Applying Iterative Design Principles to a Live Product

Name: Essosso Belinga Emile
Date: Tuesday 21st July, 2020

Step 1

Select KPIs

&

Evaluate Previous Multivariate Experiment Results

Select KPIs for Flyber Analyses

1) **Below are some KPIs based on Flyber's business model:**
   - Number of booked rides.
   - Number of users.
   - Number of unique users per day.

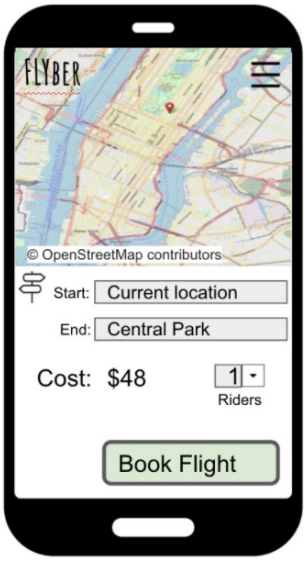
2) **KPI necessary to Flyber but not calculable with the current dataset**:
   - Customer Acquisition Cost (CAC). Marketing cost spent to have a potential customer.

Describe the First Multivariate Experiment

Control

Experiment 1

Experiment 2



Experiment 3

There are 2 variables in this multivariate experiment. The first one is the text field **“Tip Included”**, the second one is the the **text on the button** (Fly Now or Book Flight). These 2 variables gave rise to 4 tests (including the control test)

Control:

In the control test, we see that the text field “Tip Included” was implemented and the text on the button was “Book Flight”

Experiment 1:

In this experiment, the the same text field was included as seen in the control test, but the text on the button was changed to “Fly Now”

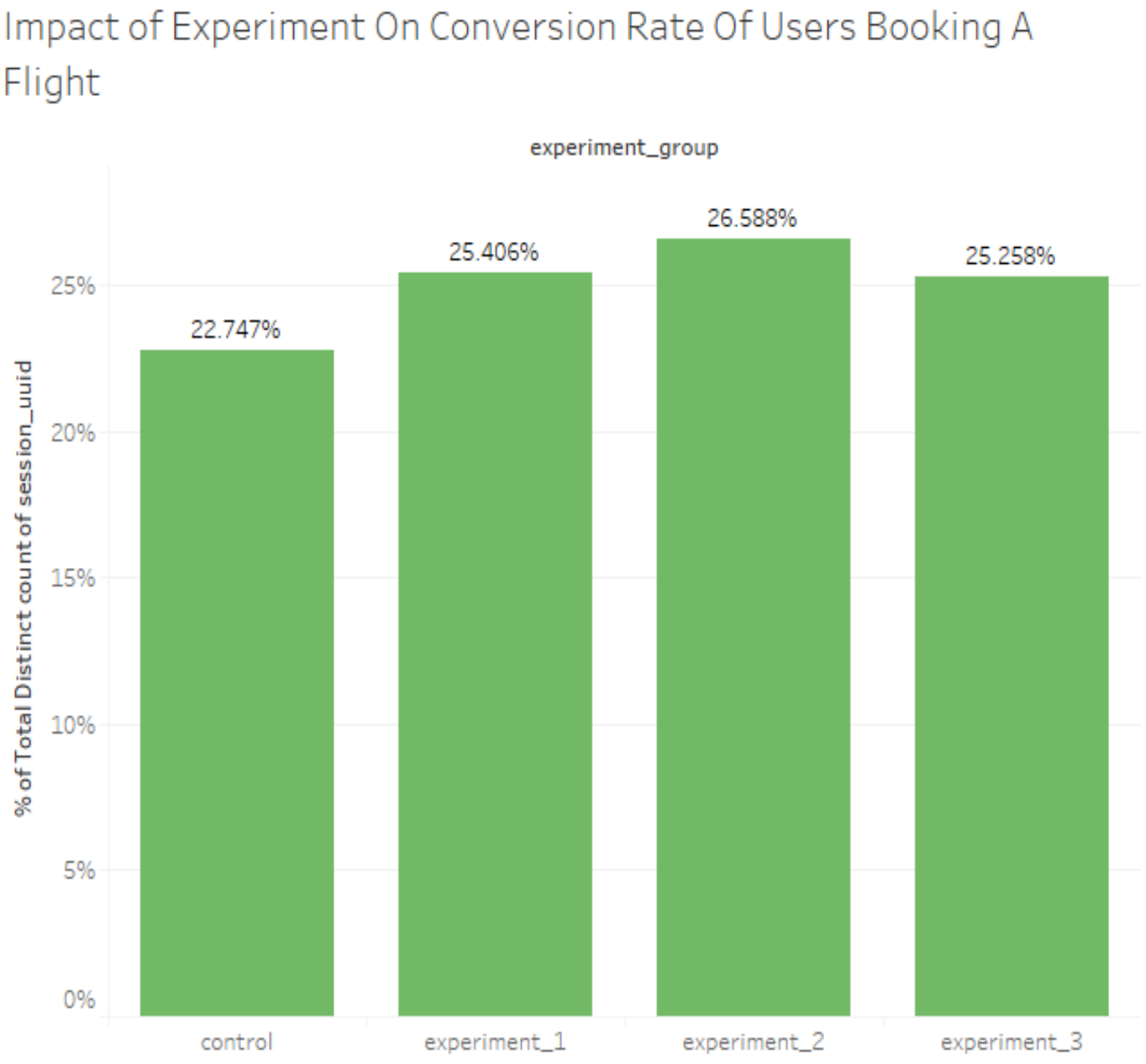
Experiment 2:

Here, the text field was removed and the text on the button was “Book Flight”, just like in the control group.

Experiment 3:

Just like in experiment 2, the text field “Tip Included” was removed also, but the text on the button was “Fly Now”.

Review Multivariate Test Results: Visualization



% of Total Distinct count of session_uuid for each experiment_group. The data is filtered on event_type, which keeps begin_ride. Percents are based on the whole table.

Review Multivariate Test Results: Significance Test

- A two-sided t-test was carried out with the help of an online calculator(abtestguide.com) with a confidence interval of 95% and the results are as followed:
  - When I checked for the statistical significance between Control and Experiment 1 the p value was 0.1.
  - Control and Experiment 2 resulted in a p value of 0.0680
  - Lastly, I checked for control and experiment 3 and the p vaulue was 0.156

- Based on the two-sided t-test we carried, all values were statistically not significant, becaues their p values were all greater than 0.05. Experiment 2 came close with 0.0680 which is around 0.05. So based on the closenes of this values, I will recommend expanding Experiment 2 because it shows more users are likely to book a ride through it.
  It was observed that 56,688 users opened the app and 180 ended up booking a ride from it. If placed under more observations, Experiment 2 can attract more Flyber users

Step 2

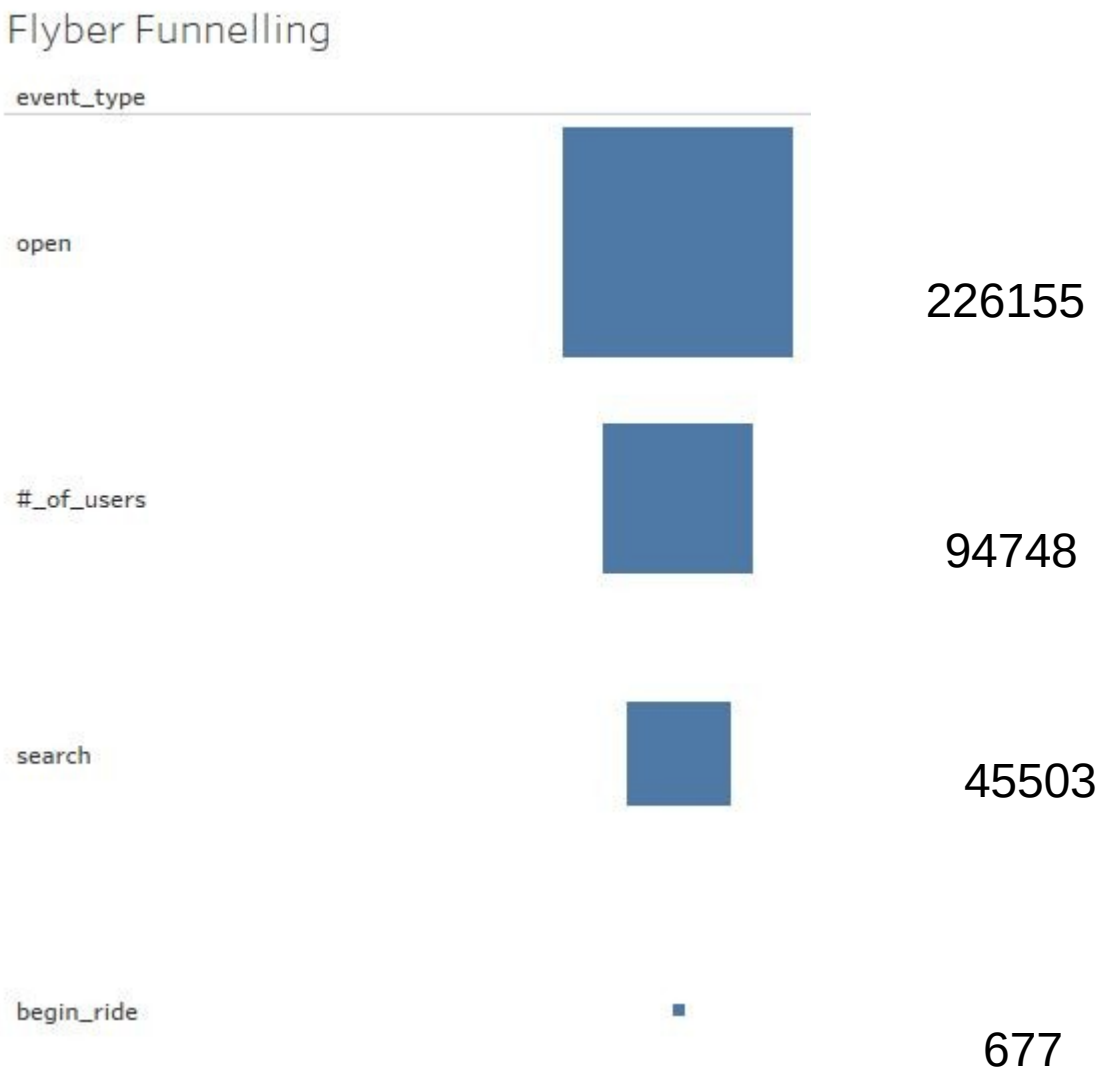
Funnel & Cohort Analyses

User Funnel

Identifying the different stages the user funnel

From the dataset we could identify broadly 4 tunneling steps which include;

- Open
- #_of_users(Number of people who sign in)
- Search
- Begin Ride



User Segments

- The first attribute in the dataset that allows for segment analysis is age. Below is a table representing all the different segments and the number of users for each segment.
- The segment with the highest number of users as shown on the table is users who have 50+ years with **176,195 users**.

Table Showing The Number of Users For Each Age Segment

age	
50+	176,195
40-49	95,168
18-29	57,364
30-39	38,356

Sum of Number of Records broken down by age.

User Segments

- The second attribute in the dataset that allows for segment analysis is user neighborhood. Below is a table representing all the different segments and the number of users for each segment.
- The segment with the highest number of users as shown on the table is users who live in Manahattan with **257,259 users.**

Table Showing The Number of Users For Each Neighborhood Segment

user_neigh..	
Manhattan	257,259
Brooklyn	73,880
Queens	18,088
Bronx	10,802
Staten Island	7,054

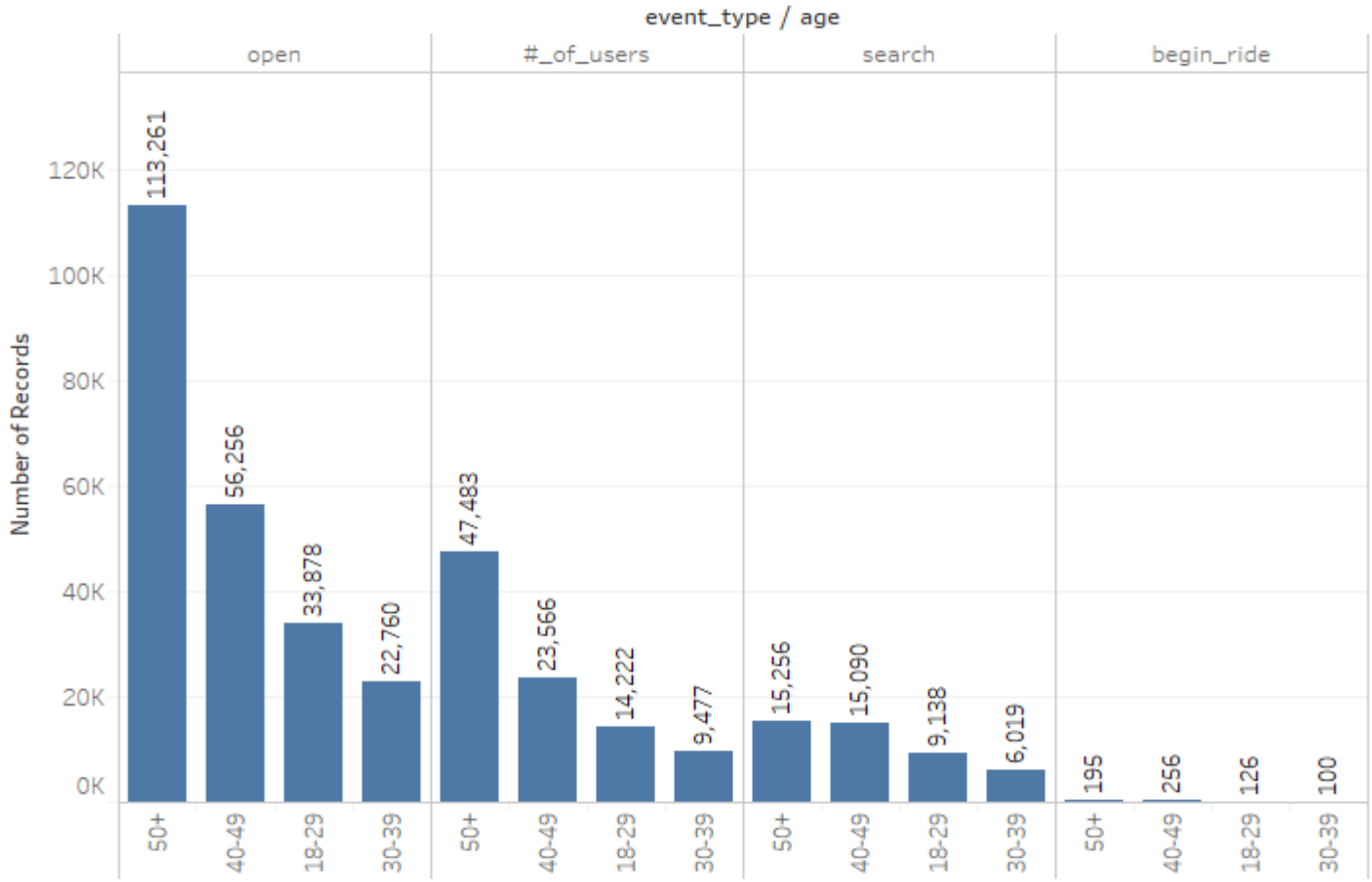
Sum of Number of Records broken down by user_neighborhood.

Segment Analysis of Funnel

Identify Opportunities for Improvement

- A funnel analysis by age was carried out and it was observed that the segment with high underperformance was the segment of 50+ years, with over 113,261 opening and only 195 bookings. A massive drop was witnessed between opening the app and signing up. With more than 58% of users dropping off.

Funnel Analysis By Age



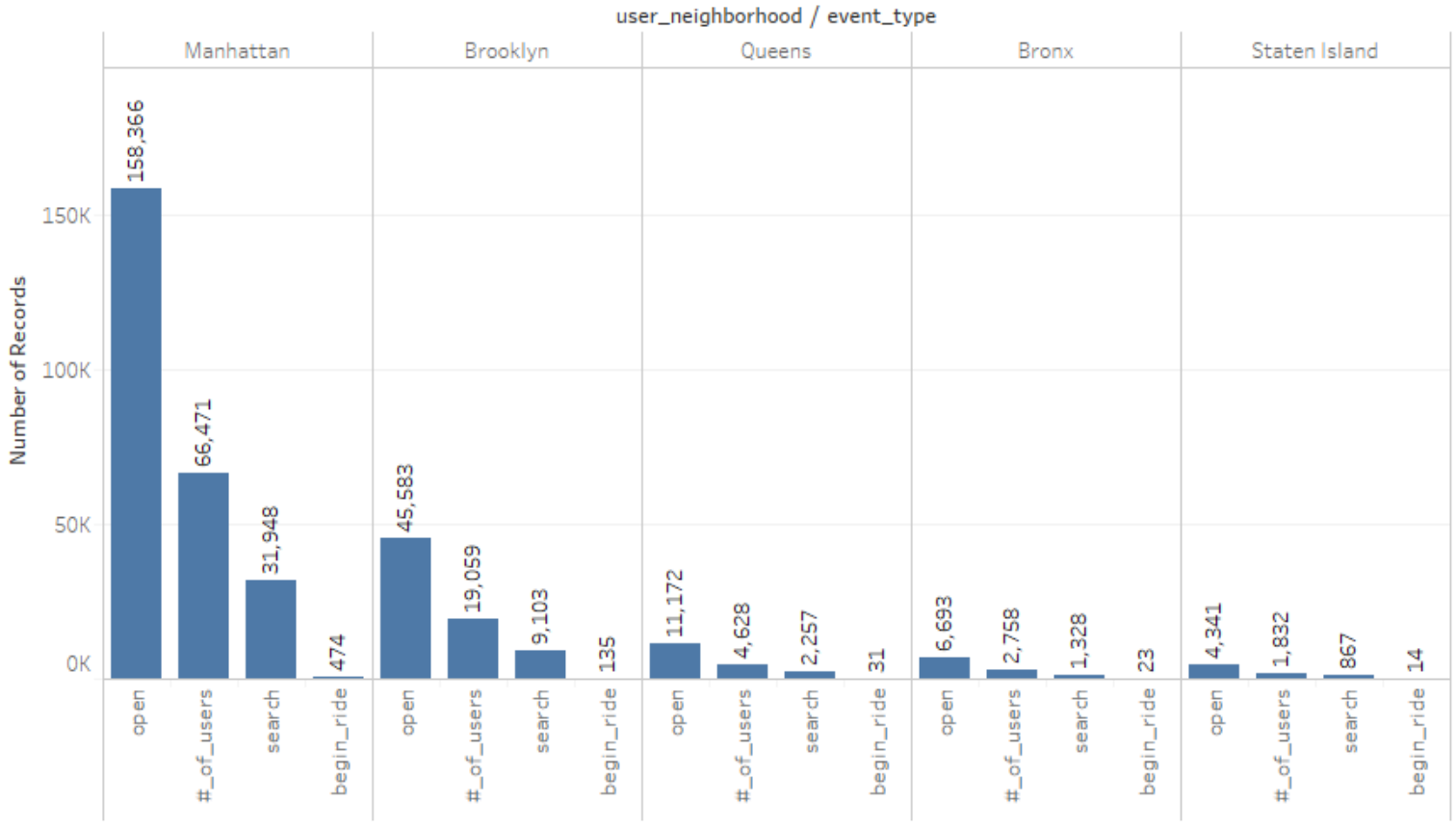
Sum of Number of Records for each age broken down by event_type.

Segment Analysis of Funnel

Identify Opportunities for Improvement

- A funnel analysis by neighborhood was carried and it was observed that the segment with high underperformance was Manhattan. That is over 158,366 users living in Manhattan open Flyber but only 474 rides are booked. A massive drop was observed in the 2nd step, that is from opening the app to signing in. With a drop off rate of about 58%.

Funnel Analysis By Neighborhood



Sum of Number of Records for each event_type broken down by user_neighborhood.

Step 3

Hypothesis & Next Steps

Review Qualitative Data

Hypothesis:

- If the user interface of the flyber app is made appealing and visible enough, more rides will be booked.

Below I will give some user quotes that will support/justify my hypothesis.

- ***“If the timing isn’t different, I’ll take a taxi or uber to save money.”***
- ***“Time is money and Flyber saves me time! But I let my assistant actually book the Flyber because the first few times I tried booking, the instructions were too small.”***
- ***“I usually just use Uber because it remembers my addresses and has all my favorite places saved, so I guess I always just open that up since it is so convenient and saves me time.”***

Suggested Features & Experimentation Plan

- We believe that the relatively low booked flights is observed because users aged 50+ years find it inconvenient to book a flight. And that if we were to create an auto-complete feature, we will see an increase in the number of flights booked.

  I will suggest two features to match the above hypothesis. They include

  - Auto-complete feature
  - Bigger text fields.

- Those exposed to these changes should involve, users with 50+ years.

- An additional metric will be to store user destination to serve the auto-complete feature.

Suggested Features & Experimentation Plan

Now I will describe a Multivariate test with a control and 3 experiments.

- Control: First we will set a control test where none of the 2 features are present and the app will assume it’s current state.
- Experiment 1: Here we will include both auto-complete and bigger text fields.
- Experiment 2: Here the bigger text fields are removed and the auto-complete is implemented
- Experiment 3: In this experiment, we will take out the auto-complete feature, and we’re going to add only bigger text fields to the control test.

Appendix

Raw Data

Additional Info

An additional metric would be to implement an “Ads” feature to reduce their pricing. That is when you watch a considerable length of advertisements you receive a discount of 5%.

Customer Acquisition Cost – We need to know how much we spend for ads and how much it takes new users engaged on the app.

Retention Rate: We need to take into account the subscribers who are still subscribed after a specific time period.

Sessions per day: A total number of sessions triggered by the users per day