

# Applying Iterative Design Principles to a Live Product





**Step 1**  
**Select KPIs**  
**&**  
**Evaluate Previous**  
**Multivariate**  
**Experiment Results**

# Select KPIs for Flyber Analyses

- For the data available, which KPI(s) best match Flyber's business model?
- How would you calculate these KPI(s) using the available event data logs?
- List other KPIs that might be important to Flyber but are not calculable based on available data

KPIs	Ways of calculation
Daily Users	Calculate the number of daily users using a combination of both COUNT and UNIQUE functions.
MAU/WAU/DAU	Calculate the average number of users on daily/weekly/monthly basis using AVERAGE function.
Age Distribution	Calculate the age distribution by using COUNTIF function.
Neighborhoods Distribution	Calculate the neighborhoods distribution by using COUNTIF function.
Number of Events	Calculate the number of events by using COUNTIF function.

3. 1. MAU/WAU/DAU from the driver's POV.
2. Average waiting time per ride.
3. Average ride time.
4. Average number of passengers.
5. NPM score.
6. Referral rate.

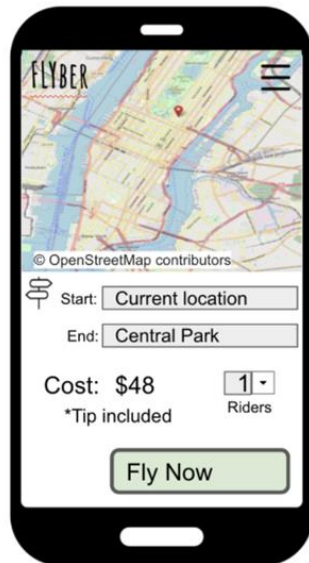
# Describe the First Multivariate Experiment

- Describe the elements tested during the multivariate experiment. You can use the image below when referencing the tests

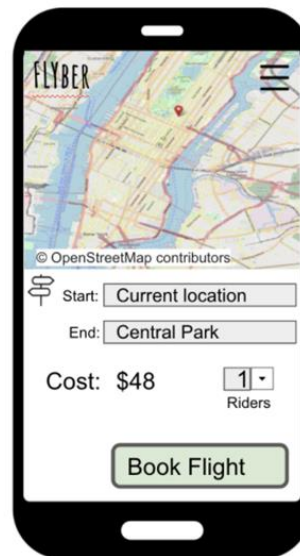
Control



Experiment 1



Experiment 2



Experiment 3



There are 2 changes with 2 variations each which resulted in 4 variations including the original(control). The changes are to include/exclude the info about the tip that was originally included and the second to change the button from 'Book Flight' to 'Fly Now'.

1. Control: With '\*Tip included' and Button 'Book Flight'.
2. Experiment 1: With '\*Tip included' and Button 'Fly Now'.
3. Experiment 2: Without '\*Tip included' and Button 'Book Flight'.
4. Experiment 3: Without '\*Tip included' and Button 'Fly Now'.

# Review Multivariate Test Results: Visualization

- Provide a visual representation of the impact of the experiment on the conversion rate of users booking a flight (out of all users opening the app)

Pages

Filters

Marks

Automatic

Color

Size

Text

Detail

Tooltip

CNTD(Event U..

Columns

Experiment Group

Rows

Event Type

Sheet 1

Event Type	Experiment Group			
	control	experiment_1	experiment_2	experiment_3
open	56,390	56,390	56,688	56,687
#_of_users	23,612	23,626	23,953	23,557
search	11,323	11,300	11,581	11,299
begin_ride	154	172	180	171

# Review Multivariate Test Results: Significance Test

**Determine if there was a significant difference between the experiments and control states.**

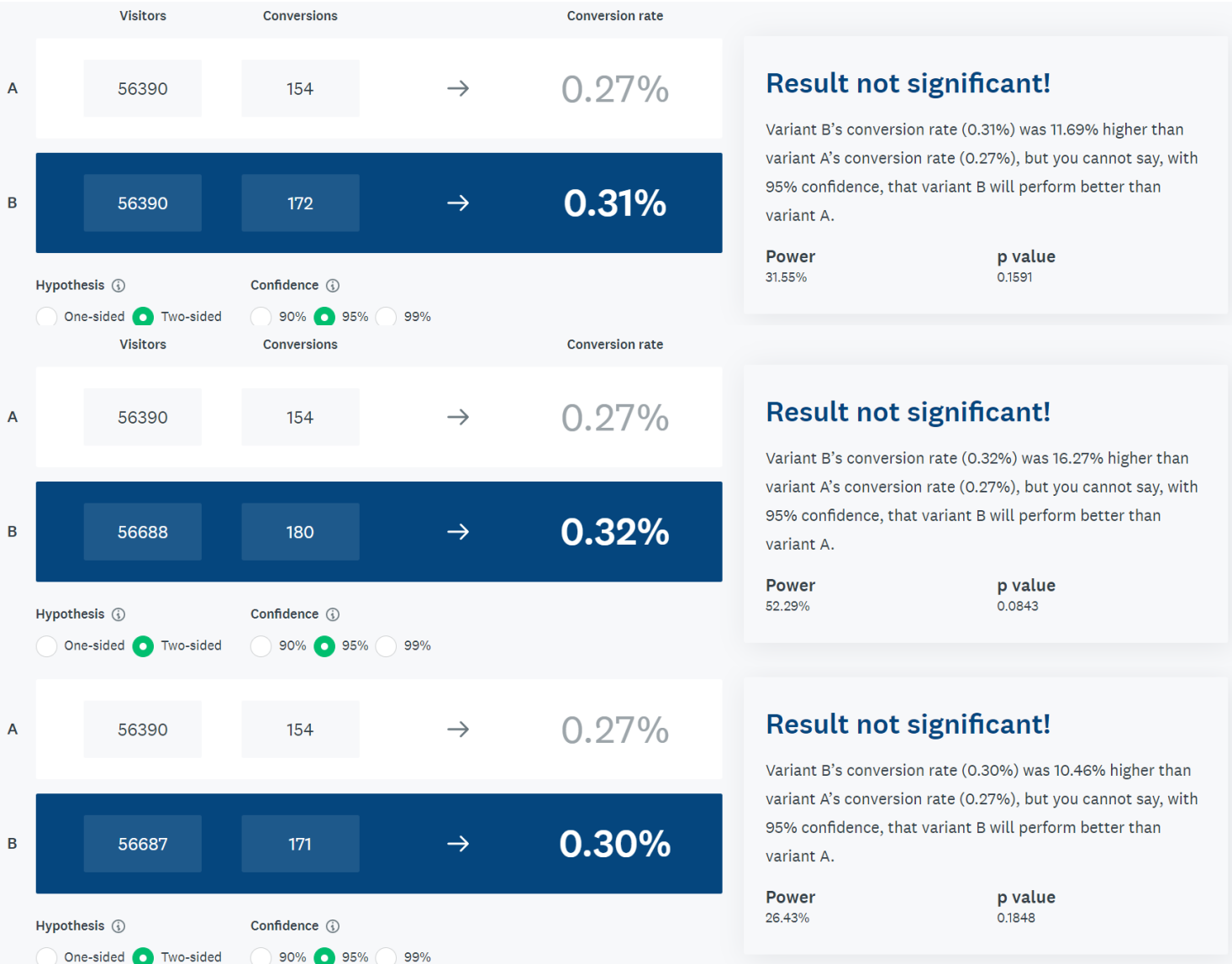
- Explain how you would perform a t-test to determine if the experimental results had a greater impact on the booking conversion rate than the control state

Calculate A/B Test once for each button and once with/(out) tips.  
And steps would go as following:

1. Determine which test we are working on first, i.e. A: Button 'Book Flight', B: Button 'Fly Now'.
2. Determine target, i.e. number of rides.
3. Split users equally and randomly while maintaining the control group as the current ('Book Flight', )
4. Decide Confidence level, i.e. 95%

# Review Multivariate Test Results: Significance Test (Cont'd)

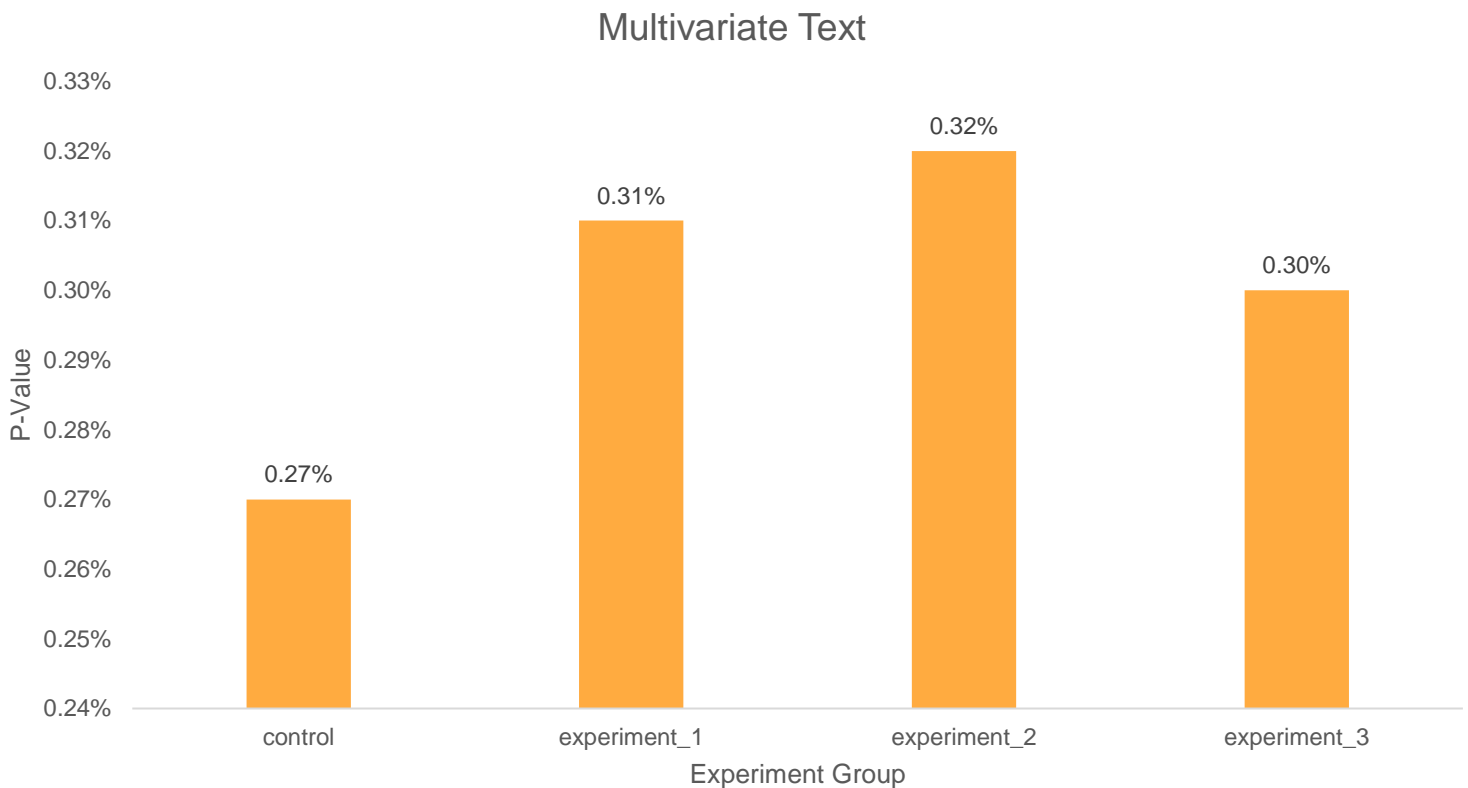
- List the test results (p value) for each experiment compared to the control



The first result is Control vs. Experiment 1, 2<sup>nd</sup> result is Control vs. Experiment 2 and 3<sup>rd</sup> result is Control vs. Experiment 3.

# Review Multivariate Test Results: Significance Test (Cont'd)

- List the test results (p value) for each experiment compared to the control (Cont'd)





# Review Multivariate Test Results: Significance Test (Cont'd)

- Using the statistical significance calculator of your choice, determine which experiments, if any, had a significant result at the 95% level. Include your calculations as part of your explanation
- Based on your statistical significance calculations, recommend if any of the experiments should be expanded

Based on the results I would not recommend any. Although, some gave more results, it is not likely that this is the main reason with a P Value above 0.025.



# **Step 2**

## Funnel & Cohort Analyses

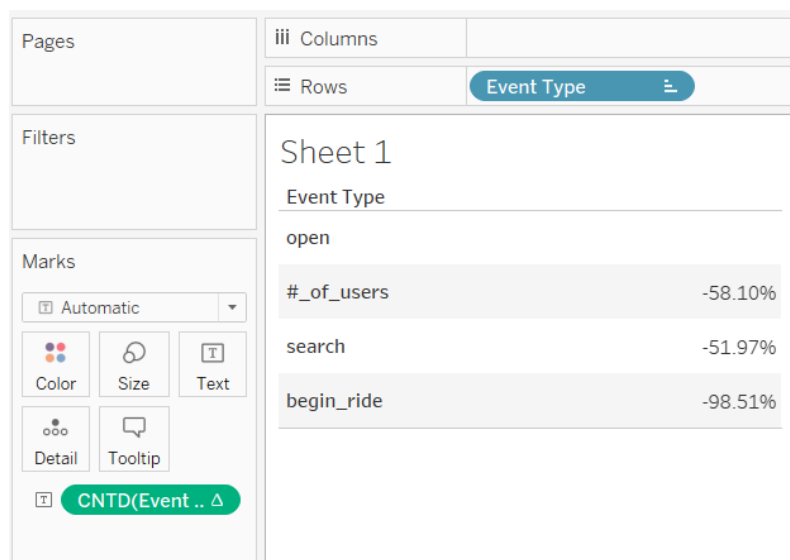
# User Funnel

## Identifying the different stages the user funnel

- Based on the event types in the data provided, list the 3 or more steps a user can take from opening the app to final booking of a ride

There are 4 event types that I believe are in this order: Open the app, Determine Number of Users, Search the route and Begin Ride.

- Provide a graph showing the funnel from step to step, including drop off rates.

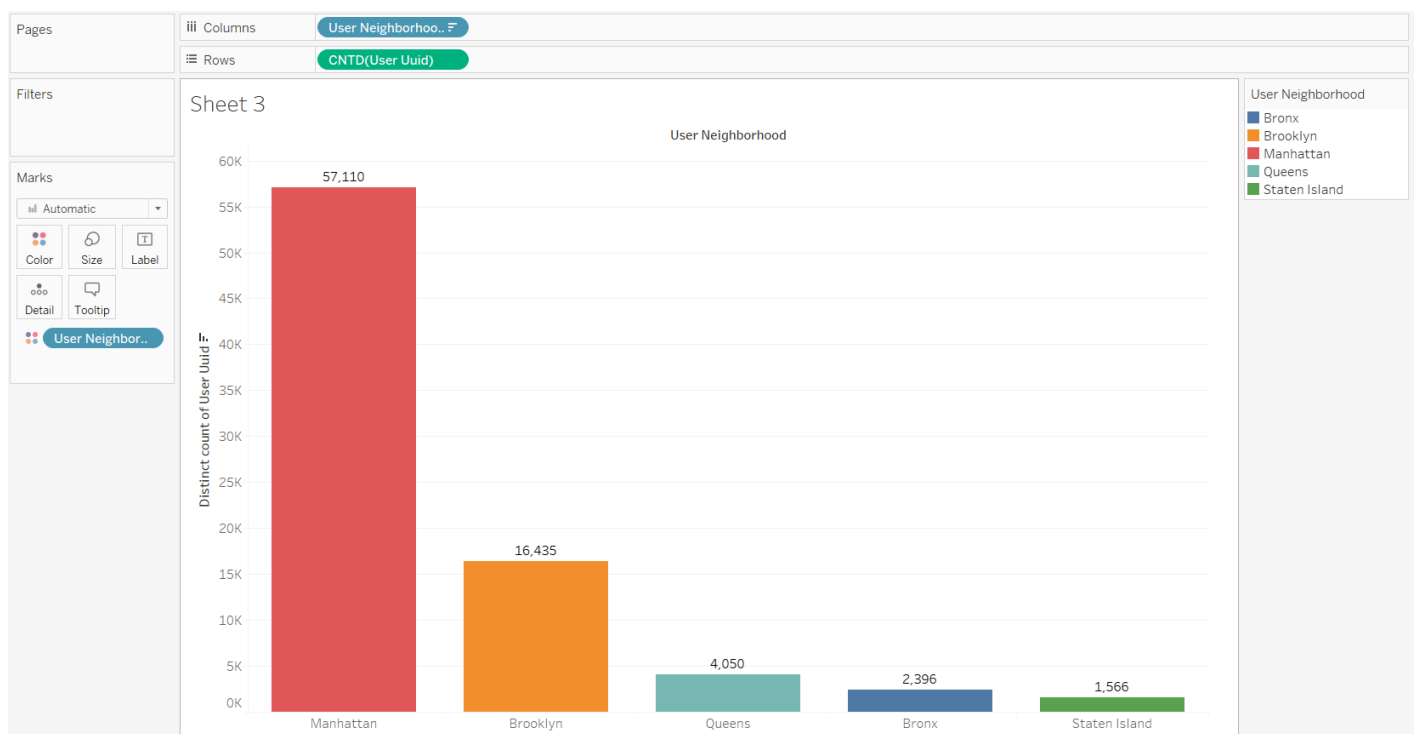


# User Segments

- Identify 2 demographic attributes present in the data that allow for segment analysis

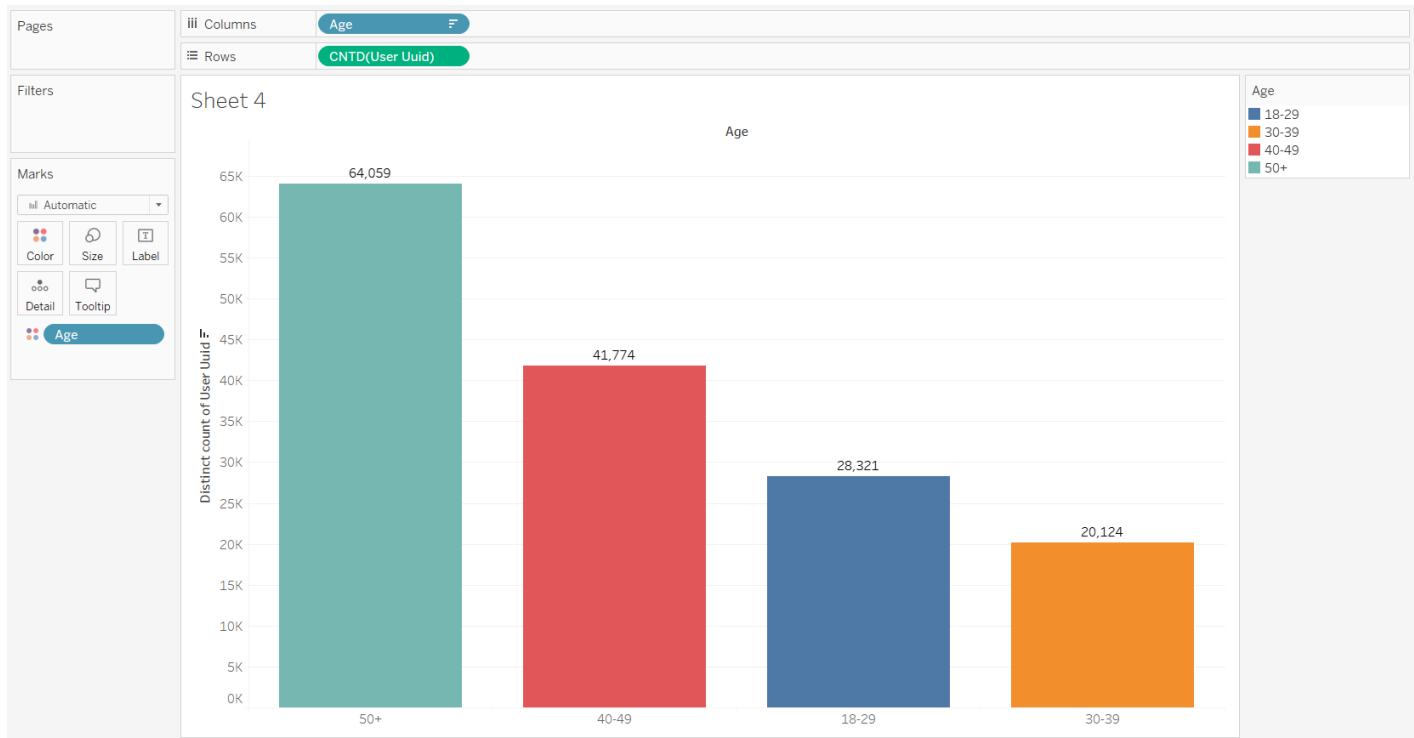
## Age and Neighborhoods.

- For each demographic attribute, provide the number of users in each segment group
- For each demographic attribute, identify the segment group with the largest number of users



# User Segments (Cont'd)

- For each demographic attribute, provide the number of users in each segment group
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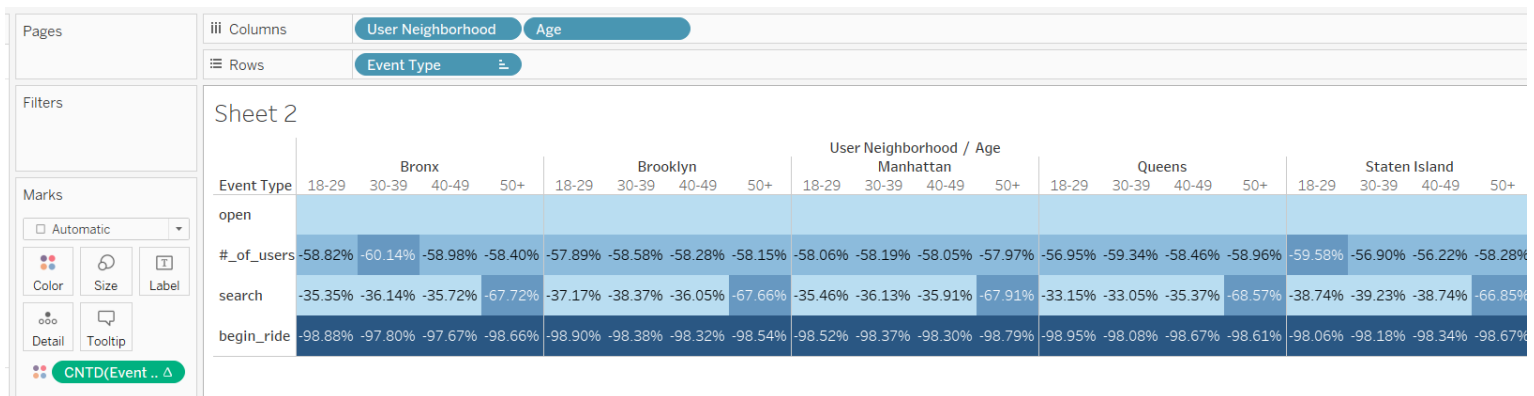


For each demographic they have been arranged descengingly based on the number of users. For the Neighborhoods: Manhattan was the largest with 57,110 users and for the Age: 50+ was the largest with 64,059 users.

# Segment Analysis of Funnel

## Identify Opportunities for Improvement

- Perform a funnel analysis by segment for all identified demographic attributes and describe the results
- If underperformance for a segment in an attribute is identified, add a visual showing the average funnel conversion by segment group for that demographic.



Based on the graph provided and the fact that the users of age 50+ are the most number of users on the app, there is a room for improvement in the conversion rates for 50+ in all neighborhoods from #\_of\_users to search as they are almost the double of the rest of the age groups. If we managed to decrease this drop rate, it is highly possible to increase the number of rides from the age 50+ and overall rides.



## **Step 3**

Hypothesis & Next  
Steps

# Review Qualitative Data

- Read user interviews to understand “why” any funnel under-performance seen in Step 2 might occur

Highlighting the age 50+, most of them mentioned they would “call” a taxi service if not flyber and therefore it is highly recommended to integrate a call in feature.

- List your hypothesis for what customer need is being under-served

My hypothesis is that we need to add a call option to help the users who are more into the call use our product.

- Provide 3 or more quotes as evidence for this hypothesis

1. “Drive my car or call a taxi service.” ` Tanner Cherry – 72 YO

2. “I have a personal car service on call. My assistant books Flyber whenever I'd be travelling during peak NYC traffic hours. 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.” ` Louis Jones - 70 YO

3. “Before Flyber, I'd call a taxi service on the phone.” ` Sapphire Dupont – 60 YO



# Suggested Features & Experimentation Plan

- Share your hypothesis using the following format: We believe [observed quantitative effect] Because [hypothesized user “why”] And that by [general change/opportunity for Flyber to improve] for [targeted cohort] we will see [expected effect ]

We believe the age group 50+ are not properly served. Because they are used to calling the cabs. And that by adding a call option for the age group 50+ we will see more rides and better conversions specially from #\_of\_users to search.

- Suggest 2 or more features that would match your hypothesis and determine a plan for multivariate testing, including describing the control and experimental conditions

1. Saved Addresses. It was mentioned by one user that it was more convenient to them to use Uber because of the saved addresses.

2. Voice to Text. The might be a great initiative to overcome the problem of needing a call by the user.

I would follow an A/B test of 4 experiments.

Control: Without Saved Addresses, Without Voice to Text.

Experiment 1: Without Saved Addresses, With Voice to Text.

Experiment 2: With Saved Addresses, Without Voice to Text.

Experiment 3: With Saved Addresses, With Voice to Text.

# Suggested Features & Experimentation Plan

- Determine who should be exposed to the experimental changes

Random and equal samples of 50+ age group.

- List any additional metrics that would be helpful to collect from your suggested features

1. Number of users who made calls and how many times.
2. Number of users who used the loyalty points and how many times.
3. Number of users who used the saved addresses feature and how many times.