

Metrocar – Ride – Sharing App: Funnel Analysis

By

Yuwani Wijerathne

Table of Contents

1. About Project	2
1.1 Project Background and Introduction	2
1.2 Metrocar's Funnel	2
2. Business Questions	3
3. Dataset Structure	3
3.1 Data Aggregation for Dashboards	5
4. Funnel Analysis	6
4.1 Granularity	6
4.2 Percent of Previous Vs Percent of Top	6
5. Business Questions: Analysis, Insights and Recommendations	6
Figure 1 – User Level Funnel (POP & POT)	7
Figure 2 – Drop-Offs – User Level	8
Figure 3 – Ride Level Funnel (POP & POT)	12
Table 2 – Ride Level Details	12
Figure 4 – Drop-Offs – Ride Level	13
Figure 5 – User Level Funnel - ios	16
Figure 6 – User Level Funnel - android	17
Figure 7 – User Level Funnel - web	17
Figure 8 – Ride Level Funnel - ios	18
Figure 9 – Ride Level Funnel - android	18
Figure 10 – Ride Level Funnel - web	19
Figure 11 – User Level Funnel – Age Range – 18 - 24	24
Figure 12 – User Level Funnel – Age Range – 25 - 34	24
Figure 13 – User Level Funnel – Age Range – 35 - 44	25
Figure 14 – User Level Funnel – Age Range – 45 – 54	25
Figure 15 – Ride Level Funnel – Age Range – 35 – 44	28
Figure 16 – Number of Rides – 9 hour	30
Figure 17 – Number of Rides – 16 hour	30
Figure 18 – Number of Rides – 17 hour	31
6. Appendix	36

1. About Project

1.1 Project Background and Introduction

Metrocar operates on a platform that utilizes a mobile application to establish a connection between riders and drivers. Acting as an intermediary, Metrocar offers a convenient and easy-to-use platform, enabling seamless communication and streamlining the process of ride-hailing.

The objective of this project was to examine the customer funnel of Metrocar, a ride-sharing application comparable to Uber or Lyft. The aim was to identify potential areas that could benefit from enhancement and optimization.

The stakeholders have asked several business questions that can uncover valuable insights for improving specific areas of the customer funnel. Our task was to conduct a funnel analysis and presented the analysis and recommendation. Explain our reason for these recommendations based on insights retrieved from the data.

1.2 Metrocar's Funnel

The customer funnel for Metrocar typically included 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

Just like any typical customer funnel, there were instances of drop-offs at various stages. This is where funnel analysis becomes valuable in pinpointing opportunities for improvement and optimization. For instance, Metrocar can examine the proportion of users who downloaded the app but failed to complete the registration process, or the percentage of users who initiate a ride request but subsequently cancelled it before the driver arrives.

2. Business Questions

We needed to analyze the data and make recommendations based on the following business questions:

1. What steps of the funnel should we research and improve? Are there any specific drop-off points preventing users from completing their first ride?
2. Metrocar currently supports 3 different platforms: ios, android, and web. To recommend where to focus our marketing budget for the upcoming year, what insights can we make based on the platform?
3. What age groups perform best at each stage of our funnel? Which age group(s) likely contain our target customers?
4. Surge pricing is the practice of increasing the price of goods or services when there is the greatest demand for them. If we want to adopt a price-surging strategy, what does the distribution of ride requests look like throughout the day?
5. What part of our funnel has the lowest conversion rate? What can we do to improve this part of the funnel?

3. Dataset Structure

You can find a description of each table and its columns below,

app_downloads: contains information about app downloads

app_download_key: unique id of an app download

platform: ios, android or web

download_ts: download timestamp

signups: contains information about new user signups

user_id: primary id for a user

session_id: id of app download

signup_ts: signup timestamp

age_range: the age range the user belongs to

ride_requests: contains information about rides

ride_id: primary id for a ride

user_id: foreign key to user (requester)

driver_id: foreign key to driver

request_ts: ride request timestamp

accept_ts: driver accept timestamp

pickup_location: pickup coordinates

destination_location: destination coordinates

pickup_ts: pickup timestamp

dropoff_ts: dropoff timestamp

cancel_ts: ride cancel timestamp (accept, pickup and dropoff timestamps may be null)

transactions: contains information about financial transactions based on completed rides

ride_id: foreign key to ride

purchase_amount_usd: purchase amount in USD

charge_status: approved, cancelled

transaction_ts: transaction timestamp

reviews: contains reviews once rides are completed information about driver

review_id: primary id of review

ride_id: foreign key to ride

driver_id: foreign key to driver

user_id: foreign key to user (requester)

rating: rating from 0 to 5

free_response: text response given by user/requester

When considering the nulls in the dataset, there were significant nulls in age_range column in signups table. Also, the dataset was too small to generate meaningful insights and draw definitive conclusions.

To analyze the data and derive recommendations, we used SQL as the primary tool. By utilizing SQL, we were able to query the dataset and extract relevant information that allowed us to draw insights and provide actionable recommendations. The structured nature of SQL facilitated efficient data retrieval, aggregation, filtering, and manipulation, enabling us to perform complex analyses and generate meaningful outcomes. Through the use of SQL, we were able to address the predefined questions effectively and derive valuable insights to inform our recommendations.

3.1 Data Aggregation for Dashboards

As we approached the development of our dashboards through Tableau, we used aggregate datasets for tableau by using SQL. When we explored data in SQL, we generally wanted to slice and dice through raw/transactional data to discover different insights. Sometimes queries can take a long time to run due to CPU or memory constraints or even inefficiently written queries, but generally, that should be fine. The data exploration process is ad-hoc and we usually will not be running the same queries over and over again day after day.

Dashboards often perform more efficiently with aggregated datasets for several reasons, it is reduced data volume, minimizing query complexity, faster query execution and improved visualization rendering.

It's important to note that while aggregated datasets offer performance benefits, they might not be suitable for all types of analysis. Aggregation involves summarizing data at a higher level, potentially sacrificing granularity. Therefore, when detailed, granular information is required, working with raw, non-aggregated data may be more appropriate. The choice between aggregated and raw data depends on the specific use case and the level of detail needed for analysis and decision-making.

Therefore, we used aggregated data for the customer funnel generation for Metrocar.

4. Funnel Analysis

4.1 Granularity

In order to analyze the funnel, we consider the user-level granularity and ride-level granularity.

4.2 Percent of Previous Vs Percent of Top

Percent of Previous and Percent of Top are two different ways to measure the conversion rates at various stages of a funnel.

Percent of Previous (POP): This metric refers to the percentage of users that move from one stage of the funnel to the next. It calculates the conversion rate by dividing the number of users or rides in a specific stage by the number of users or rides in the previous stage. This metric helps track the progression of users through each step of the funnel and identify potential areas of improvement or drop-offs.

Percent of Top (POT): This metric refers to the percentage of users or events (rides) that reach a particular stage of the funnel relative to the total number of users or events (rides) at the top of the funnel. It calculates the conversion rate by dividing the number of users or events (rides) in a specific stage by the number of users or events (rides) at the top of the funnel.

5. Business Questions: Analysis, Insights and Recommendations

Business Question 1

What steps of the funnel should we research and improve? Are there any specific drop-off points preventing users from completing their first ride?

User Level Granularity

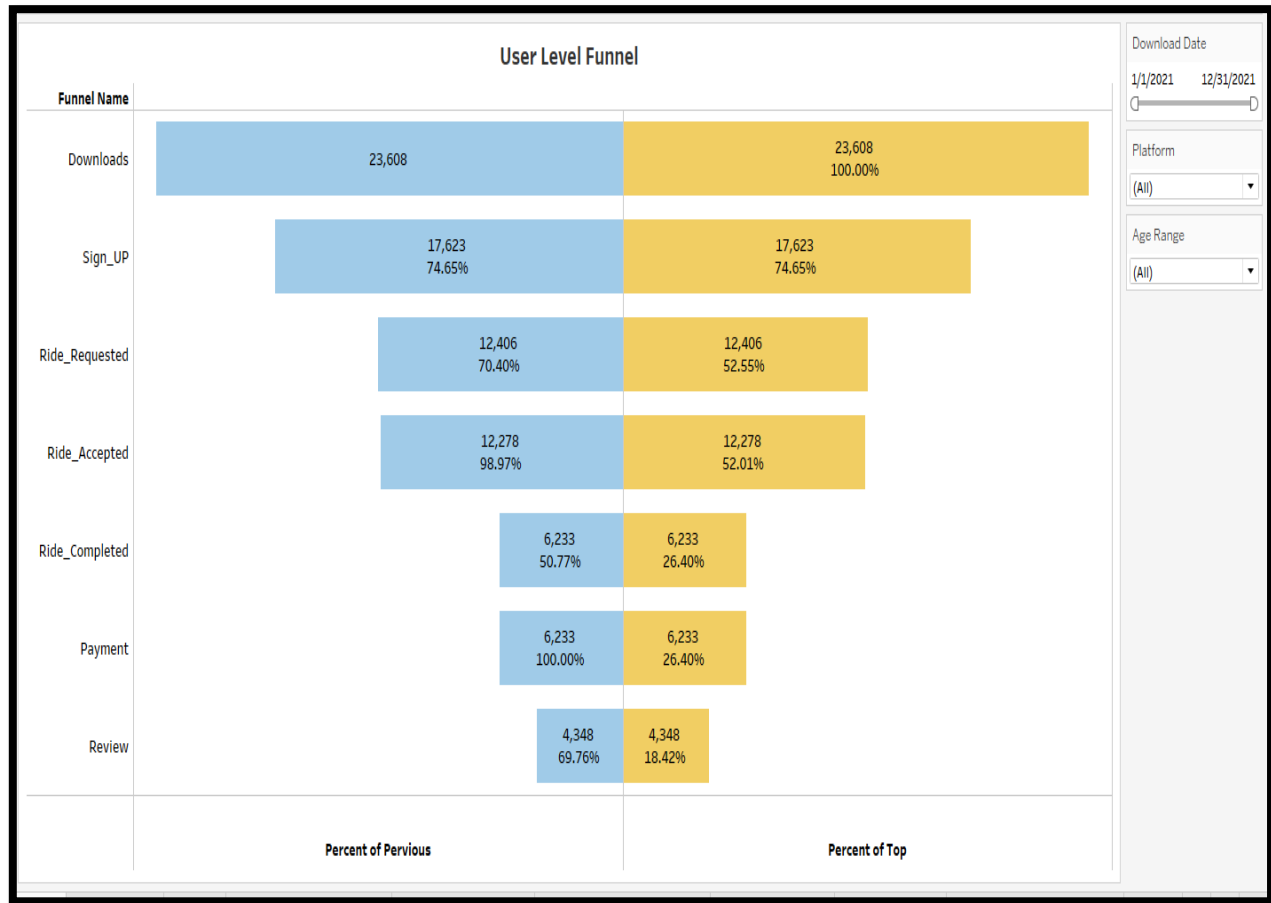


Figure 1 – User Level Funnel (POP & POT)

Level	Users	Percent of Pervious	Percent of Top
Downloads	23,603		100%
Sign-UP	17,623	74.65%	74.65%
Ride – Requested	12,406	70.40%	52.55%
Ride – Accepted	12,278	98.97%	52.01%
Ride – Completed	6,233	50.77%	26.40%
Payment	6,233	100%	26.40%
Review	4,348	69.78%	18.42%

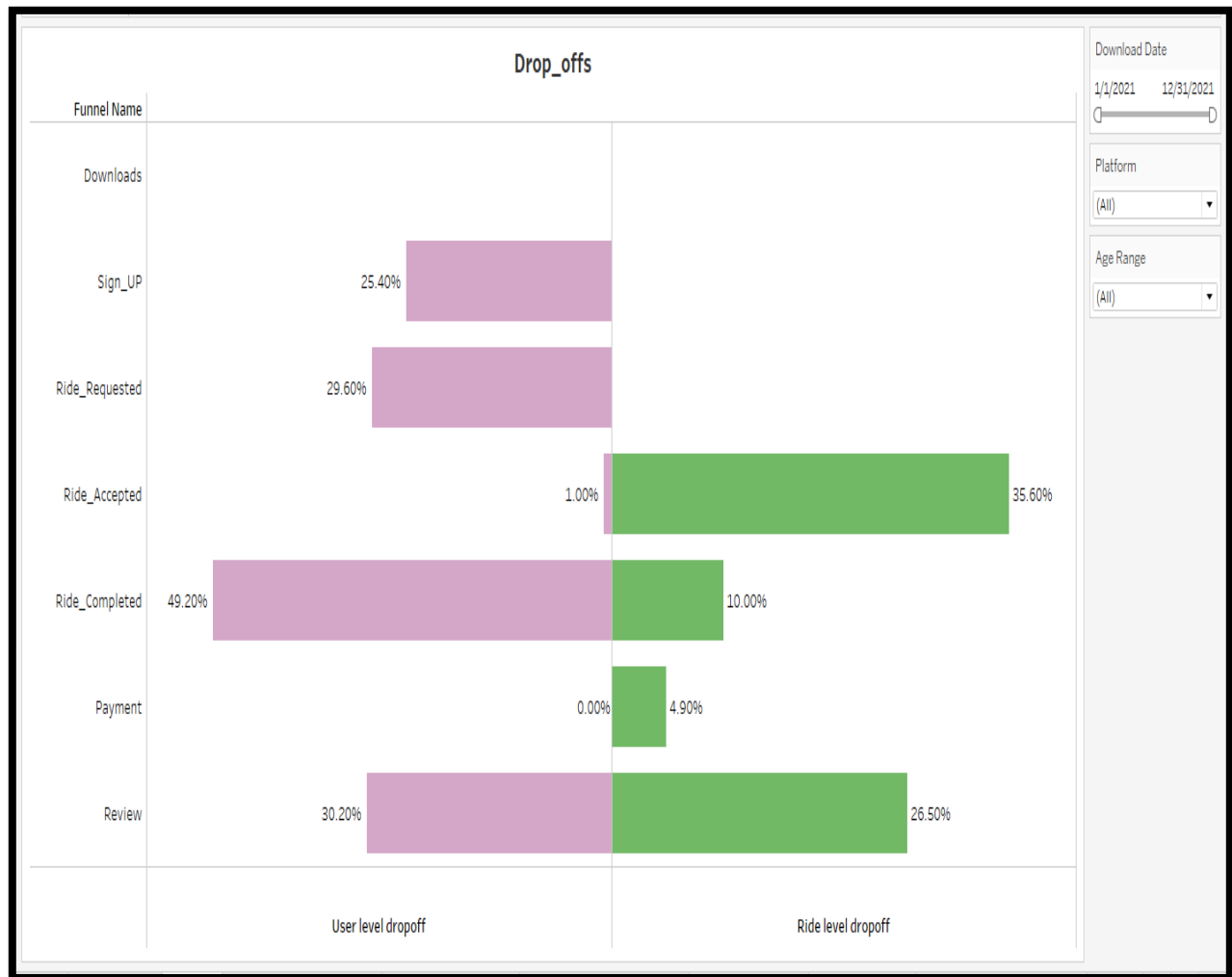


Figure 2 – Drop-Offs – User Level

Based on the user level funnel analysis, there were a few steps in the customer funnel that could benefit from research and improvement:

Sign-Up: There was a drop-off of 25.40% from app downloads to sign-ups. It would be valuable to investigate the reasons behind this drop-off and identify any potential barriers or challenges users may be facing during the sign-up process. Simplifying the registration process, improving user guidance, or addressing any technical issues could help increase the conversion rate from downloads to sign-ups.

Ride Requested: Another significant drop-off occurred at this stage, with a 70.40% conversion rate(POP) and 52.55% conversion rate of POT from sign-ups to ride requests. It would be essential to understand why nearly 30% of users who signed up did not proceed to request a ride. Possible reasons could include usability issues, lack of clarity in the app's features, or ineffective

communication of the value proposition. Gathering user feedback, conducting usability testing, and analyzing user behavior within the app could provide insights to address these drop-offs.

Ride Accepted: While the drop-off percentage was relatively low at this stage (1.00%) and Conversion rates were 98.97% and 52.01% respectively for POP and POT, it is still worth investigating any factors that may prevent users from successfully getting their ride requests accepted by drivers. It could involve analyzing driver availability, notification systems, or other factors that might impact the acceptance rate. Enhancing these aspects can lead to a smoother ride booking experience for users.

Ride Completed: The conversion rate from ride requested to ride completed was 50.77%, indicating a significant drop-off. After driver accepting the ride-request a large number of people had cancel the trips. Understanding the reasons behind this drop-off is crucial. It could be related to higher waiting times between ride-request to ride -accepted, dissatisfaction with driver behavior, pricing concerns, or other factors affecting the overall ride experience. Analyzing user feedback, driver ratings, and conducting post-ride surveys can provide valuable insights to address any issues and improve the ride completion rate.

Review: When observing the conversion rates of 69.78% of POP and 18.42% of OPT and 30.20% of drop-off showing that considerable number of users were reluctant to provide reviews and rating. It is essential to encourage customers to provide reviews for drivers and the overall service.

By focusing on these stages and addressing potential drop-off points, company can enhance the user experience, increase user retention, and drive more users to complete their first ride, leading to greater overall success for Metrocar.

Recommendations

Based on the funnel analysis, here are some recommendations to improve specific areas of the customer user funnel for Metrocar:

Sign-Up Process,

Simplify the registration process: Streamline the sign-up process by reducing the number of steps or required information, making it quick and hassle-free for users to create an account.

Clear instructions and guidance: Provide clear instructions and user guidance during the sign-up process to help users understand the required steps and alleviate any confusion or uncertainty.

Address technical issues: Identify and resolve any technical issues that may be hindering users from successfully completing the sign-up process.

Ride Request Experience,

Enhance app usability: Conduct usability testing to identify any usability issues or pain points that users may encounter while requesting a ride. Optimize the app interface to ensure a seamless and intuitive experience.

Communicate value proposition: Clearly communicate the benefits and advantages of using Metrocar for ride-hailing. Highlight features such as affordability, driver ratings, real-time tracking, or any unique offerings to encourage users to proceed with ride requests.

Provide in-app guidance: Offer contextual guidance and tooltips within the app to assist users in making their first ride request. Ensure that users are aware of how to select pickup and drop-off locations, set preferences, and utilize any available features.

Driver Acceptance time reductions,

To improve driver acceptance times in Metrocar, we can consider implementing the following adjustments:

Driver Incentives: Offer attractive incentives to drivers for accepting ride requests promptly. This could include bonuses, higher earnings during peak hours, or rewards for maintaining a high acceptance rate. Incentives can motivate drivers to prioritize and accept ride requests quickly.

Surge Pricing: Implement surge pricing during periods of high demand to encourage more drivers to accept ride requests promptly. By adjusting the pricing dynamically based on supply and demand, we can incentivize drivers to be more responsive and available when ride requests are abundant.

Driver Availability Monitoring: Develop a system to monitor driver availability and proactively match available drivers with pending ride requests. By using real-time data and intelligent algorithms, we can identify and notify drivers who are nearby and likely to accept ride requests promptly.

Improve Driver Communication: Enhance communication channels between Metrocar and drivers to ensure they receive notifications promptly and are aware of pending ride requests. Implement efficient push notifications, SMS alerts, or in-app messages to ensure drivers can quickly respond and accept rides.

Driver Experience and Support: Focus on improving the overall experience for drivers, as satisfied drivers are more likely to accept ride requests promptly. Provide driver support services,

address their concerns, and offer efficient methods for drivers to resolve issues or seek assistance when needed.

Driver Rating System: Regularly monitor and assess driver ratings and performance. Implement mechanisms to identify drivers who consistently decline or take longer to accept ride requests. Utilize this data to provide feedback, training, or coaching to drivers to improve their acceptance times.

Reduce Friction in Acceptance Process: Simplify and streamline the process for drivers to accept ride requests. Minimize the number of steps or actions required by drivers, such as reducing the time needed to review ride details or simplifying the navigation interface within the driver app. By adjusting these factors, Metrocar can optimize driver acceptance times, ensuring a more efficient and responsive ride-hailing service, which can enhance the overall user experience and satisfaction.

Ride Completion and User Satisfaction,

Improve driver quality and behavior: Implement driver training programs and guidelines to ensure a high level of professionalism, punctuality, and courteous behavior. Encourage drivers to maintain positive ratings by prioritizing customer satisfaction.

Pricing transparency: Ensure that fare estimates are accurate and transparently communicated to users before confirming their ride. Clearly explain any additional charges or surcharges that may apply to avoid surprises and build trust.

Prompt issue resolution: Establish a responsive customer support system to address any concerns or issues raised by users promptly. Quick resolution of problems, such as ride cancellations or discrepancies, can help retain users and enhance their overall satisfaction.

User Feedback and Iterative Improvement,

Regularly collect user feedback: Implement mechanisms to gather user feedback through in-app surveys, ratings, or reviews. Analyze the feedback to identify recurring themes or pain points and prioritize improvements based on user suggestions.

Continuous app optimization: Regularly update and optimize the app based on user feedback, technological advancements, and industry trends. Continuously monitor app performance, stability, and speed to provide a smooth and reliable experience.

By implementing these recommendations, Metrocar can enhance the user experience at each stage of the funnel, increase user satisfaction, and improve the conversion rates, ultimately leading to higher retention and success in the ride-sharing market.

Ride Level Granularity



Figure 3 – Ride Level Funnel (POP & POT)

Level	Rides	Percent of Pervious	Percent of Top
Ride – Requested	385,477		100.00%
Ride – Accepted	248,379	64.43%	64.43%
Ride – Completed	223,652	90.04%	58.02%
Payment	212,628	95.07%	55.16%
Review	156,211	73.47%	40.52%

Table 2 – Ride Level Details

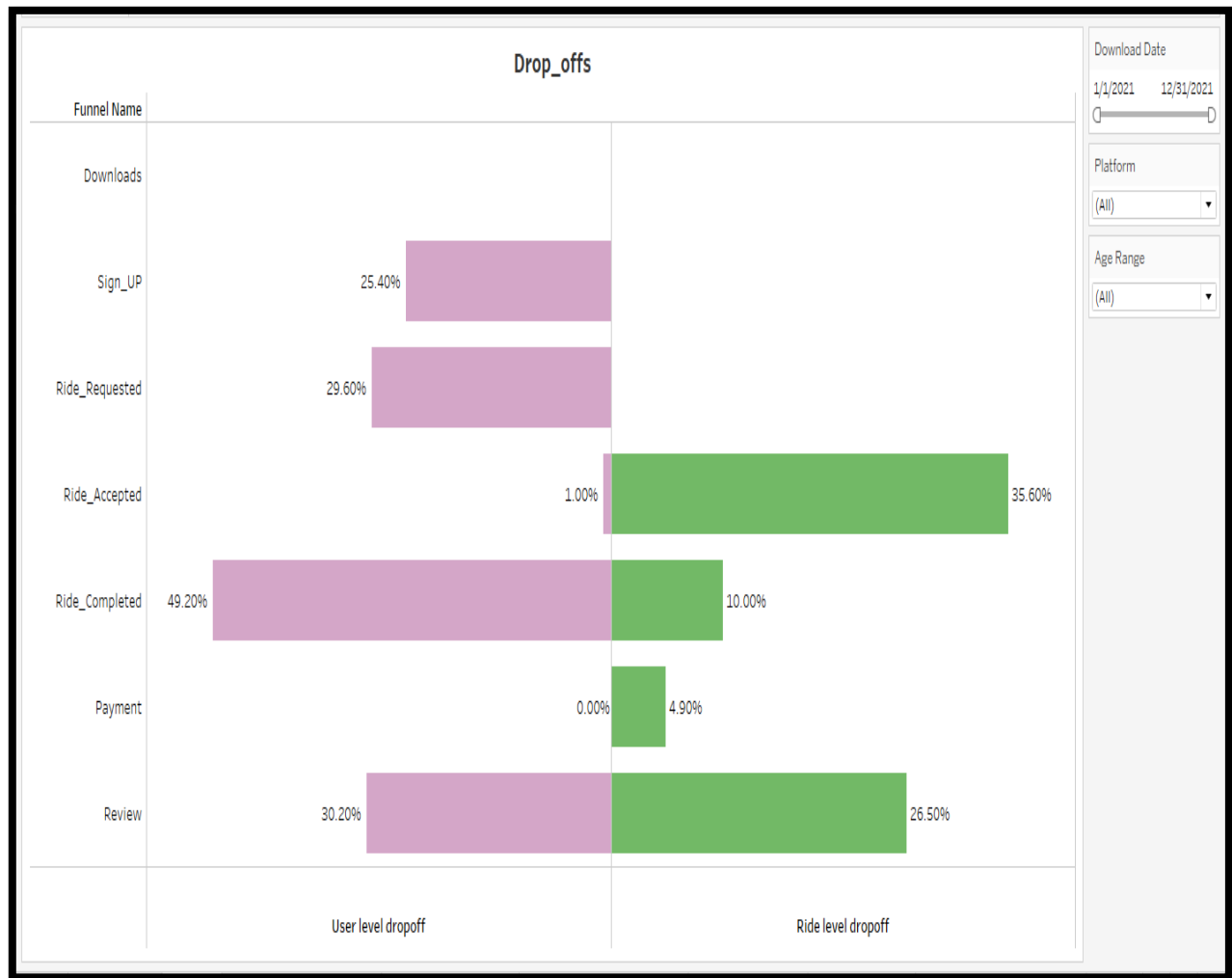


Figure 4 – Drop-Offs – Ride Level

The funnel of ride level was starting with Ride – Requested and ending with Reviews.

Based on the ride – level funnel analysis, we can analyze the different steps of the funnel and identify potential areas for research and improvement:

Ride - Requested to Ride - Accepted: The conversion rate from requested rides to accepted rides was 64.43% and drop-off rate was quite high the value of 35.60%. It could be beneficial to investigate the reasons why some ride requests were not accepted. Were there any issues with the user interface, pricing, or availability that might discourage drivers from accepting requests?. The R&D team need to do further investigation on this drop rates.

Ride - Accepted to Ride - Completed: The conversion rate from accepted rides to completed rides was 90.04%. This drop-off point suggests that there may be factors affecting the completion of rides. Researching the causes behind this drop-off could involve examining issues such as ride

cancellations, user experience during the ride, or any barriers that prevent users from reaching their intended destinations.

Ride - Completed to Payment: The conversion rate from completed rides to payment was 95.07%. While this conversion rate was relatively high, there was still a small percentage of users who do not complete their payments. Investigating this step could involve looking into any friction points during the payment process, such as payment methods, security concerns, or errors in the payment system.

Payment to Review: The conversion rate from payment to review was 73.47%. This drop-off (26.50%) suggests that some users were not leaving reviews after completing their payment. Researching this step could involve understanding user motivations for leaving reviews, incentivizing users to provide feedback, or improving the review process to make it more seamless and user-friendly.

To identify specific drop-off points preventing users from completing their first ride, we should focus on the first step of the funnel (Ride - Requested to Ride - Accepted). Conducting user research, surveys, or interviews with users who didn't complete their first ride could help uncover their concerns, barriers, or issues they encountered during the process. This feedback can provide valuable insights for improving the user experience and addressing any specific pain points or obstacles that prevent users from completing their first ride.

Recommendations

Based on the analysis of the ride funnel steps and potential drop-off points, here are some recommendations for improving the user experience and increasing conversion rates:

Improve the ride request experience: Look for ways to enhance the ride request process to increase the conversion rate from Ride - Requested to Ride - Accepted. This could involve optimizing the user interface, making pricing information more transparent, and providing clear and compelling incentives for drivers to accept ride requests.

Address ride completion issues: Investigate the factors that contribute to the drop-off from Ride - Accepted to Ride - Completed. Identify and address any barriers or challenges that prevent users from completing their rides, such as ride cancellations, long wait times, or difficulties in reaching destinations. Improving communication between drivers and passengers, offering real-time updates, and enhancing overall ride experience can help increase the completion rate.

Streamline the payment process: Although the conversion rate from Ride - Completed to Payment is relatively high, it's essential to ensure a smooth and hassle-free payment experience. Simplify the payment methods, optimize the payment flow, and address any potential issues or errors that users might encounter during the payment process. Ensuring security and building trust around payments can also contribute to a higher conversion rate.

Encourage reviews and feedback: Increase the conversion rate from Payment to Review by incentivizing users to leave reviews. Offer rewards, discounts, or loyalty points for users who provide feedback. Simplify the review process and make it easily accessible after completing the payment. Actively engage with users and respond to their reviews to demonstrate that their feedback is valued.

Conduct user research and testing: Regularly gather user feedback through surveys, interviews, or usability testing to understand their pain points and areas of improvement. Identify common issues or frustrations reported by users and prioritize addressing them. Continuously iterate and enhance the user experience based on user insights and preferences.

Monitor and analyze data: Implement robust analytics to track user behavior and conversion rates at each step of the funnel. Monitor key metrics regularly and identify patterns or trends that may indicate specific areas for improvement. Use data-driven insights to guide decision-making and prioritize efforts for optimizing the funnel.

By implementing these recommendations and continually evaluating and refining the user experience, we can work towards improving conversion rates, reducing drop-off points, and increasing overall user satisfaction with your ride service.

The data indicated that there was a significant drop-off in ride completion when analyzing user-level granularity compared to ride-level granularity:

User-level granularity (ride accepted to ride completed): From the data given, the number of rides accepted at the user level was 12,278, while the number of rides completed was 6,233. This implies that there is a drop-off of 6,045 rides at the user level. This drop-off could be due to various reasons, such as cancellations by either the driver or the user, ride disruptions, or users not reaching their intended destinations for some reason.

Ride-level granularity (ride accepted to ride completed): At the ride level, the number of rides accepted was 223,652, and the number of rides completed was 212,628. Here, the drop-off is much

smaller, with 11,024 rides not being completed. This indicates that some rides might have been canceled or disrupted during the ride itself, resulting in incomplete journeys.

Analyzing the drop-off at both granularities can provide different perspectives on the completion rates. The user-level granularity gives insights into the number of users who did not complete their rides, while the ride-level granularity focuses on individual rides that were not successfully completed.

To further understand the reasons behind these drop-offs, it would be helpful to gather additional data and perform a more detailed analysis. This could involve examining factors such as ride cancellation rates, user feedback or complaints, driver behavior, or any specific issues reported during the ride or post-ride stages. Conducting surveys or interviews with users who experienced incomplete rides can provide valuable insights into their experiences and help identify areas for improvement.

Business Question 2

Metrocar currently supports 3 different platforms: ios, android, and web. To recommend where to focus our marketing budget for the upcoming year, what insights can we make based on the platform?

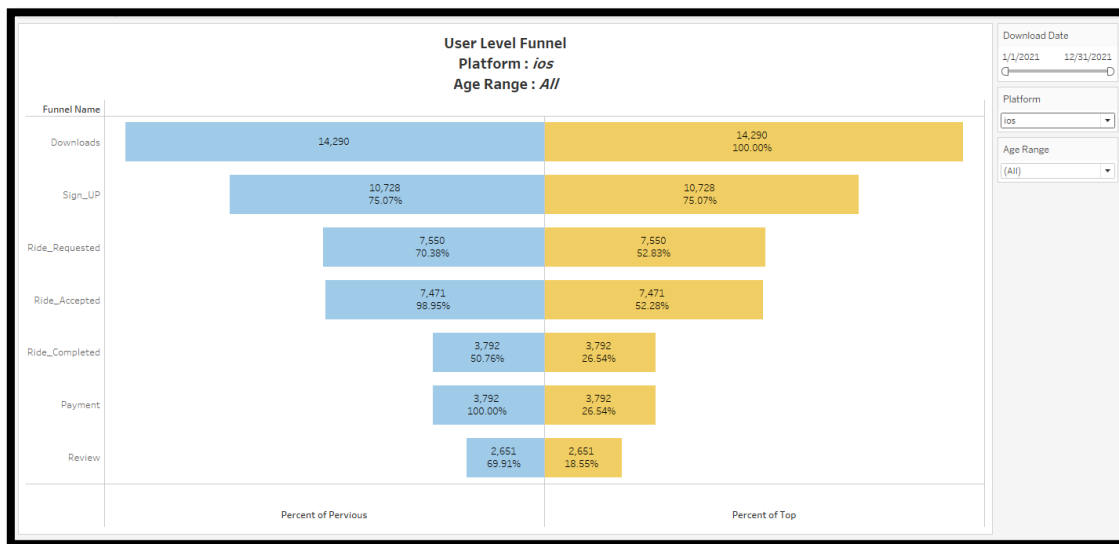


Figure 5 – User Level Funnel - ios

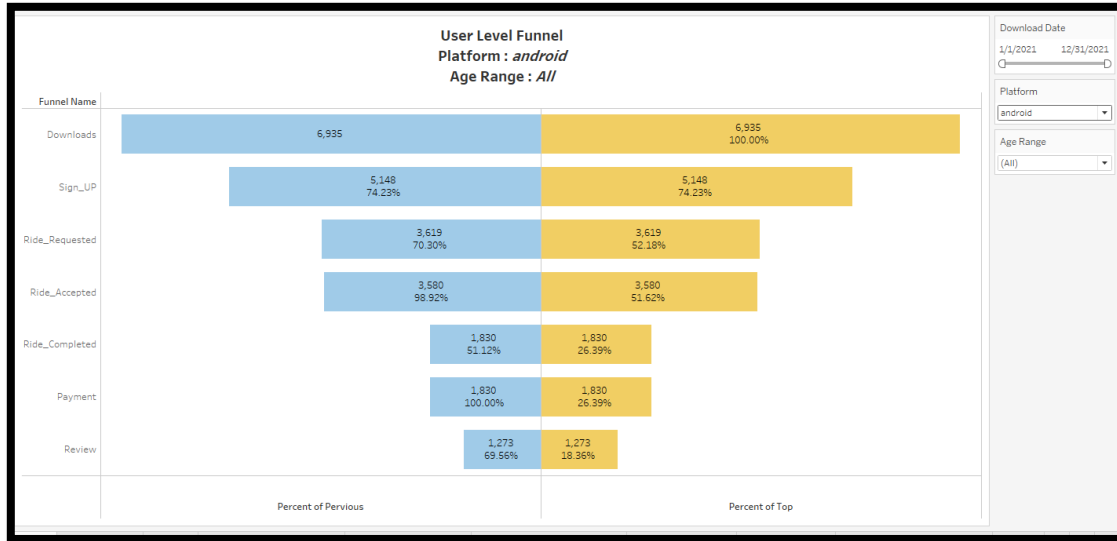


Figure 6 – User Level Funnel - android

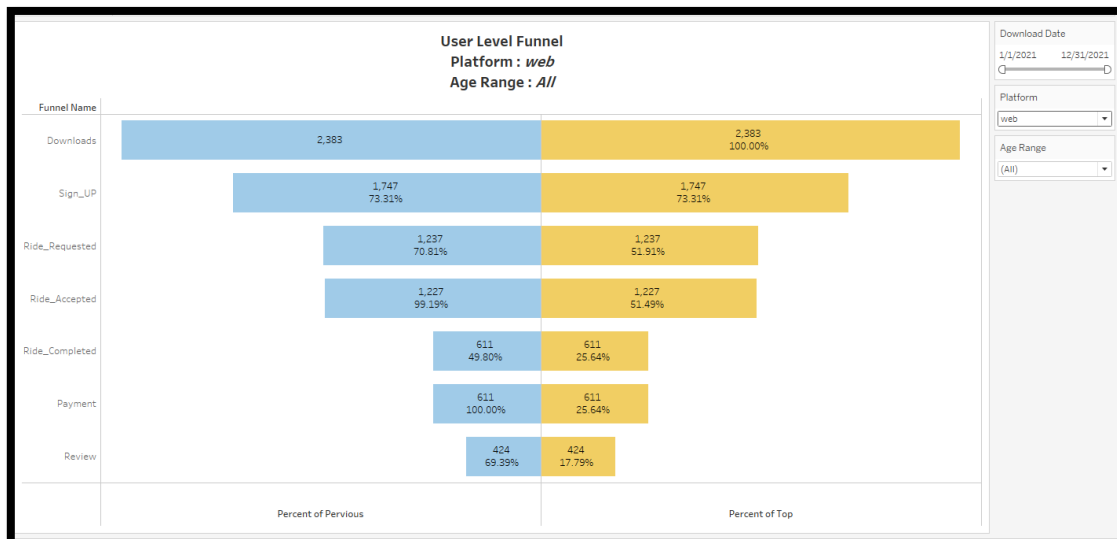


Figure 7 – User Level Funnel - web

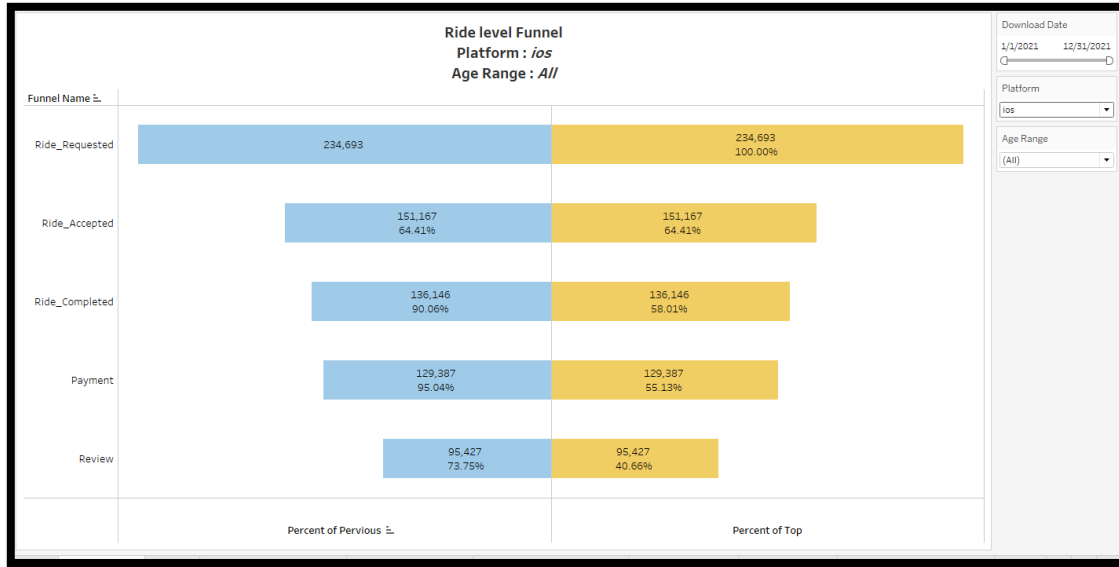


Figure 8 – Ride Level Funnel - ios

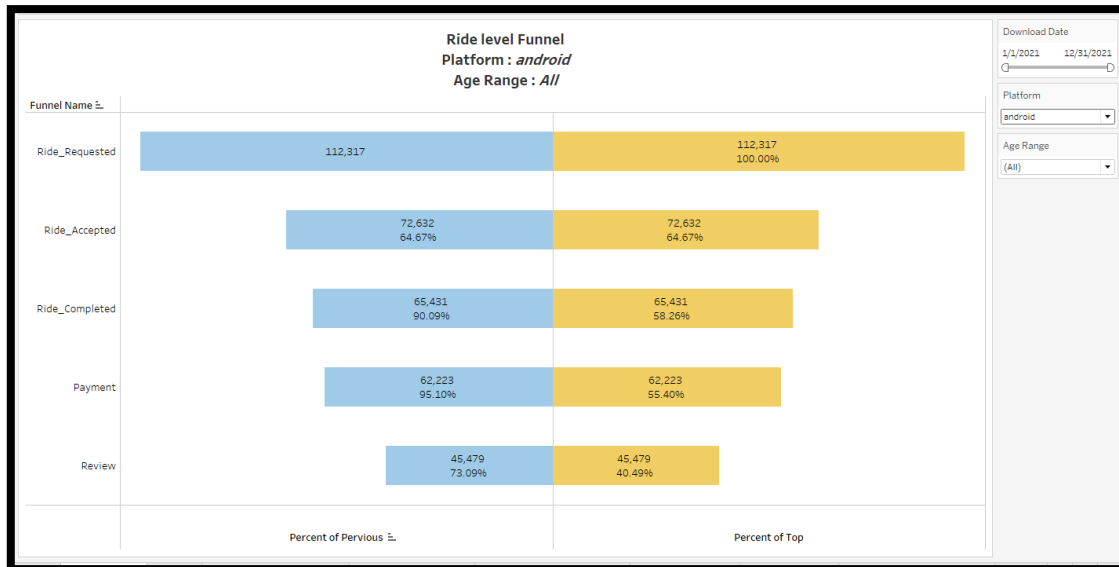


Figure 9 – Ride Level Funnel - android

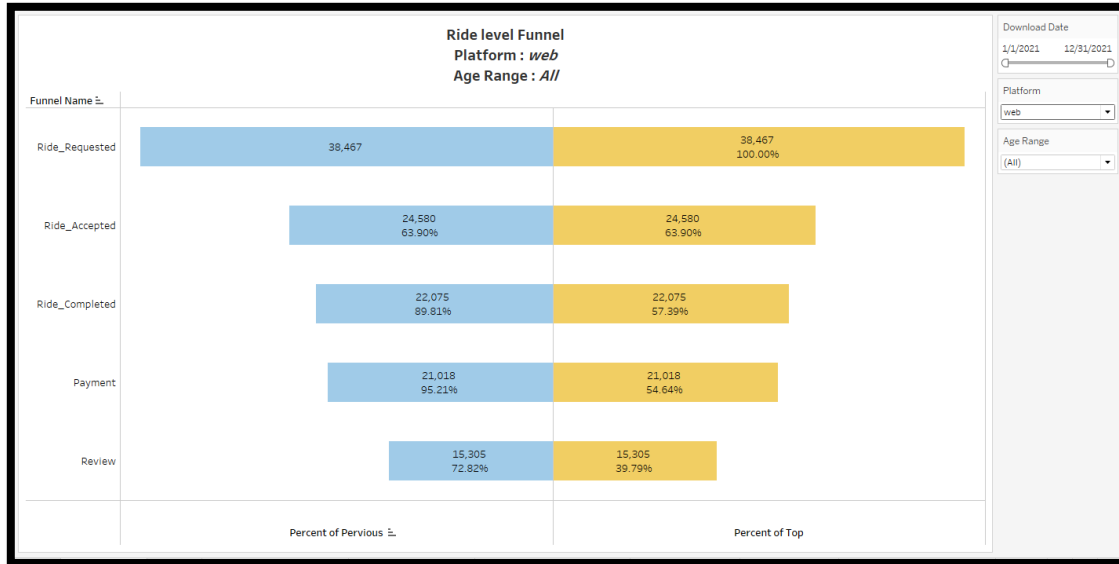


Figure 10 – Ride Level Funnel - web

iOS Platform (14,290 downloads):

The iOS platform showed the highest number of downloads with 14,290. This indicates a strong user base among iOS users. iOS users are generally known for their higher engagement levels and willingness to spend on apps and services.

It is recommended to allocate a significant portion of our marketing budget to target iOS users through campaigns on the App Store, social media platforms, and other channels that reach the iOS user base. Focus on engaging existing iOS users and attracting new iOS users to further strengthen the presence in this market.

Android Platform (6,935 downloads):

The Android platform had a significant number of downloads with 6,935, although lower than iOS. Android users make up a large portion of the overall smartphone market and offer a wide range of device options.

It is advice to allocate a portion of the marketing budget to target Android users through various channels, including the Google Play Store, social media platforms, and targeted advertising. Consider leveraging the diverse Android user base and tailoring the marketing efforts to specific segments or regions where Metrocar has potential for growth.

Web Platform (2,383 downloads):

The web platform shows the lowest number of downloads with 2,383. While the web platform may have fewer downloads compared to mobile platforms, it can still be valuable for users who prefer accessing Metrocar's services through their desktop or laptop devices.

Allocate a smaller portion of our marketing budget to enhance the web platform's visibility and user experience. This can include online advertising, search engine optimization (SEO), and partnerships with relevant websites or platforms that can drive traffic to the web version of Metrocar.

Consider conducting further market research to understand user preferences, demographics, and behavior patterns on each platform. This will help refine the marketing strategies and budget allocation to effectively target and engage users on the different platforms, maximizing reach and impact.

Recommendations

The iOS platform had the highest number of signups with 10,728 and a relatively high conversion rate of 75.07%. This indicates a strong interest and engagement among iOS users towards Metrocar's services. Allocate a significant portion of marketing budget towards the iOS platform to further capitalize on the existing user base and attract new iOS users. Focus on campaigns, advertisements, and targeted promotions specifically designed for iOS users.

The Android platform had a considerable number of signups with 5,148 and a conversion rate of 74.23%. While the number of signups may be lower than iOS, the conversion rate is similar, indicating a good level of engagement among Android users. Allocation of a portion of marketing budget towards the Android platform to capture and engage Android users and develop targeted campaigns, collaborate with Android app partners, and utilize online advertising to increase visibility and attract new Android users are some strategies to focus on.

The web platform had a lower number of signups with 1,747, but a conversion rate of 73.31%. Although the number of signups was comparatively lower than other two platforms, the conversion rate suggests that the web platform appeals to users who prefer accessing Metrocar's services through desktop or laptop devices. Allocate a smaller portion of marketing budget to maintain a presence and improve the user experience on the web platform is recommended. This can include

targeted online advertising, search engine optimization (SEO), and partnerships with relevant websites or platforms that can drive traffic to the web version of Metrocar.

It is also suggested to consider conducting further market research to understand user preferences, demographics, and behavior patterns on each platform. This will help refine our marketing strategies and budget allocation to effectively target and engage users on the different platforms, maximizing company's reach and impact. Additionally, monitor the performance of each platform regularly and adjust the marketing efforts accordingly to optimize conversions and user acquisition.

The most crucial conversion stage was the Ride-Accepted to Ride- Completed,

Ios conversion rate – 50.76%

Android conversion rate – 51.12%

Web conversion rate – 49.80%

iOS Platform:

The iOS platform had a conversion rate of 50.76% from "Ride-Accepted" to "Ride-Completed," which was slightly lower compared to Android but still relatively close. Despite the slightly lower conversion rate, iOS had a larger user base and higher engagement levels, as indicated by the earlier insights.

Recommendations,

- Allocate a significant portion of the marketing budget to retain and engage existing iOS users.
- Focus on improving the ride experience, addressing any pain points, and providing incentives for completing rides.
- Additionally, invest in targeted marketing campaigns to attract new iOS users to increase the potential for ride completions.

Android Platform:

The Android platform had a slightly higher conversion rate of 51.12% from "Ride-Accepted" to "Ride-Completed." Android users show a good level of engagement and willingness to complete rides, making this platform a valuable target for marketing efforts.

Recommendations,

- Allocate a portion of the marketing budget to retain and engage existing Android users.
- Improve the app experience, offer personalized incentives, and communicate the benefits of completing rides.
- Focus on targeted marketing campaigns to attract new Android users and increase the overall ride completion rate.

Web Platform:

The web platform had a conversion rate of 49.80% from "Ride-Accepted" to "Ride-Completed," which was slightly lower compared to iOS and Android. While the web platform may have had a lower conversion rate, it still contributed to the overall ride completion rate and should not be neglected.

Allocate a smaller portion of the marketing budget to optimize the web platform's user experience, streamline the ride process, and address any specific pain points that may be impacting the conversion rate.

Additionally, consider targeted marketing efforts to attract web platform users and increase their ride completion rate.

In summary, based on the provided conversion rates, it is recommended to allocate a significant portion of company's marketing budget towards retaining and engaging iOS and Android users, as they have relatively higher conversion rates. However, it is also important to allocate a smaller portion of the budget towards the web platform to optimize its performance and increase the conversion rate. Continuously monitor the performance and user behavior on each platform to adjust your marketing strategies and budget allocation accordingly.

According to the ride level funnels, when comparing the ride requests and rides completed across the different platforms (iOS, Android, and web), here are some observations:

Ride Requests,

iOS Platform: The number of ride requests was 234,693, which is the highest among the three platforms.

Android Platform: The number of ride requests was 112,317, which was significantly lower compared to iOS.

Web Platform: The number of ride requests was 38,467, which is the lowest among the three platforms.

Rides Completed,

iOS Platform: The number of rides completed was 136,146, which was the highest among the three platforms.

Android Platform: The number of rides completed was 65,431, which was significantly lower compared to iOS.

Web Platform: The number of rides completed was 22,075, which was the lowest among the three platforms.

Based on these numbers, we can see that the iOS platform had the highest number of ride requests and rides completed, indicating a strong user base and a high level of engagement. The Android platform follows with a lower number of ride requests and rides completed but still showed a significant user activity. The web platform had the lowest numbers in terms of ride requests and rides completed, suggesting a relatively smaller user base or lower usage of the platform.

Considering these insights, it is important to focus on platforms that demonstrate higher levels of user engagement and usage. Therefore, allocating a larger portion of company's marketing budget to iOS and Android platforms might be a more effective strategy in terms of generating ride requests and completing rides. However, it's also worth considering the specific goals and target audience of our marketing efforts when making the final decision.

Business Question 3

What age groups perform best at each stage of our funnel? Which age group(s) likely contain our target customers?

Earlier, as it was mentioned that a significant number of Metrocar app downloads had users with unknown age information (nulls), which amounted to 11,289 users. And from those user 1,845 of them had completed the rides.

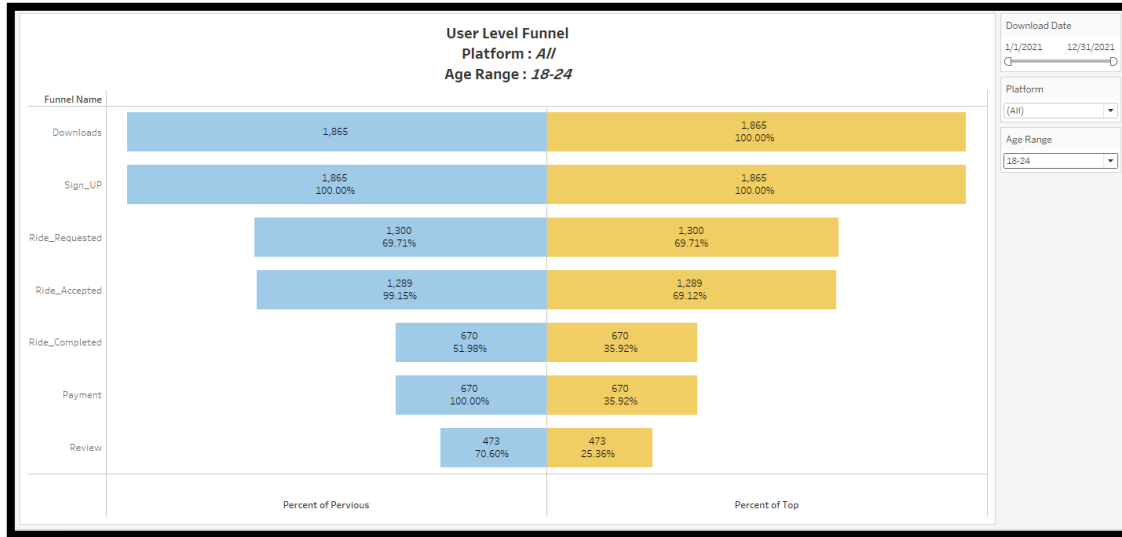


Figure 11 – User Level Funnel – Age Range – 18 - 24

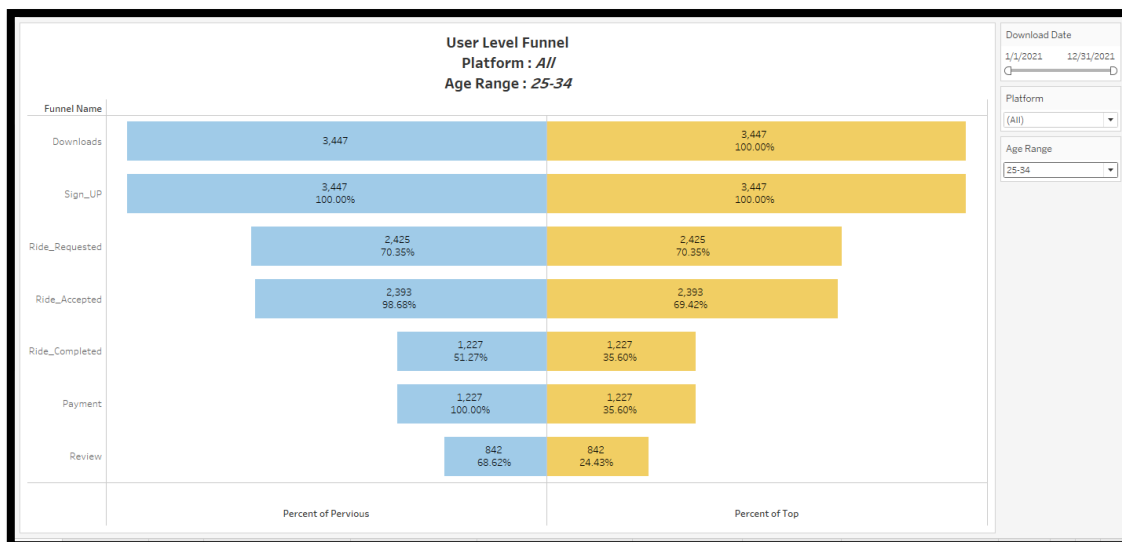


Figure 12 – User Level Funnel – Age Range – 25 - 34

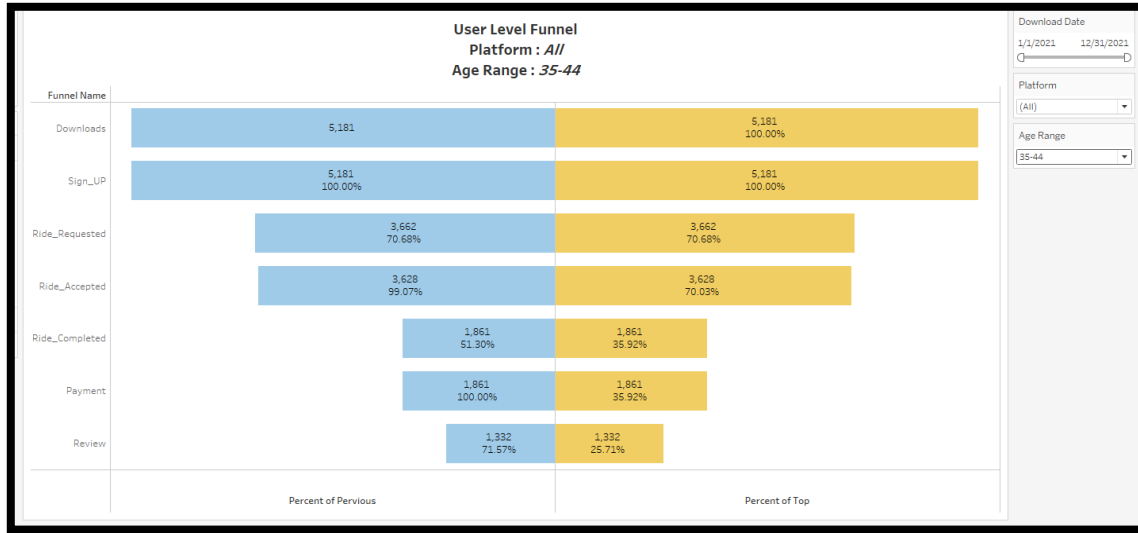


Figure 13 – User Level Funnel – Age Range – 35 - 44

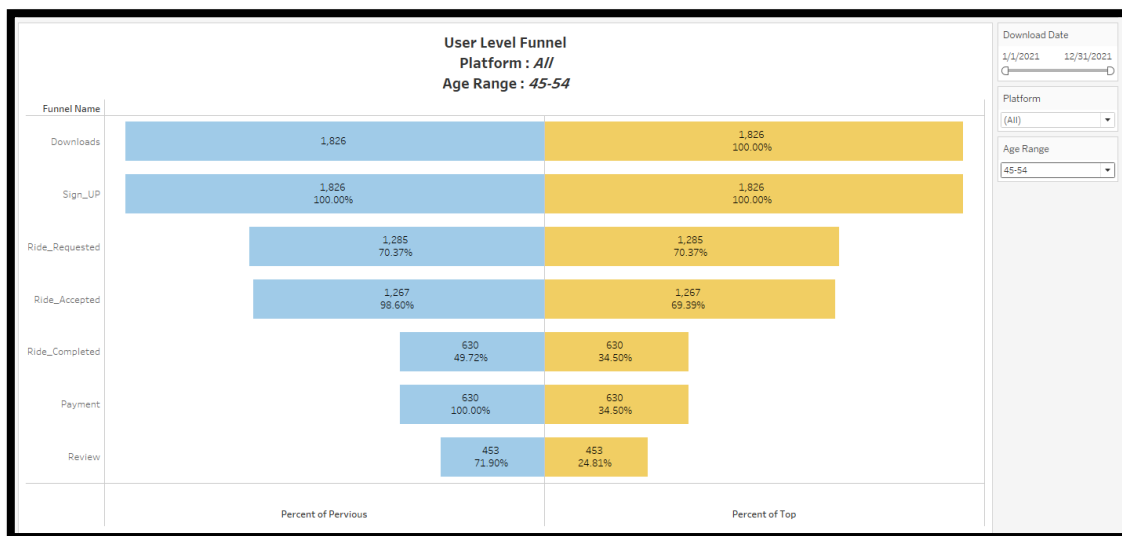


Figure 14 – User Level Funnel – Age Range – 45 – 54

This analysis reveals that the age group of 35-44 has shown the greatest interest in downloading the Metrocar app, with a considerable number of downloads recorded at 5,181. This suggests that individuals within this age range are more likely to embrace and engage with the app's services. The second highest number of app downloads was observed among individuals aged 25-34, indicating a significant level of adoption within this demographic. On the other hand, the age group of 45-54 exhibited the lowest level of app downloads, suggesting a comparatively lower interest or

awareness of the Metrocar app among individuals in this age range. These insights can be valuable for understanding the app's user demographics and tailoring marketing strategies to target the age groups that display the highest potential for app adoption and engagement.

All age groups were signed up to the app, but the highest ride – requested can be seen in 35 – 44 age group which conversion rate of 70.68%. And the age categories of 45 – 54 and 25 – 34 had similar conversion rates of 70.37% and 70.35% respectively. The age range of 18 – 24 had 1300 ride requests with 69.71% conversion rate.

Age Group 35-44: The highest number of ride requests and a relatively high conversion rate of 70.68% indicated that this age group had a strong interest in using the Metrocar app. This age group might have specific transportation needs or preferences that align well with the services provided by Metrocar.

Age Groups 45-54 and 25-34: The similar conversion rates of 70.37% and 70.35% for these age groups suggest that they also had a significant interest in the Metrocar app's services. It's possible that these age groups represent a target demographic that finds value in the convenience, affordability, or other features offered by Metrocar.

The data suggests that this age group had a higher number of sign-ups (1,826) compared to ride requests (1,285). One possible explanation is that individuals in this age range might already own their own cars or have access to other modes of transportation. Therefore, they may be less inclined to use ride-hailing services like Metrocar as frequently as other age groups. Their lower ride request numbers could be attributed to having alternative transportation options readily available.

Age Range 18-24: With 1,300 ride requests and a conversion rate of 69.71%, this age range shows a notable level of engagement with the Metrocar app. Younger individuals might be attracted to the app's modern and tech-savvy approach to transportation services, and they could value the flexibility and ease of use offered by Metrocar.

The assumption that most individuals in this age range might be dependents, such as students or young adults, is plausible. Dependents may have financial considerations and price concerns that could impact their usage of ride-hailing services. They might be more price-sensitive and prefer lower-cost transportation alternatives. As a result, while they showed a notable number of ride requests, their conversion rate might be slightly lower than other age groups, potentially reflecting their price-conscious decision-making.

Taking these points into consideration, it's important to acknowledge that different age groups may have varying transportation needs, preferences, and financial situations. The 45-54 age group may have reduced reliance on ride-hailing services due to car ownership, while the 18-24 age range may have price concerns as dependents. Understanding these dynamics can help tailor marketing strategies and offerings to address the specific needs and motivations of each age group, potentially adjusting pricing structures or highlighting cost-effectiveness for younger demographics.

By recognizing the unique characteristics of each age group, Metrocar can better align its services and marketing efforts to target the most relevant audience segments and address their specific concerns and preferences.

Regarding the performance of age groups at each stage of the funnel, we would need more specific data to make accurate assessments. However, based on the available information, it appears that the age group 35-44 demonstrates the highest ride request volume and conversion rate, indicating strong engagement throughout the funnel stages. The age groups 45-54 and 25-34 also exhibit similar conversion rates, indicating their active participation in the app's usage. The 18-24 age range shows a considerable number of ride requests with a respectable conversion rate, suggesting their interest and potential as target customers.

To identify the age groups likely to contain your target customers, consider factors such as the demographics and characteristics of the existing user base, the value proposition and features of our app that might appeal to specific age groups, and any market research or insights we have on the preferences and needs of different age demographics. By analyzing these factors, we can gain a better understanding of which age groups are most likely to be our target customers and can further refine our marketing strategies to cater to their specific needs and preferences.

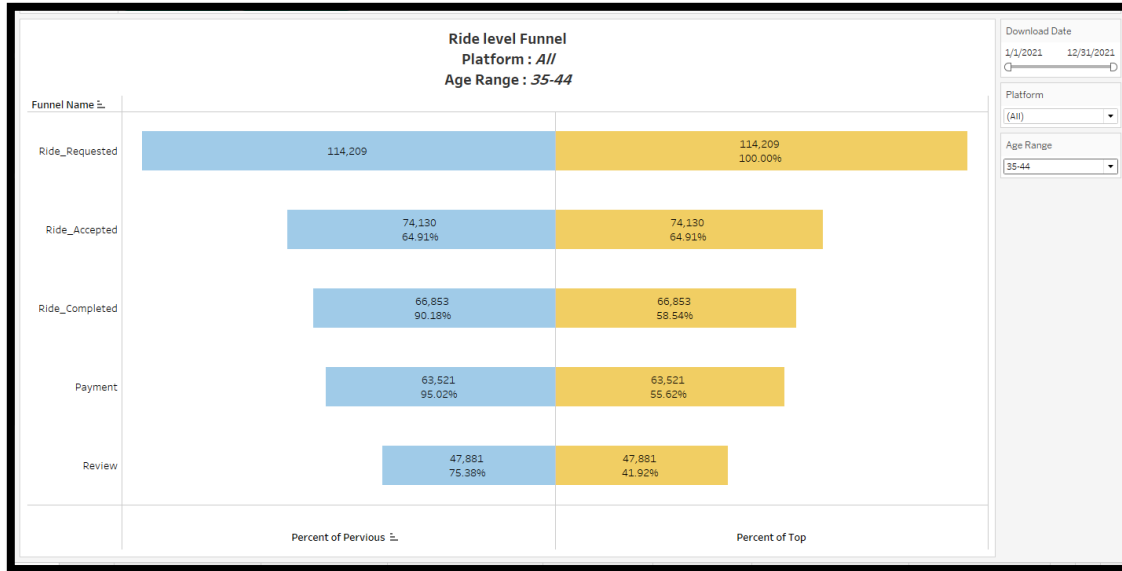


Figure 15 – Ride Level Funnel – Age Range – 35 – 44

When analyzing the ride-level granularity funnel, we observe similar outcomes as the user-level analysis. The age range of 35-44 exhibited the highest number of ride requests and ride completions, indicating a strong demand and engagement with the Metrocar services. On the other hand, the age range of 18-24 had the least number of ride requests and ride completions, suggesting relatively lower usage of the app within this age group.

Recommendations

Targeted Marketing: Allocate a significant portion of the marketing budget towards targeting the age group of 35-44, as they showed the highest ride requests and conversions. Create tailored marketing campaigns highlighting the benefits and features that resonate with this age group, emphasizing convenience, affordability, and any unique aspects of the Metrocar app that align with their preferences.

Retention Strategies: Implement customer retention strategies to ensure continued engagement and usage from the age groups of 45-54 and 25-34, as they exhibit similar conversion rates. Offer loyalty programs, personalized promotions, or incentives to encourage repeat usage and maintain their satisfaction with the Metrocar app.

Price Optimization: Address the price concerns of the 18-24 age range by exploring pricing strategies that cater to their affordability requirements. Consider offering discounted rates, special

pricing plans for students or young adults, or incentives that provide cost-effective options to attract and retain this price-sensitive demographic.

User Experience Enhancements: Continuously improve the user experience of the Metrocar app to increase engagement and conversions across all age groups. Focus on providing a seamless and user-friendly interface, easy booking process, quick response times, and features that enhance the overall experience for users of different age ranges.

Market Research: Conduct further market research to gain deeper insights into the preferences, needs, and behaviors of different age groups. This will help refine marketing strategies, identify untapped opportunities, and tailor the Metrocar app's features and services to better meet the expectations and requirements of target customers.

Retargeting Efforts: Implement retargeting campaigns to re-engage users who have signed up but have not yet made a ride request. Utilize personalized messaging and incentives to encourage them to take their first ride and experience the benefits of the Metrocar app.

Remember to regularly analyze and evaluate the performance of different age groups and iterate on the marketing strategies based on feedback, user behavior, and evolving market trends. By leveraging these recommendations, Metrocar can optimize its marketing efforts, attract and retain target customers, and enhance overall user satisfaction and engagement with the app.

Business Question 4

Surge pricing is the practice of increasing the price of goods or services when there is the greatest demand for them. If we want to adopt a price-surfing strategy, what does the distribution of ride requests look like throughout the day?

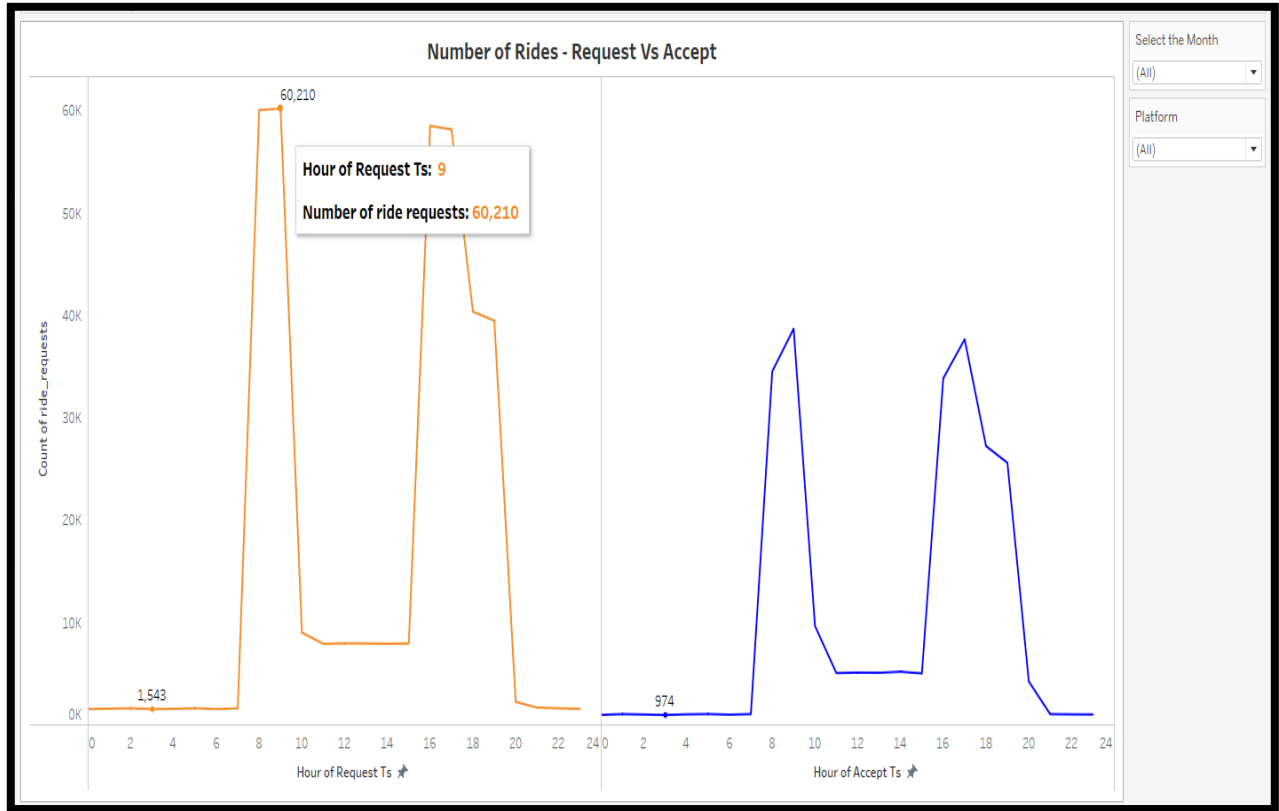


Figure 16 – Number of Rides – 9 hour



Figure 17 – Number of Rides – 16 hour

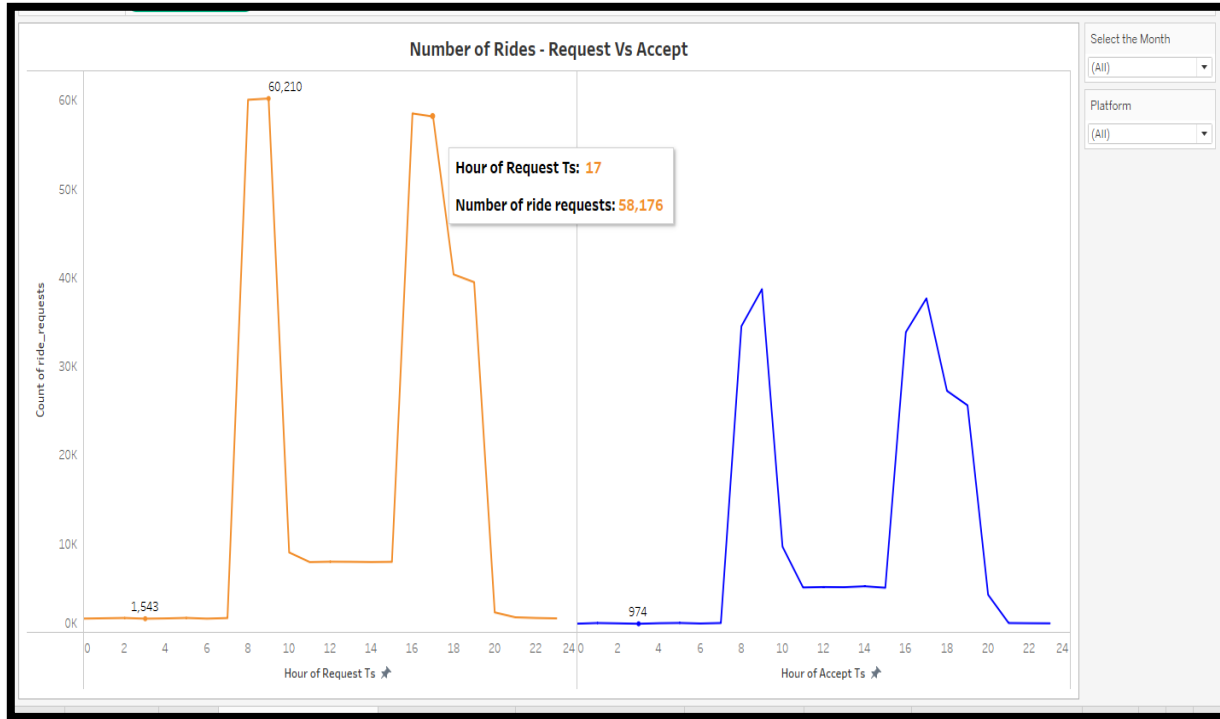


Figure 18 – Number of Rides – 17 hour

It appears that the highest hours of ride requests occurred at 9 AM and 8 AM, with 60,210 and 60,071 ride requests, respectively. The next highest hours were 16 (4 PM) with 58,527 ride requests and 17 (5 PM) with 58,176 ride requests.

These insights suggest that there was a peak in ride requests during the morning rush hour (8-9 AM) and another peak during the afternoon/evening rush hour (4-5 PM). These times were typically associated with heavy traffic and high demand for transportation.

If company want to adopt a price-surfing strategy, we could consider implementing surge pricing during these peak hours when the demand for rides was highest. By increasing the prices during these times, company can potentially incentivize more drivers to be available and ensure that the supply of rides meets the increased demand. This can help balance the supply-demand dynamics and provide better access to transportation during these peak hours.

However, it's important to note that surge pricing can be a sensitive topic, as customers may perceive it as unfair or exploitative. It's crucial to strike a balance between maximizing profitability and maintaining customer satisfaction. It may be beneficial to conduct further analysis, taking into account factors like customer behavior, market dynamics, and competitor pricing strategies, to determine the optimal surge pricing strategy for your specific business and market.

Recommendations

When considering the implementation of surge pricing, here are some recommendations for Metrocar Company,

Monitor and analyze demand patterns: Continuously monitor and analyze the demand patterns throughout the day, week, and year. Look for recurring peak hours, seasonal variations, and any other factors that may impact ride requests. This will help to identify the most suitable times for surge pricing.

Dynamic pricing algorithms: Implement dynamic pricing algorithms that can adjust prices in real-time based on demand and supply fluctuations. These algorithms should consider factors such as current ride requests, available drivers, historical data, and market conditions to determine appropriate surge pricing levels.

Communicate transparently: Clearly communicate the surge pricing mechanism to customers. Provide information about when and why surge pricing may occur, along with the specific multiplier applied to the base fare. Transparency helps manage customer expectations and reduces the likelihood of negative reactions or misunderstandings.

Gradual price increases: Consider implementing surge pricing in a gradual manner. Instead of abruptly increasing prices, start with a moderate surge multiplier and gradually adjust it based on demand. This can help minimize customer dissatisfaction and create a smoother transition to surge pricing.

Offer alternatives and incentives: During peak hours with surge pricing, provide customers with alternative options, such as carpooling, shared rides, or lower-priced services with extended wait times. Additionally, consider offering incentives or discounts to customers who are flexible with their travel times, encouraging them to choose off-peak hours when prices are lower.

Monitor customer feedback: Actively monitor customer feedback and reviews related to surge pricing. If there are consistent complaints or negative reactions, reassess this pricing strategy and make adjustments accordingly. Taking customer feedback into account demonstrates a customer-centric approach and helps maintain customer satisfaction.

Analyze competitor strategies: Research and analyze the pricing strategies of competitors in our market. Understand how they implement surge pricing and evaluate their customer response. This analysis can provide insights into industry best practices and help us to make informed decisions about our own surge pricing strategy.

However, surge pricing should be implemented with caution and sensitivity to customer expectations. Finding the right balance between maximizing profitability and maintaining customer satisfaction is key to a successful pricing strategy.

Business Question 5

What part of our funnel has the lowest conversion rate? What can we do to improve this part of the funnel?

For User level,

The part of the User level funnel with the lowest conversion rate was the "Ride - Completed" stage, with a conversion rate of 50.77%. This means that out of the users who requested a ride, only around half of them successfully completed the ride.

To improve this part of the funnel and increase the conversion rate, here are some suggestions:

User Experience Optimization: Evaluate the user experience during the ride process. Identify any pain points or areas where users may encounter difficulties or obstacles. Simplify the ride request and completion process, minimize steps, and ensure a seamless experience from start to finish.

Driver Availability and Response: Analyze the availability and response time of drivers. If users experience delays or have difficulty finding an available driver, it can negatively impact their ride completion rate. Consider strategies to improve driver availability and response, such as incentivizing drivers during peak demand periods or implementing intelligent matching algorithms.

Clear Communication: Enhance communication with users during the ride process. Provide real-time updates on driver status, estimated arrival time, and any changes or delays. Clear and timely communication can help build trust, reduce uncertainty, and improve the overall ride experience.

Incentives for Completion: Consider implementing incentives or rewards for users who complete rides. This can be in the form of loyalty programs, discounts, or other incentives that encourage users to complete rides and provide feedback.

Prompt Support and Issue Resolution: Establish a robust customer support system to address any issues or concerns promptly. Ensure that users have an easy and accessible way to report problems during the ride and that their issues are resolved satisfactorily. Effective support can help mitigate potential obstacles and improve the completion rate.

Gather User Feedback: Actively collect and analyze user feedback to identify recurring issues or pain points in the ride completion process. Conduct surveys, solicit ratings and reviews, and utilize feedback channels to gain insights into user experiences. This feedback can guide further improvements and optimizations.

Continually monitor and track the impact of any changes or improvements implemented in order to assess their effectiveness and make data-driven decisions for further optimization.

For Ride Level Funnel

The part of the ride-level funnel with the lowest conversion rate is the "Ride - Accepted" stage, with a conversion rate of 64.43%. This means that out of the rides requested, only about two-thirds of them are accepted by drivers.

To improve this part of the funnel and increase the conversion rate, consider the following suggestions:

Driver Availability and Incentives: Assess the availability of drivers and their willingness to accept ride requests. If there is a shortage of available drivers or if they are frequently declining requests, it can negatively impact the conversion rate. Consider implementing incentives for drivers to accept more rides, such as higher earnings during peak hours or bonuses for completing a certain number of rides.

Dynamic Pricing: Implement dynamic pricing mechanisms to adjust fares based on supply and demand. By offering higher fares during periods of high demand or low driver availability, we can incentivize more drivers to accept ride requests, thereby improving the conversion rate.

Driver-User Matching Algorithms: Improve the algorithms used to match drivers with ride requests. Enhance the accuracy and efficiency of the matching process to reduce wait times for users and increase the likelihood of ride acceptance by drivers.

Driver Onboarding and Training: Review the onboarding and training processes for drivers. Ensure that they are adequately prepared and equipped to handle ride requests promptly and efficiently. Consider providing additional training on customer service, navigation, and efficient route planning to improve the overall experience for users.

Enhance User Experience: Assess the user experience during the ride request process. Simplify the user interface, minimize the number of steps required to request a ride, and provide clear instructions to users. A seamless and user-friendly experience can encourage more users to request rides and increase the likelihood of ride acceptance.

Gather User and Driver Feedback: Actively seek feedback from both users and drivers to identify any pain points or areas of improvement. Conduct surveys, ratings, and reviews to gather insights and understand the perspectives of both parties. This feedback can help identify specific issues and guide improvements in the ride acceptance rate.

Continuously monitor and track the impact of any changes implemented in order to assess their effectiveness. Data analysis and feedback evaluation will provide valuable insights to further optimize the ride acceptance rate and enhance the overall performance of the funnel.

6. Appendix

For User & Ride Funnels

```
WITH user_ride_status AS (
SELECT user_id
FROM ride_requests
GROUP BY user_id
),

total_users AS (
SELECT
  a.platform AS platform,
  s.age_range AS age_range,
  a.download_ts::DATE AS download_date,
  COUNT(DISTINCT a.*) AS number_of_users_app_downloaded,
  COUNT(DISTINCT s.user_id) AS total_unique_users_signup,
  COUNT(DISTINCT urs.user_id) AS total_users_ride_requested,
  COUNT(DISTINCT r.ride_id) AS number_of_rides_requested,
  COUNT(DISTINCT CASE WHEN r.accept_ts IS NOT NULL THEN r.user_id END) AS
rides_accepted_by_driver_user_wise,
  COUNT(DISTINCT CASE WHEN accept_ts IS NOT NULL THEN r.ride_id END) AS
rides_accepted_by_driver,
  COUNT(DISTINCT CASE WHEN r.dropoff_ts IS NOT NULL THEN r.user_id END) AS
unique_users_completed_ride,
  COUNT(DISTINCT CASE WHEN dropoff_ts IS NOT NULL THEN r.ride_id END) AS
completed_rides,
  COUNT(DISTINCT CASE WHEN t.charge_status = 'Approved' THEN r.user_id END) AS
number_of_users_complete_payments,
  COUNT(DISTINCT CASE WHEN t.charge_status = 'Approved' THEN r.ride_id END) AS
number_of_rides_complete_payments,
  COUNT(DISTINCT re.user_id) AS number_of_users_provide_reviews,
  COUNT(DISTINCT re.ride_id) AS number_of_rides_received_reviews
FROM app_downloads AS a
LEFT JOIN signups AS s ON a.app_download_key = s.session_id
LEFT JOIN user_ride_status AS urs ON s.user_id = urs.user_id
LEFT JOIN ride_requests AS r ON s.user_id = r.user_id
LEFT JOIN transactions AS t ON t.ride_id = r.ride_id
LEFT JOIN reviews AS re ON re.user_id = s.user_id
--WHERE s.age_range IS NOT NULL
GROUP BY platform, age_range,download_date
),

funnel_steps AS (
```

```

SELECT
  1 AS funnel_step,
  'Downloads' AS funnel_name,
  platform,
  age_range,
  download_date,
  CAST(number_of_users_app_downloaded AS BIGINT) AS user_count,
  CAST(NULL AS BIGINT) AS ride_count
FROM total_users

UNION

SELECT
  2 AS funnel_step,
  'Sign_UP' AS funnel_name,
  platform,
  age_range,
  download_date,
  CAST(total_unique_users_signup AS BIGINT) AS user_count,
  CAST(NULL AS BIGINT) AS ride_count
FROM total_users

UNION

SELECT
  3 AS funnel_step,
  'Ride_Requested' AS funnel_name,
  platform,
  age_range,
  download_date,
  CAST(total_users_ride_requested AS BIGINT) AS user_count,
  CAST(number_of_rides_requested AS BIGINT) AS ride_count
FROM total_users

UNION

SELECT
  4 AS funnel_step,
  'Ride_Accepted' AS funnel_name,
  platform,
  age_range,
  download_date,
  CAST(rides_accepted_by_driver_user_wise AS BIGINT) AS user_count,
  CAST(rides_accepted_by_driver AS BIGINT) AS ride_count
FROM total_users

```

```

UNION

SELECT
    5 AS funnel_step,
    'Ride_Completed' AS funnel_name,
    platform,
    age_range,
    download_date,
    CAST(unique_users_completed_ride AS BIGINT) AS user_count,
    CAST(completed_rides AS BIGINT) AS ride_count
FROM total_users

UNION

SELECT
    6 AS funnel_step,
    'Payment' AS funnel_name,
    platform,
    age_range,
    download_date,
    CAST(number_of_users_complete_payments AS BIGINT) AS user_count,
    CAST(number_of_rides_complete_payments AS BIGINT) AS ride_count
FROM total_users

UNION

SELECT
    7 AS funnel_step,
    'Review' AS funnel_name,
    platform,
    age_range,
    download_date,
    CAST(number_of_users_provide_reviews AS BIGINT) AS user_count,
    CAST(number_of_rides_received_reviews AS BIGINT) AS ride_count
FROM total_users
)

SELECT *
FROM funnel_steps
ORDER BY funnel_steps ASC;

```

For Drop-offs

```
WITH app_downloads_status AS (
SELECT
    COUNT(*) AS number_of_users_app_downloaded
FROM app_downloads AS a
LEFT JOIN signups AS s
ON a.app_download_key = s.session_id
),

user_ride_status AS (
SELECT user_id
FROM ride_requests
GROUP BY user_id
),

total_users AS (
SELECT
    COUNT(DISTINCT s.user_id) AS total_unique_users_signup,
    COUNT(DISTINCT urs.user_id) AS total_users_ride_requested,
    COUNT(DISTINCT
        CASE WHEN r.accept_ts IS NOT NULL THEN r.user_id END) AS
rides_accepted_by_driver,
    COUNT(DISTINCT
        CASE WHEN r.dropoff_ts IS NOT NULL THEN r.user_id END) AS
unique_users_completed_ride
FROM signups AS s
LEFT JOIN user_ride_status AS urs
ON s.user_id = urs.user_id
LEFT JOIN ride_requests AS r
ON s.user_id = r.user_id
),

payment_transaction AS (
SELECT
    COUNT(DISTINCT r.user_id) AS number_of_users_complete_payments
FROM transactions AS t
LEFT JOIN ride_requests AS r
ON t.ride_id = r.ride_id
WHERE charge_status = 'Approved'
),

review_status AS (
SELECT
    COUNT(DISTINCT re.user_id) AS number_of_users_provide_reviews
```



```

FROM reviews AS re
),

funnel_steps AS (
SELECT
    1 AS funnel_step,
    'App_Downloads' AS funnel_name,
    number_of_users_app_downloaded AS Value
FROM app_downloads_status

UNION

SELECT
    2 AS funnel_step,
    'Sign_UP' AS funnel_name,
    total_unique_users_signup AS Value
FROM total_users

UNION

SELECT
    3 AS funnel_step,
    'Requested_Rides' AS funnel_name,
    total_users_ride_requested AS Value
FROM total_users

UNION

SELECT
    4 AS funnel_step,
    'Driver_Acceptance' AS funnel_name,
    rides_accepted_by_driver AS Value
FROM total_users

UNION

SELECT
    5 AS funnel_step,
    'Rides_Completed_Users' AS funnel_name,
    unique_users_completed_ride AS Value
FROM total_users

UNION

SELECT

```

```

6 AS funnel_step,
'Payments_Completed_Users' AS funnel_name,
  number_of_users_complete_payments AS Value
FROM payment_transaction

UNION

SELECT
  7 AS funnel_step,
  'Reviews_Provided_Users' AS funnel_name,
  number_of_users_provide_reviews AS Value
FROM review_status

),

prior_values AS (
SELECT *,
      LAG(value,1) OVER(ORDER BY funnel_step) AS prior_value
FROM funnel_steps
)

SELECT *,
      ABS(value - prior_value) AS difference,
      ROUND(ABS(value - prior_value)::numeric/prior_value,3) AS drop_off_rates
FROM prior_values;

```

The Tableau Public Link, for Metrocar, Ride Sharing App Funnel Analysis Project

https://public.tableau.com/views/MetrocarRide-SharingAppFunnelAnalysisProject/Metrocar?:language=en-US&:display_count=n&:origin=viz_share_link