A Justification for Adding "Business or Not" to the Expedia Search Bar

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Introduction

According to 2014 reports, the logistics and transportation industry is the tenth most profitable industry in the United States. Underscoring these reports are data from the US Travel Association which suggest direct spending, by resident and international travelers, in the U.S. average $2.6 billion a day, $108.1 million an hour, $1.8 million a minute and $30,033 a second.

In 2014, compiled popularity metrics pointed to the following rank order of top booking sites: Booking.com, TripAdvisor sites, Expedia sites, Hotels.com, and Airbnb sites. Despite Expedia's current rank, the report notes the rapid increase in popularity of Airbnb, and points to the service's **"addictive"** app design, and search results, as the primary reasons travelers book with this site. With that, **right now** the face of Expedia's future could be changed by leveraging more flexible and user search queries, specific to the traveler.

Specific Aim

To help Expedia provide better hotel recommendations that are travel type (e.g. business or not) specific, by observing trends in successful bookings.

We made the following assumptions regarding the definition of a business travel type: 1) Travelers on business do not go with children and 2) Travelers on business have no more than 1 adult per room.

Our Methods

After defining business travel, we generated a dataset that contained travel-type specific bookings. We compared 95% confidence intervals for differences in means and proportions between businesses and non-businesses travel, for the following outcomes: star rating, is mobile, is branded, and clicks/booking. Using this as the basis for the differences in booking behaviors between groups we started to explore potential use cases and applications of our findings.

Results

Our analysis found that, according to our definition of "business or not", business travels book hotels with significantly greater star ratings, and more branded hotels, than non-business travelers. Alternatively, non-business travel make significantly more bookings on mobile. Additionally, non-business travelers take more click to book, than business travelers. The outputs above confirmed our hypothesis that the two groups are different in nature. After seeing these data, we began to explore other differences in travel behaviors between groups. Firstly, the peak season for business travel is around the end of September/early October, alternatively the majority of non-business travel take place in the June/July months. When looking at destinations, we found that hotel countries were relatively similar for both groups. However, more business trips went to China and UEA, compared with non-business trips going to the Dominican Republic and Puerto Rico.

We also looked at booking location and found that they were very similar for both groups. However, when compared with city population there appears to be a discrepancy in the the number of booking coming from Europe. That is, given the population of Europe Expedia does not get enough bookings from European cities.

Future Directions

To elucidate the differences in booking behaviors between business and non-business travelers, Expedia should look to add this to their search criteria and use it to refine their algorithm that returns search queries.