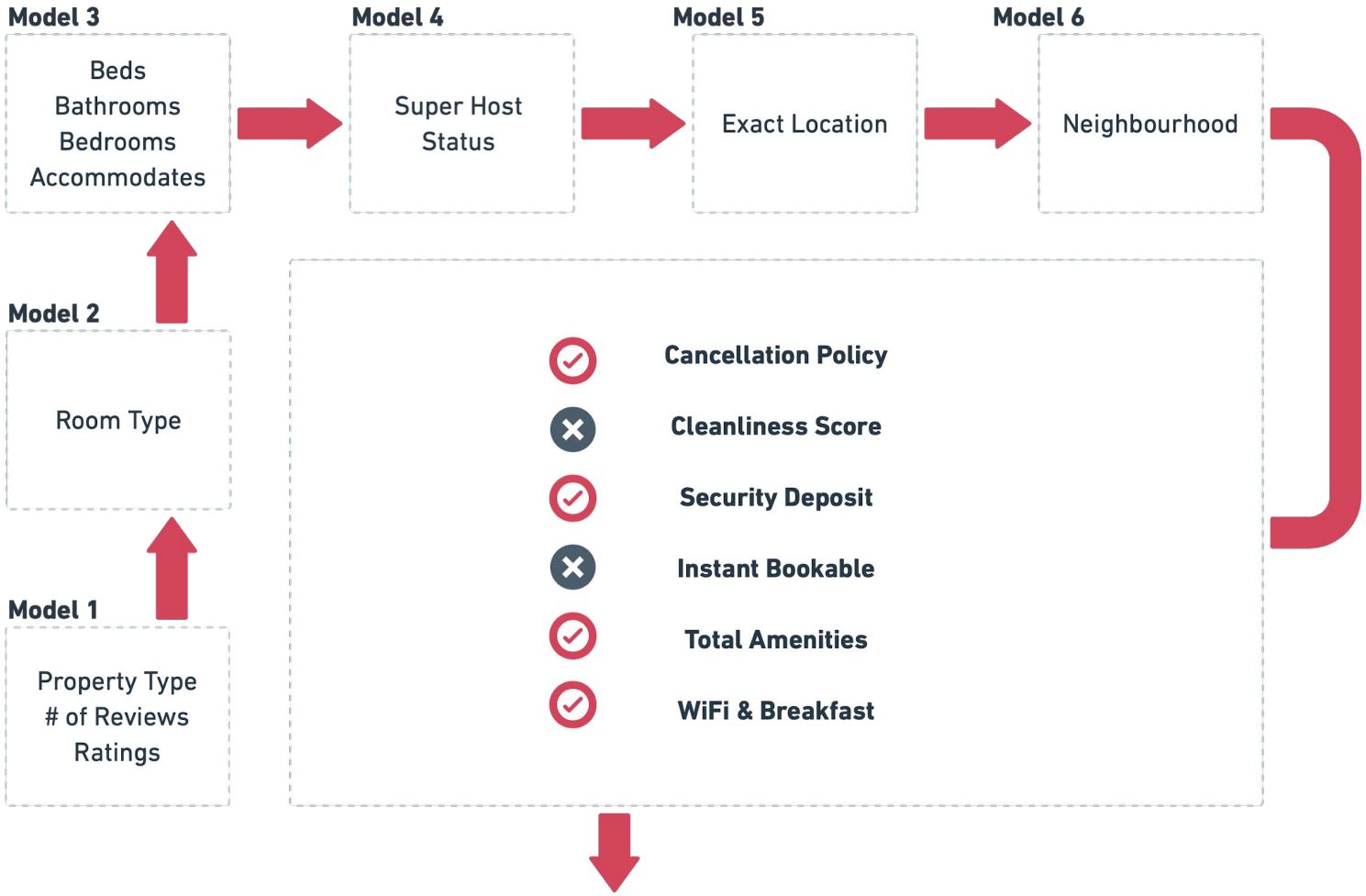
Model Development



Final Model

Residual Standard Error : 0.519 on 18546 degrees of freedom
Adjusted R-Squared : 0.543

Price Prediction

Our imaginary Airbnb has the following **base case** characteristics:

- ➔ Apartment
- ➔ Private room (x1 bed and bathroom for x2 people)
- ➔ Has at least 10 reviews
- ➔ Requires a rating of at least 90
- ➔ WiFi (assuming all Airbnbs in Beijing provide this amenity)

Case 1	**Case 2**	**Case 3**	**Case 4**	**Case 5**
Ring 2	Ring 2	Ring 5	Ring 5	Ring 5
25 Amenities	24 Amenities	24 Amenities	15 Amenities	15 Amenities
Super Host	Super Host	Super Host	Super Host	~~Super Host~~
+ Breakfast	~~+ Breakfast~~	~~+ Breakfast~~	~~+ Breakfast~~	~~+ Breakfast~~
+ $20 Deposit	+ $20 Deposit	+ $20 Deposit	+ $20 Deposit	~~+ $20 Deposit~~
$1,491	**$1,173**	**$939**	**$882**	**$807**