Solo Trips (15%)

Group Trips (9%)

Couple Trips (58%)

Family Trips (18%)

# Theoretically Stats | Azka Javaid, Andrew Kim, Brendan Seto, Jason Seto

# Class Descriptions

- ## Data grouped by user's trips
  - User ID, search terms
  - Reduced size by 20%!

- ## Useful for Advertisements
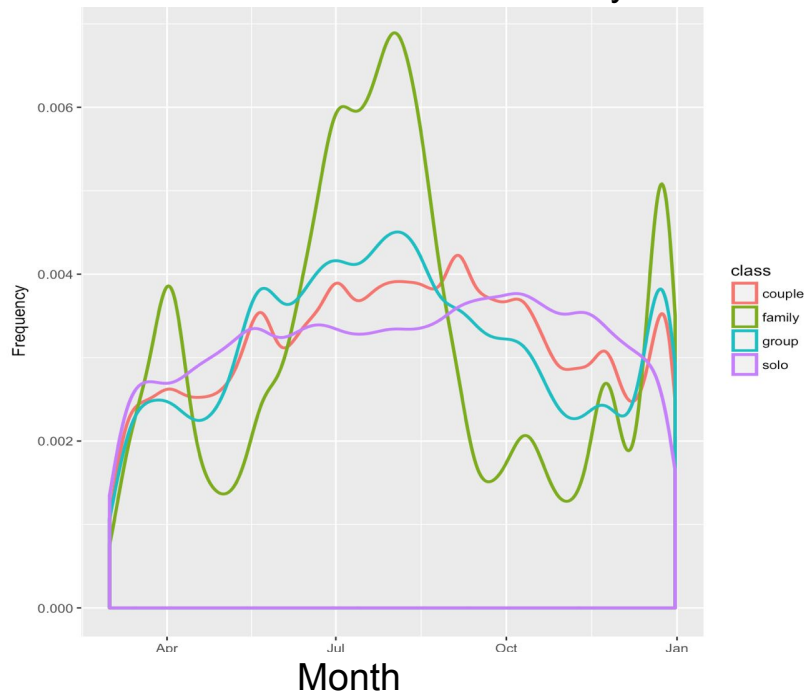  - Families: more expensive, more competition

Coefficients of Multinomial Logistic Regression (Relative Odds to Couple)

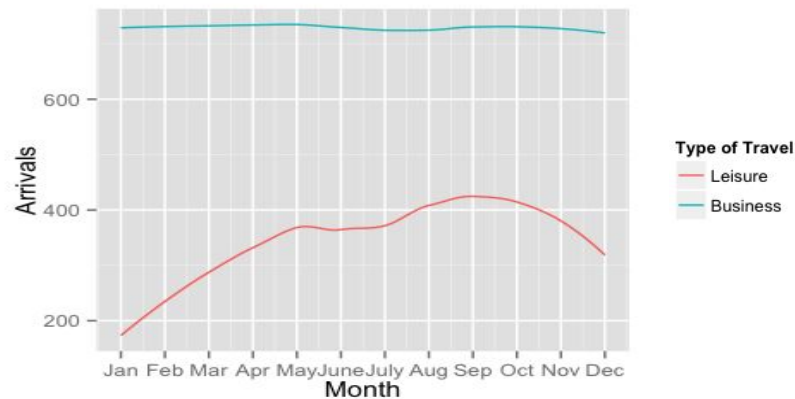|  | totaltimes | stayduration | ave_dist | ace_price |
|---|---|---|---|---|
| family | 0.0177 | 0.0343 | 0.04050 | 0.0729 |
| group | 0.0111 | 0.0359 | -0.00863 | -0.0000 |
| solo | 0.0175 | 0.0357 | -0.02850 | -0.1070 |



Class Importance Plot (Accuracy = 59%)
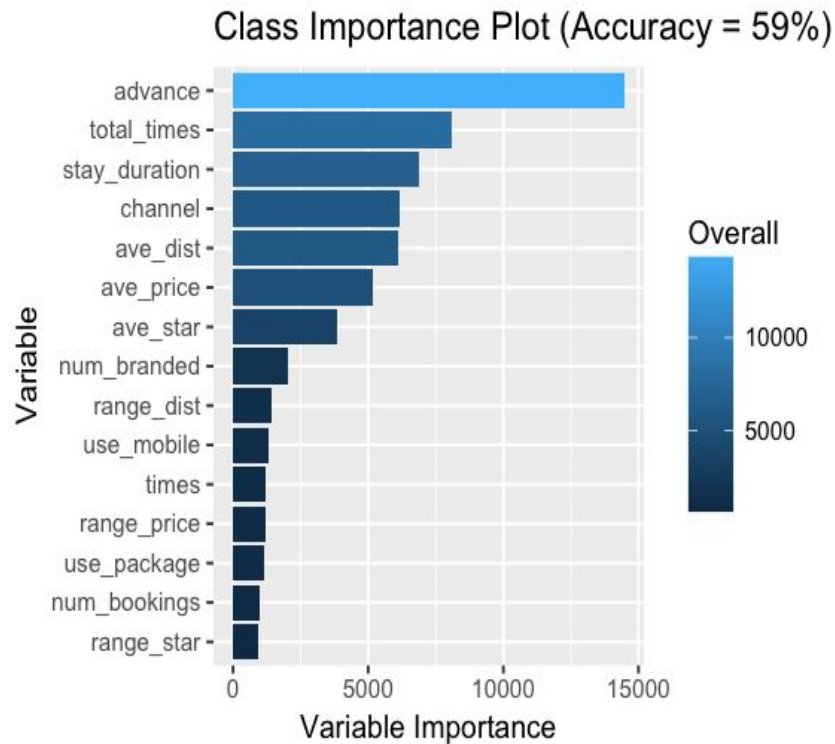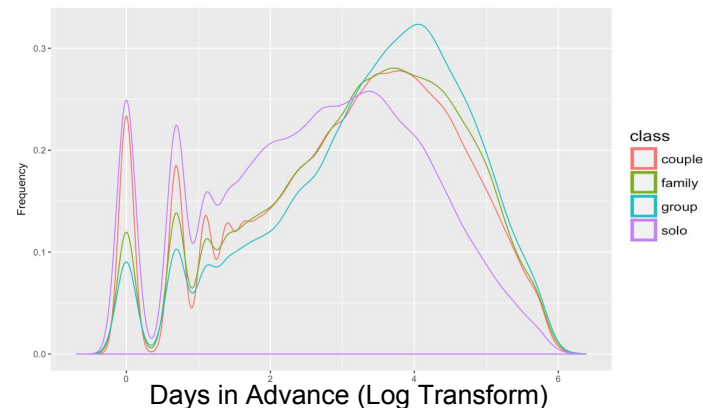
# Trends Over Time

### Distribution of Check-in Times by Class



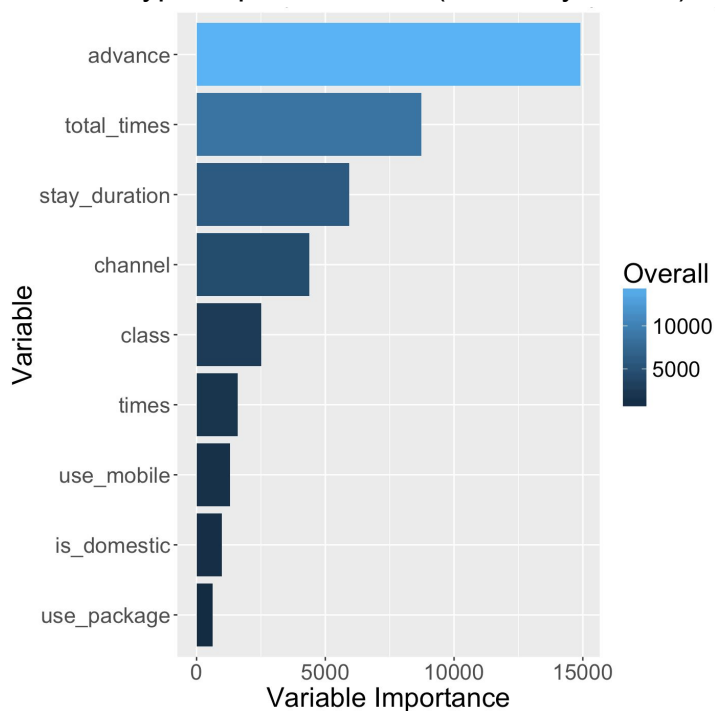### Arrivals to UK Customs (External)



### How Far in Advance People Book

# Hotel Clustering

Hotel Type Importance Plot (Accuracy = 68%)



- ## 4 Different Types
  - ### Cheap/Expensive, Popular/Not

- ## Useful for Search Algorithm
  - ### Solo: Cheap foremost importance, unpopular also prefered

| Coefficients of Multinomial Logistic Regression (Relative Odds to Cheap and Popular) | | | | | | |
|---|---|---|---|---|---|---|
| | advance | total_times | stay_duration | family | group | solo |
| Cheap,Unpopular | 0.000016 | -0.000673 | 0.01480 | -0.0885 | -0.1100 | 0.157 |
| Expensive,Popular | 0.000795 | 0.008900 | 0.01540 | 0.1000 | -0.0352 | -0.235 |
| Expensive,Unpopular | 0.000827 | 0.012600 | 0.00709 | 0.1280 | -0.0132 | -0.234 |