

Applying Iterative Design Principles to a Live Product





Step 1
Select KPIs
&
Evaluate Previous
Multivariate
Experiment Results

Select KPIs for Flyber Analyses

Using the data available, the KPI(s) that match Flyber's business model are the following:

- **Number of users per day:** This can be counted using the event log with the distinct user_uuid group by day.
- **Average number of rides per user per month:** This can be counted using the event log with the distinct event_uuid associated to event_type = 'ride_begin' grouped by user_uuid and month.

Other KPIs that might be important to Flyber but are not calculable based on available data:

Finding New Customers

- User lifetime value
- User acquisition cost

Customer Satisfaction

- Survey customers about their happiness with their rides and Flyber's app

Customer Support

- Number of customer support tickets
- Average time to address customer support ticket

Revenues and Costs

- Net profit: revenue after all costs
- Revenue per month from rides fees
- Cost of vehicles maintenance

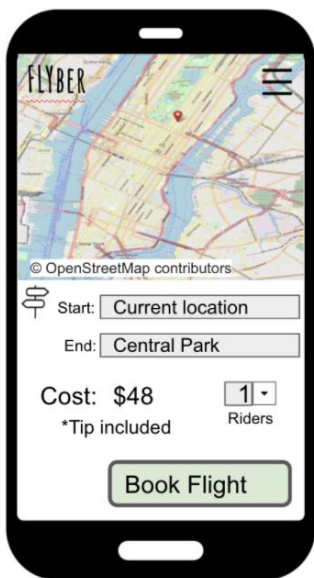
Describe the First Multivariate Experiment

With the purpose of finding the most optimal design for Flyber's app a multivariate experiment were 3 variations were tested along with the control version.

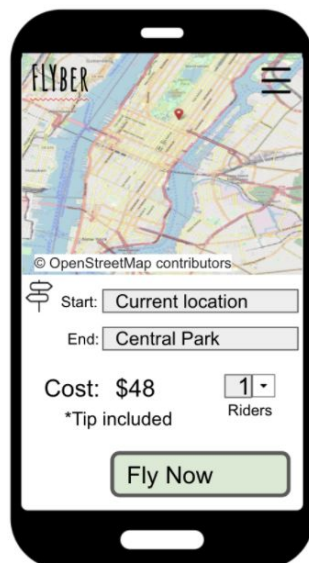
The tested features were:

- "Book flight" button vs "Fly now" button
- "* Tip included" message

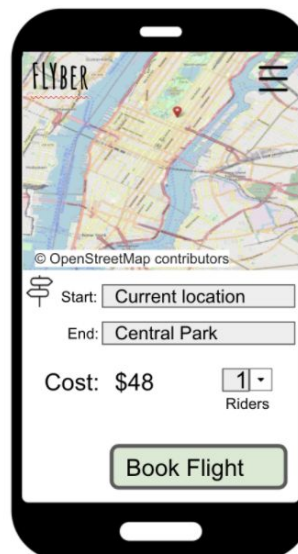
Control



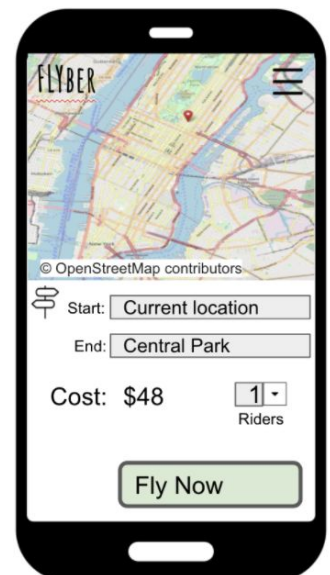
Experiment 1



Experiment 2



Experiment 3



Review Multivariate Test Results: Visualization

- In the following tables we can see total amount of users in each test groups and how many of those users booked a ride.

Amount of users that participated in each test

experiment_group...	Users
1. control	32,125
2. experiment_1	32,005
3. experiment_2	32,216
4. experiment_3	32,105
Grand total	81,557

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Amount of users that converted (booked a ride)

experiment_gro...	Amount of users
1.. control	154
2.. experiment_1	172
3.. experiment_2	179
4.. experiment_3	171
Grand total	676

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Review Multivariate Test Results: Visualization

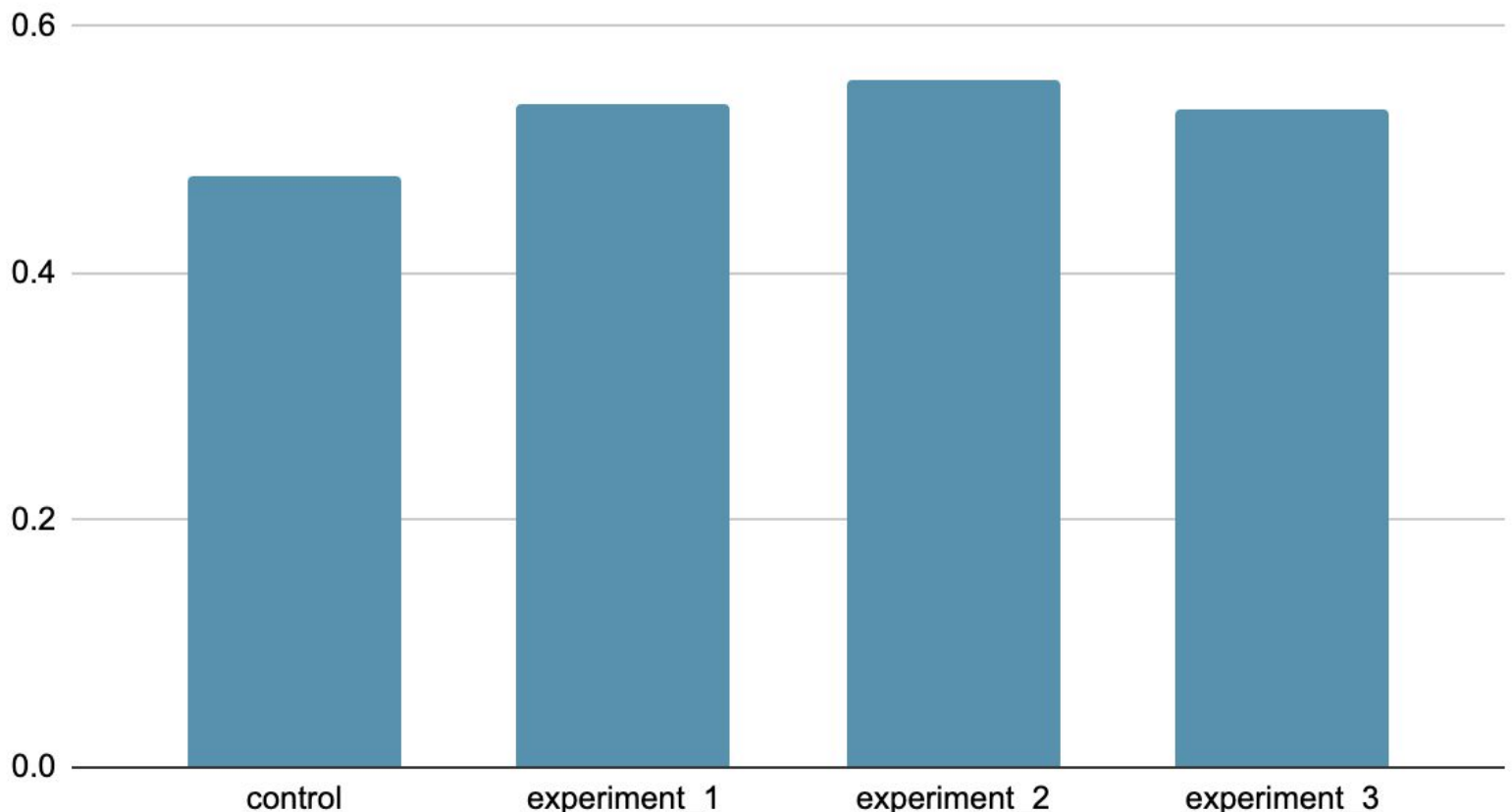
- Using the numbers presented we can calculate conversion rate for each test and control group.

	Die Anzahl der Besucher auf der Seite:		Die Anzahl der Gesamt-Conversions:		Conversion- Rate
A	32125		154		0%
B	32005		172		1%
C	32216		179		1%
D	32105		171		1%

Review Multivariate Test Results: Visualization

- We can see that experiment 2 had a slightly better conversion rate among the others, but there's not such a big difference and it's not decisive enough to draw conclusions.

Multivariate test Conversion rates



Review Multivariate Test Results: Significance Test

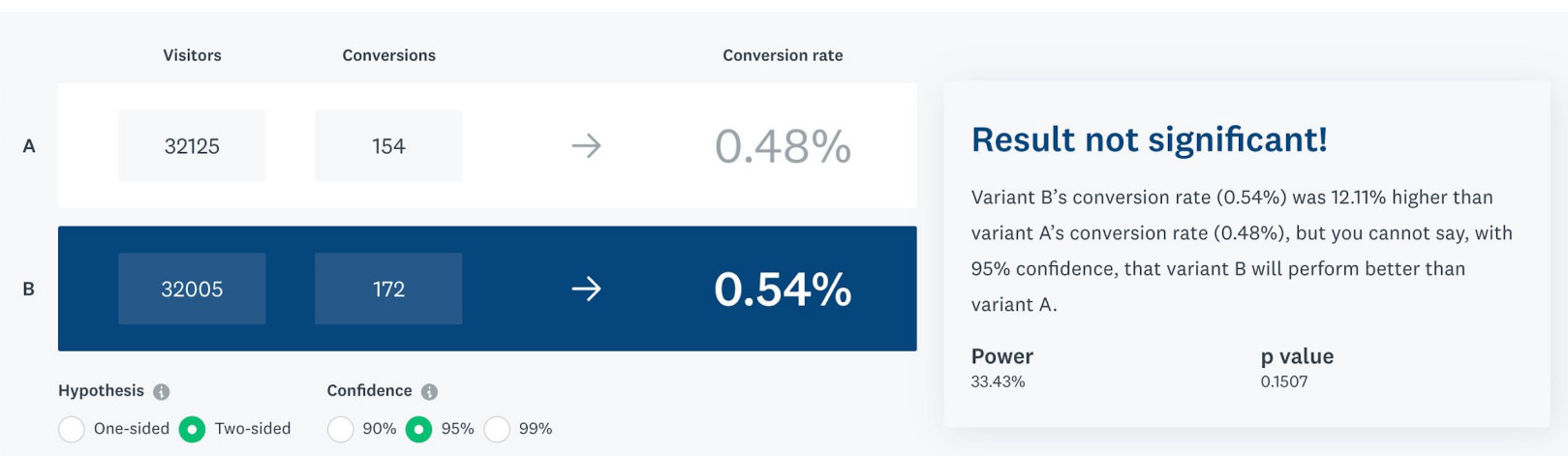
Determine if there was a significant difference between the experiments and control states.

Steps to perform a t-test:

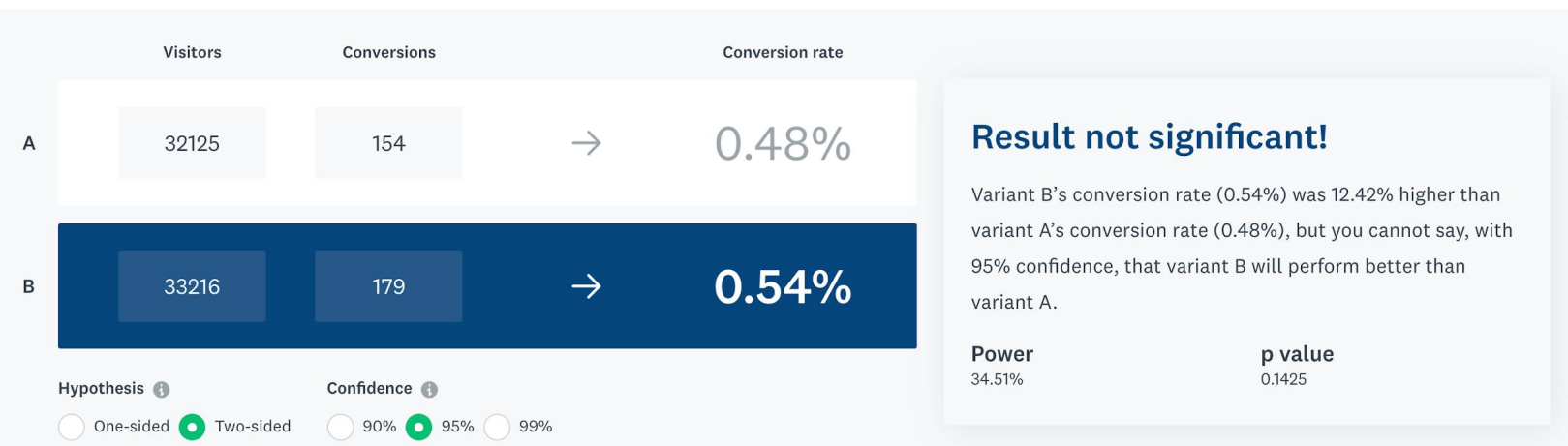
1. State the null hypothesis: there is no difference in the booking of a ride rate between users in the control and test groups. This is what we want to reject.
2. State the alternative hypothesis: there is a difference in the booking of a ride rate between the test and control groups. This is what we want to accept.
3. Set confidence threshold: 95%
4. Using a [statistical significance calculator](#), determine which experiments, if any, had a significant result at the 95% level.

Review Multivariate Test Results: Visualization

- Control group vs experiment 1: p value is 0.1507, having stated a 95% confidence (0.25) this is not a significant result to determine that experiment 1 will perform better than the control version.

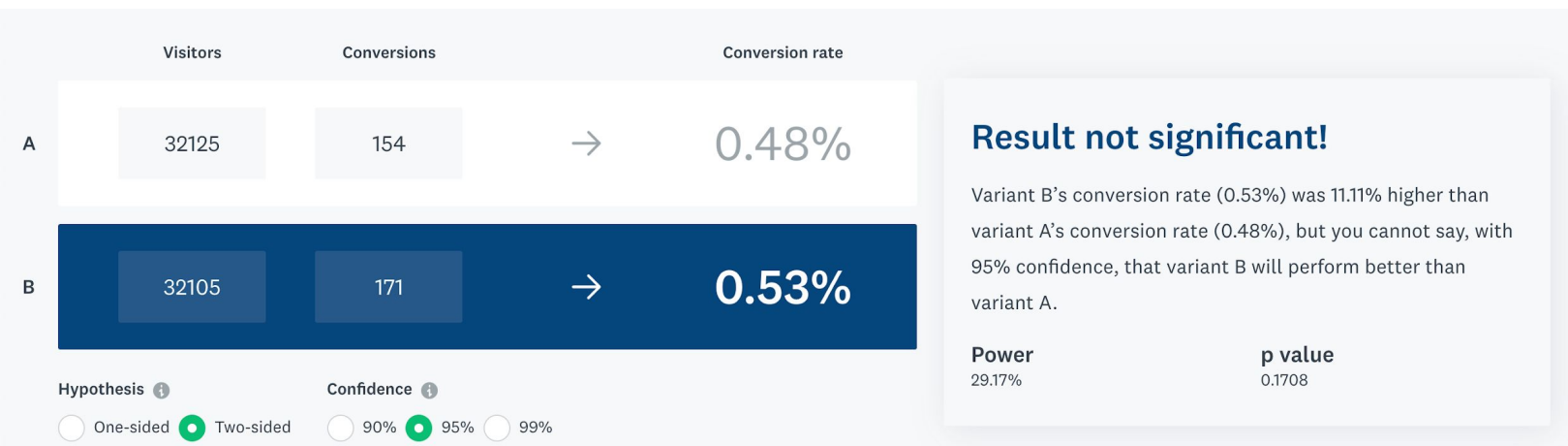


- Control group vs experiment 2: p value is 0.1425, having stated a 95% confidence (0.25) this is not a significant result to determine that experiment 2 will perform better than the control version.



Review Multivariate Test Results: Visualization

- Control group vs experiment 3: p value is 0.1708 having stated a 95% confidence (0.25) this is not a significant result to determine that experiment 3 will perform better than the control version.



Based on the statistical significance calculations, we don't have enough results to make a decision. We can't confirm nor expect that changing the app UI will result in more users booking a ride. More experiments should take place.



Step 2

Funnel & Cohort Analyses

User Funnel

We can define a funnel that users will go through while using the Flyber's app that follows the steps:

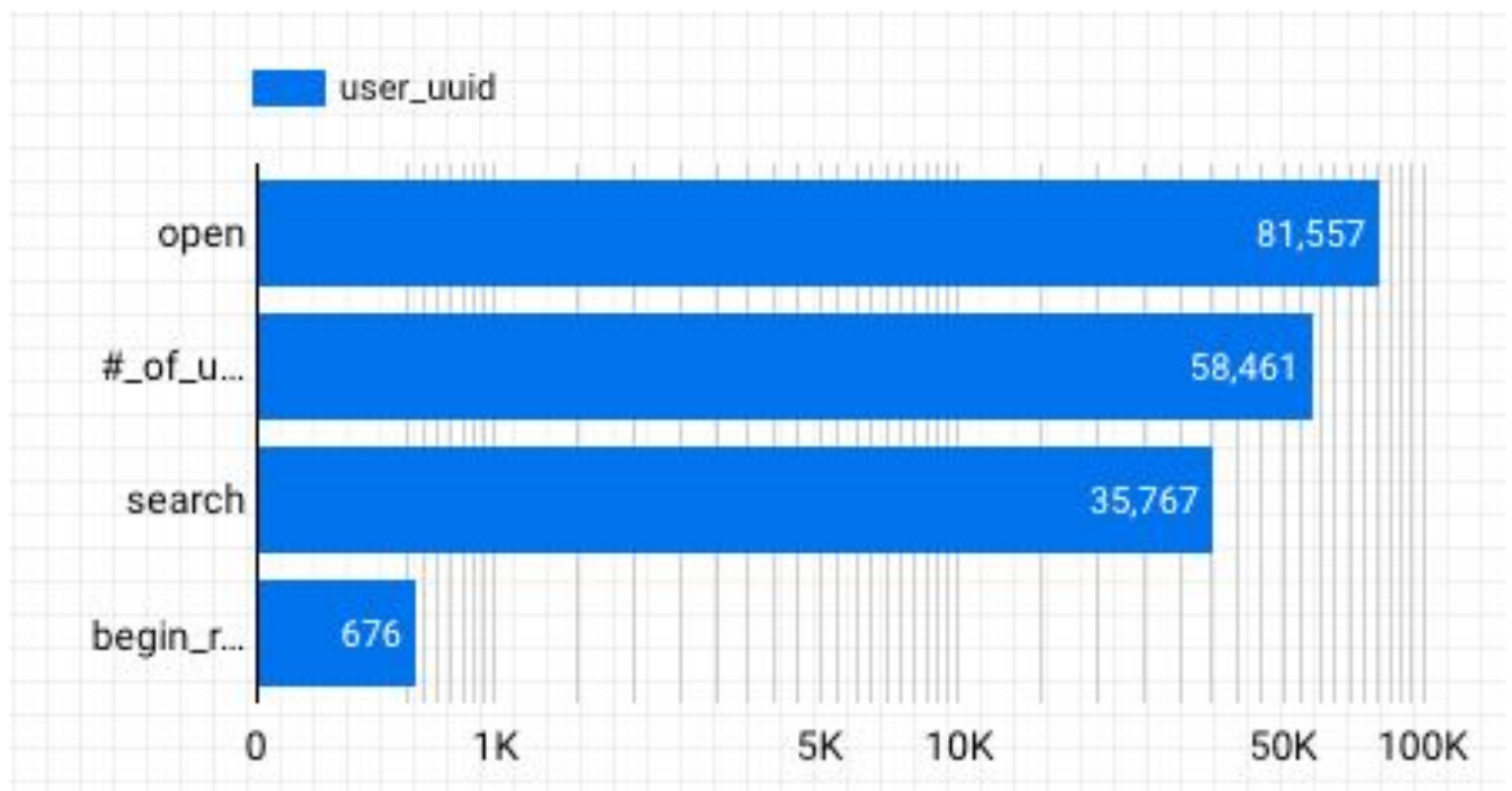
- Open the app
- Select the amount of people that will be using the ride
- Search for an available ride
- Finally booking of a ride

In the table we can see the funnel from step to step, including drop off rates.

	event_type	Drop off rate
1.	open	0%
2.	#_of_users	-58.1%
3.	search	-79.88%
4.	begin_ride	-99.7%

User Funnel

- If we visualize the amount of users per each step, we can see that the biggest drop off is in the final step, where, after searching, the user doesn't begin the ride.



User Segments

In the data available we can identify 2 demographic attributes that allow for segment analysis:

- Age: Being the segment group with the largest number of users the age range between 50+.

	age	Number of users ▲
1.	30-39	20,124
2.	18-29	28,321
3.	40-49	41,774
4.	50+	64,059

- User's neighborhood: Being the segment group with the largest number of users Manhattan.

	user_neighborhood	Number of users ▼
1.	Manhattan	57,110
2.	Brooklyn	16,435
3.	Queens	4,050
4.	Bronx	2,396
5.	Staten Island	1,566

Segment Analysis of Funnel

Identify Opportunities for Improvement

- Funnel analysis by segment **age group**

event/age	50+	40-49	18-29	30-39
open				
#_of_users	-58.08	-58.11	-58.02	-58.36
search	-67.87	-35.97	-35.75	-36.49
begin_ride	-98.72	-98.30	-98.62	-98.34

We can see that the age group 50+ has the highest drop off rate in the search stage compared to other age groups.

These findings may indicate areas for app experience optimization for older users.

More user research should take place in order to to determine what may be causing the higher drop off rates.

Segment Analysis of Funnel

Identify Opportunities for Improvement

- Funnel analysis by segment **user neighbourhood group**

event/age	Manhattan	Brooklyn	Queens	Bronx	Staten Island
open					
#_of_users	-58.03	-58.19	-58.58	-58.79	-57.80
search	-51.94	-52.24	-51.23	-51.85	-52.67
begin_ride	-98.52	-98.52	-98.63	-98.27	-98.39

There's no indication that the user neighbourhood has some influence in the drop off rates, because numbers are quite similar across all of the segment groups.



Step 3

Hypothesis & Next
Steps

Review Qualitative Data

We've found out that the users in the age group 50+ are underperforming in comparison to other segments.

Hypothesis

We believe that the higher drop-off rates observed in the purchase stage of the funnel for users in the age group of 50+ is given because the app is hard to use. And that by improving the app UI, more specifically the interface for booking the ride we will see more bookings.

Review Qualitative Data

What customers in the targeted age group (50+) say about Flyber:

- "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."
- "I call up our local pilot, Bob. He's not always available but I don't need to fiddle around with an app and hitting tiny buttons. He knows where I tend to be and where I want to go."
- "Honestly, I thought about using Flyber to surprise my grandson or granddaughter with a visit to one of their sporting games. Luckily my daughter was around to help me book the ride. 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. Though now that I say that, I really should use Flyber again since it would save more time when it comes to fighting traffic!"

Suggested Features & Experimentation Plan

Following the hypothesis stated, we propose 2 features that should be tested:

- Bigger buttons
- Easier check-out process with address autocompletion

Plan for multivariate testing

- Control: The current check-out process remains the same.
- Experiment 1: The current check-out process remains the same but the UI is adjusted to have bigger buttons.
- Experiment 2: The current check-out process gets reduced by using an auto-complete feature for the address.
- Experiment 3: The current check-out process gets reduced by using an auto-complete feature for the address and the UI is adjusted to have bigger buttons.

Target group

Users in the age group 50+ should be exposed to the experimental changes

Suggested Features & Experimentation Plan

During the experiment, aside of the metrics already in place, we believe that newer metrics should be added to enrich the investigation:

- Time spent in each step to analyze how hard the user tried to use the feature.
- Amount of vehicles available at the time of search to identify if availability could be a drop-off cause.
- Track device type and OS in case different designs do better on different screen sizes.



Appendix

Raw Data

Additional Info

You could include supporting or additional information that can support your previous slides but isn't necessary for every person to see that looks at your slides.