Metro Car Funnel Analysis

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8/4/2023

Introduction

Metrocar's business model is based on a platform that connects riders with drivers through a mobile application. Metrocar acts as an intermediary between riders and drivers, providing a user-friendly platform to connect them and facilitate the ride-hailing process.

This project aims to analyze the customer funnel of Metrocar, a ride-sharing app (similar to Uber/Lyft), to identify areas for improvement and optimization. We will use SQL for data analysis and Tableau or Google Sheets for data visualization. The stakeholders have asked several business questions that can uncover valuable insights for improving specific areas of the customer funnel.

The customer funnel for Metrocar typically includes the following stages:

- App Download: A user downloads the Metrocar app from the App Store or Google Play Store.
- Signup: The user creates an account in the Metrocar app, including their name, email, phone number, and payment information.
- Request Ride: The user opens the app and requests a ride by entering their pickup location, destination, and ride capacity (2 to 6 riders).
- Driver Acceptance: A nearby driver receives the ride request and accepts the ride.
- Ride: The driver arrives at the pickup location, and the user gets in the car and rides to their destination.
- Payment: After the ride, the user is charged automatically through the app, and a receipt is sent to their email.
- Review: The user is prompted to rate their driver and leave a review of their ride experience

Funnel Analysis

Explore the Metrocar Data with SQL

1. How many times was the app downloaded?
2. How many users signed up on the app?
3. How many rides were requested through the app?
4. How many rides were requested and completed through the app?
5. How many rides were requested and how many unique users requested a ride?

```
select count(distinct user_id)
from ride_requests
```

6. How many rides were accepted by a driver?
7. How many rides did we successfully collect payments and how much was collected?

```
select
  count(tr.ride_id),
  sum(purchase_amount_usd)
from
  ride_requests as r
  join transactions as tr using (ride_id)
where
  charge_status = 'Approved'
```

8. How many ride requests happened on each platform?

```
select
  platform,
  count(ride_id)
from
  app_downloads as ap
  join signups as s on ap.app_download_key = s.session_id
  join ride_requests as r on s.user_id = r.user_id
group by
  1
```

9. What is the drop-off from users signing up to users requesting a ride?
   1-conversionrate=30%

Sql code for q1,2,3,4,6,9

```
-- VISITORS (DEFINES THE GROUP WE FOLLOW THROUGH THE FUNNEL)
with downloders as (
  select
    app_download_key, -- effectively a user_id
    min(download_ts) as min_time -- gets the earliest Visit for each person
  from app_downloads
  group by 1 -- selects people whose first visit is in this time range
),

-- SIGN-UPS (FROM THE VISITORS ABOVE)
sign_ups as (
  select
    distinct e.user_id
  from downloders v -- ensures we only look at the Visitors defined above
  inner join signups e on e.session_id = v.app_download_key
   -- an internal event that defines sign-up
),

-- ACTIVATIONS (FROM THE SIGN-UPS ABOVE)
requestride as (
  select
   distinct w.user_id
  from sign_ups s  -- ensures we only look at the Signups defined above
  inner join ride_requests w on w.user_id = s.user_id
),

requestrideaceepted as(
  select distinct w.user_id
  from sign_ups s
  inner join ride_requests w on w.user_id=s.user_id
  where w.accept_ts is not null
  ),

requestridecompleted as(
  select
    distinct w.user_id
  from sign_ups s
  inner join ride_requests w on w.user_id=s.user_id
  where w.dropoff_ts is not null
),
```

```
steps as (select 'download' as step, COUNT(*) from downloders
  union -- joins the output of queries together (as long as they have the same columns)
select 'Sign Up' as step, COUNT(*) from sign_ups
  union
select 'requestride' as step, COUNT(*) from requestride
  union
select'Accepted' as step,count(*) from requestrideaceepted
  union
select'completed' as step, COUNT(*) from requestridecompleted
order by count desc) -- applies to the whole result set


select
  step,
  count,
  lag(count, 1) over (),
  1-(1.0 - count::numeric/lag(count, 1) over ()) as conversion_rate
from steps;
```

Output of this code:

step	count	lag	conversion rate
download	23608		
Sign Up	17623	23608	0.74648424262961707896
requestride	12406	17623	0.70396640753560687738
Accepted	12278	12406	0.98968241173625665001
completed	6233	12278	0.50765597002769180648

Developing Metrocar Funnel Metrics

I focused on five steps based on percent of previous

step	count	lag	conversion_rate	dropoff
download	23608			
Sign Up	17623	23608	0.7464842426296170 7896	0.2535157573703829 2104
requestride	12406	17623	0.7039664075356068 7738	0.2960335924643931 2262
Accepted	12278	12406	0.9896824117362566 5001	0.0103175882637433 4999
completed	6233	12278	0.5076559700276918 0648	0.4923440299723081 9352

I focused also on platform and age range

platform	downloads	total_downloads	pct_of_downloads
ios	14290	23608	0.6053032870213487
web	2383	23608	0.1009403592002711
android	6935	23608	0.2937563537783802

age_range	users	total_users	pct_of_users
45-54	1826	17623	0.10361459456392215
Unknown	5304	17623	0.30097032287351755
35-44	5181	17623	0.29399080746751405
25-34	3447	17623	0.19559666345117177
18-24	1865	17623	0.10582761164387448

Sql code:

platform

```
SELECT
   platform,
   COUNT(*) AS downloads,
   SUM(COUNT(*)) OVER () AS total_downloads,
   COUNT(*)::float /
      SUM(COUNT(*)) OVER () AS pct_of_downloads
FROM app_downloads
GROUP BY platform;
```

age range

```
SELECT
   age_range,
   COUNT(*) AS users,
   SUM(COUNT(*)) OVER () AS total_users,
   COUNT(*)::float /
      SUM(COUNT(*)) OVER () AS pct_of_users
FROM signups
GROUP BY age_range;
```

Present the Funnel Results

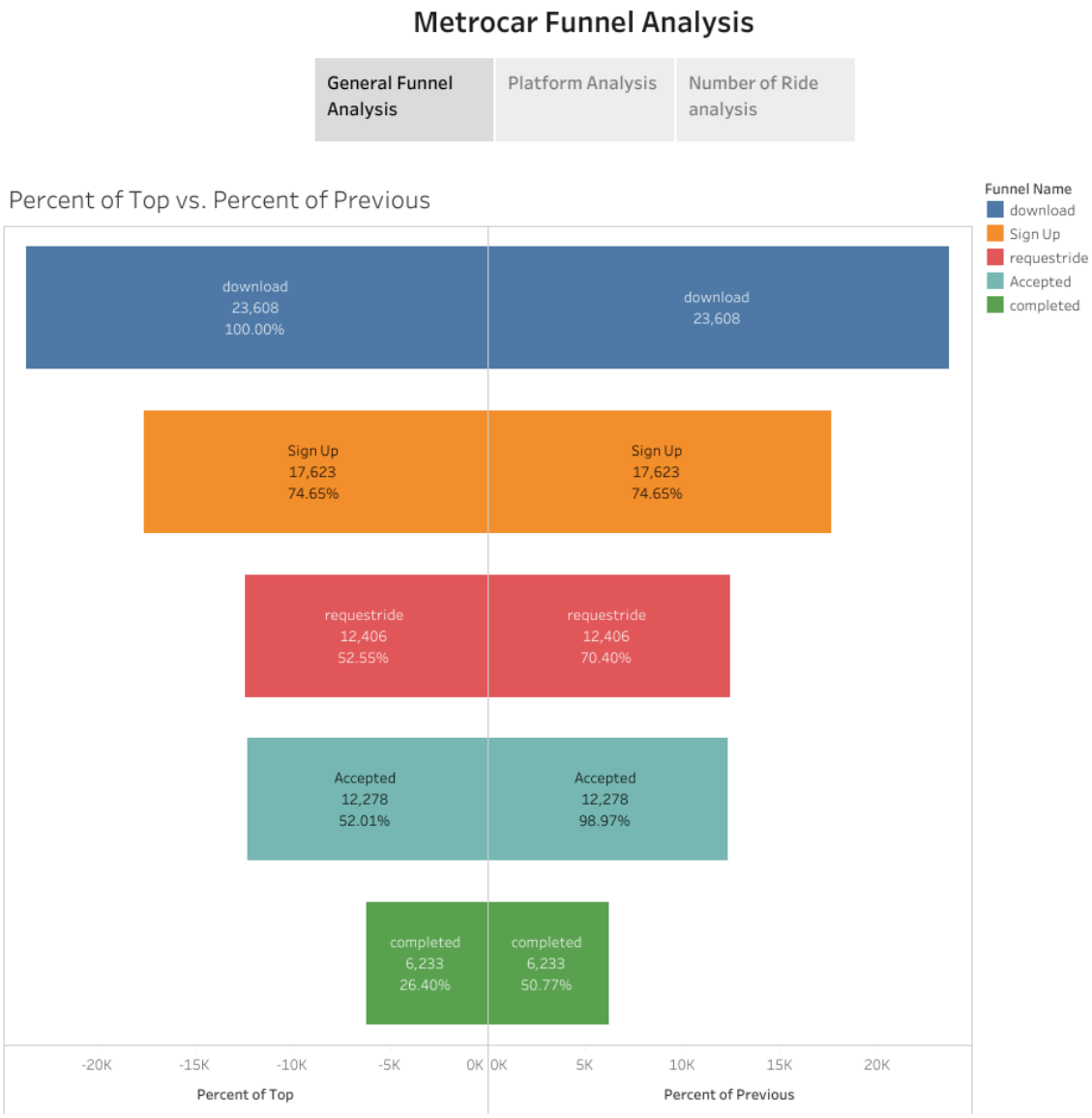
In this part, aggregate data to upload it to tableau using sql (I attached the code in project folder 'Funnel analysis sql code')

I attached the excel document on the project folder please check it.

Tableau Link

https://public.tableau.com/app/profile/suna.jayyousi/viz/metrocarfunnelanalysis_16911518386350/Story1?publish=yes

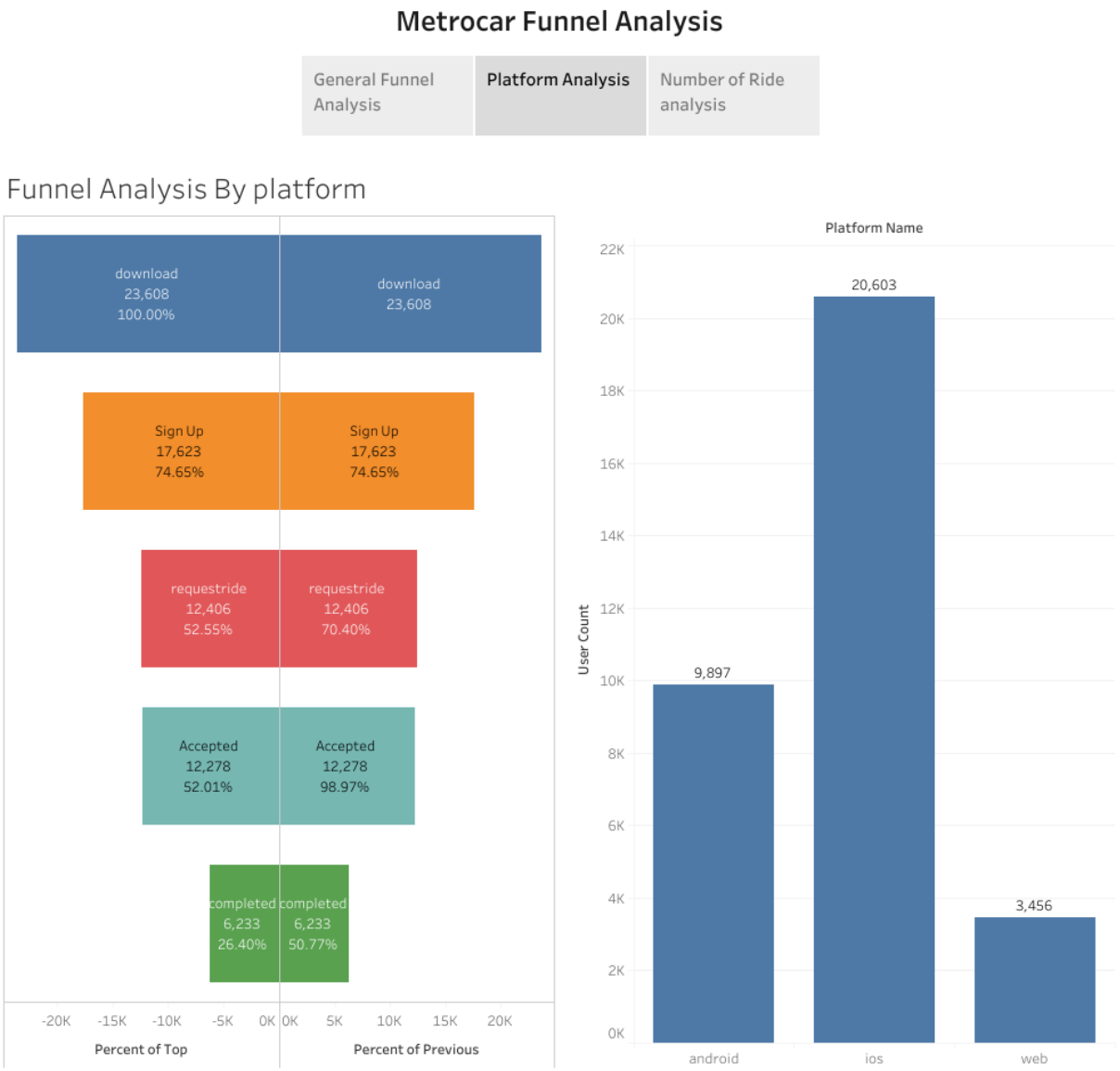
Results and insights



In this chart we can see the conversion rate in two approaches percent of previous and percent of top.

- The lowest conversion rate is between accepted and completed steps, 50.77% from the rides accepted completed, so we recommend to focus on this number and searching for the reasons, maybe due to waiting time for the user or driver.

- The highest conversion rate is between download and signup which is good thing that the app attract user to sign up ,we recommend to focus on increasing the conversion rate between sign up and request a ride by advertising or offer .

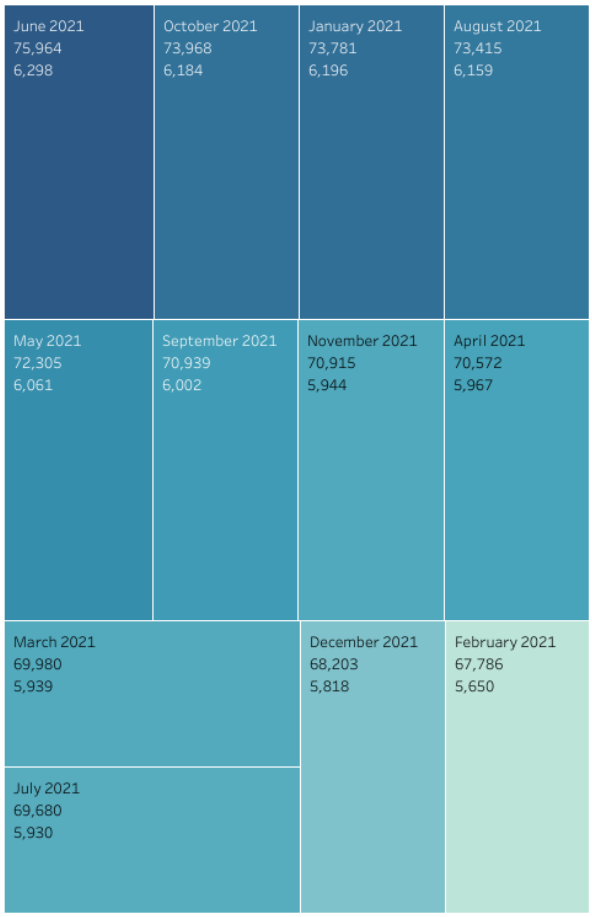


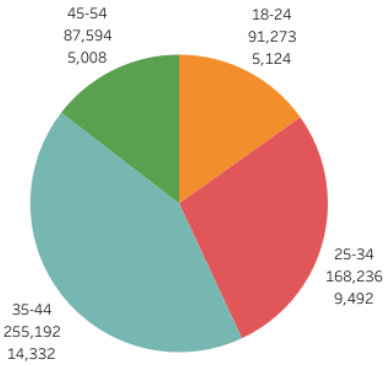
-most of users using IOS platform so we recommend to focus on improving app for this platform.

Metrocar Funnel Analysis

General Funnel Analysis | Platform Analysis | **Number of Ride analysis**

Number of Rides





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