A WRITTEN REPORT OF METRO CAR FUNNEL ANALYSIS

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Introduction.

This report provides a detailed analysis of Metrocar's customer funnel. The analysis covers multiple customer journey stages, including platform performance, age group analysis, and surge pricing distribution. It identifies potential areas for improvement and recommends ways to increase revenue and customer satisfaction by focusing on key insights derived from the business questions outlined. The report comprehensively examines the customer journey and provides a detailed analysis of each stage, highlighting opportunities for improvement.

The specific business questions that Metrocar aims to address through the implementation of Funnel Analysis are outlined below;

- What steps of the funnel should we research and improve? Are there any specific drop-off points preventing users from completing their first ride?
- To recommend where to focus our marketing budget for the upcoming year, what insights can we make based on the platform?
- What age groups perform best at each stage of our funnel? Which age group(s) likely contain our target customers?
- If we want to adopt a price-surging strategy, what does the distribution of ride requests look like throughout the day?
- What part of our funnel has the lowest conversion rate? What can we do to improve this part of the funnel? Findings and Recommendations

The main goal of the Metrocar project is to provide a seamless and user-friendly transportation solution that puts the user first, using a mobile application. The project aims to transform how people access and experience transportation services by offering a reliable, convenient, and efficient platform. This platform will allow users to request rides, connect with nearby drivers, complete transactions securely, and provide feedback on their experience. Users can request rides, connect with nearby drivers, complete secure transactions, and provide feedback on their experience. The project aims to enhance user engagement, improve conversion rates, optimize platform performance, and drive revenue growth by delivering a cutting-edge, technology-driven transportation experience.

Data Analysis Methodology.

Data Collection:

- Data Sources: Data was collected from Metrocars through Masterschool, which provided datasets for app downloads, signups, ride requests, transactions, and reviews.
- Data Analysis Tools: Utilized SQL for data extraction, transformation, and analysis.

Analysis Process:

- Metrics Aggregation: Summarized and aggregated key metrics for each stage within the user and ride funnels.
- Visualization Creation: Leveraged Tableau to generate insightful visualizations based on the Metrocar analysis results.
- Visualization Filters: Filters such as platform, age range, and date were applied to dissect and narrow down insights from the visualizations.

Visual Insights:

- User Funnel Comparison: Created visual representations comparing various stages of the user funnel, including app downloads, signups, ride requests, transactions, and reviews.
- Ride Funnel Analysis: Developed charts to depict the progression and metrics of ride-related stages, including ride requests, driver acceptance, ride completion, and reviews.
- Filter Applications: Used platform, age range, and date filters to provide specific insights into user segments and temporal trends.

Key Observations:

- Platform Performance: Insights derived from the platform filters highlighted performance differences among iOS, Android, and web users across various funnel stages.

- Age Group Trends: Analysis based on age range filters revealed trends in user behaviour and engagement at different stages of the funnel.
- Temporal Analysis: Date filters provided temporal patterns regarding user activity and ride requests over specific periods.

The combination of SQL analysis and Tableau visualizations facilitated a comprehensive understanding of user behaviour throughout Metrocar's funnel stages, enabling targeted insights and strategic decision-making for the future.

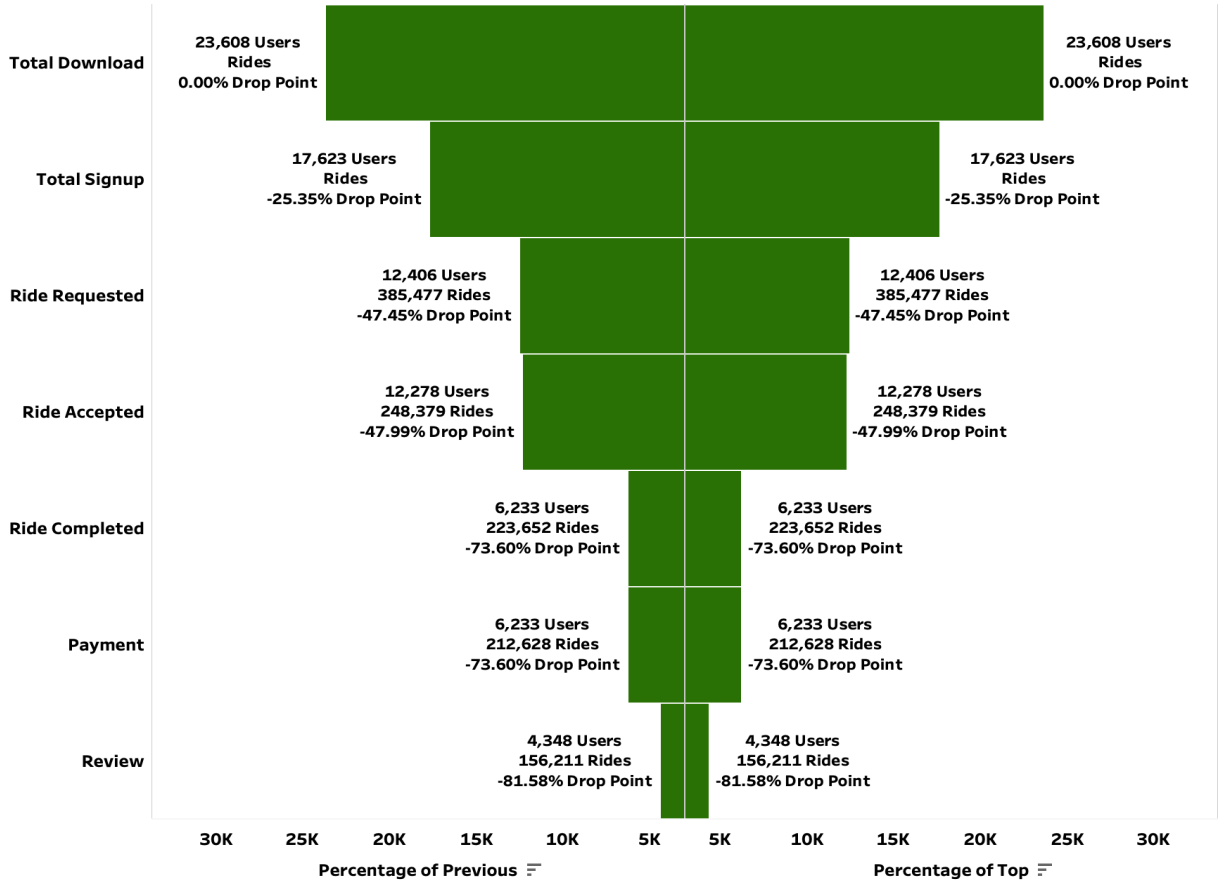
Funnel Analysis & Recommendations.

The customer funnel for Metrocar typically includes the following stages and key statistics:

- **App Download:** Total users **(23,608)** who downloaded the Metrocar app from the App Store or Google Play Store.
- **Signup:** Total users **(17,623)** who created a Metrocar account including their name, email, phone number, and payment info.
- **Request Ride:** Total users **(12,406)** who initiated total ride requests of **(385,477)**, specifying pickup location, destination, and ride capacity.
- **Driver Acceptance:** Total users **(12,278)** whose total ride requests of **(248,379)** were accepted by nearby drivers.
- **Ride Completed:** Total users **(6,233)** who successfully completed a total ride of **(223,652)** from pickup to destination.
- **Payment:** Total users **(6,233)** who were charged for a total ride request of **(212,628)** after completing their ride.
- **Review:** Total users **(4,348)** who provided ratings and reviews about their ride experience.Total ride of **(156,211)**.

funnel_step	funnel_name	user_count	ride_count
1	download	23608	(NULL)
2	signups	17623	(NULL)
3	ride_requested	12406	385477
4	ride_accepted	12278	248379
5	ride_completed	6233	223652
6	payment	6233	212628
7	review	4348	156211

According to the analysis, Metrocar witnesses a significant drop in user engagement at the 'Ride signup', 'Ride requested', 'Ride completed' and 'review' stages. Although the number of users requesting a ride is high, the number of users completing the ride and payment process is comparatively lower. This indicates a noticeable decline in user engagement during this transition.



Funnel Stages and Potential Improvements:

- **Total Download to Total Signup:** The transition from app download to user signup exhibits a notable gap. User hesitance after app download may be due to a complex signup process and unclear value proposition. Streamlining the onboarding process with an intuitive signup and offering incentives for completing it will improve the experience.
- **Total Signup to Ride Requested:** Many users sign up for the ride service but do not proceed to request a ride. This could be due to a lack of motivation or clear guidance after registration. Users may also have concerns about the ride-booking process. Providing a seamless transition from signup to ride request with clear navigation is essential to improve this stage. Additionally, offering promotional discounts for the first ride can encourage immediate engagement and help users overcome any hesitations they may have about the service.

- ❖ **Ride Requested to Ride Completed:** Ride requests initiated by users but not completed can be a problem. Delayed driver acceptance often leads to user disengagement. Additionally, a lack of real-time updates or communication during the ride can further worsen the situation. To tackle this problem, we can optimize driver acceptance time through incentives for quick responses. Implementing live ride tracking and providing regular updates can also enhance user confidence and decrease the number of users dropping out of the ride. Another approach could involve driver training programs, incentivizing drivers to accept ride requests promptly, such as offering bonuses or incentives for quick responses or providing additional user incentives upon ride completion.
- ❖ **Ride Completed to Review:** Some users complete their rides but do not leave any reviews. This may be due to them not noticing the review prompt or thinking that leaving a review is not important. It could also be due to a lack of motivation or dissatisfaction with the ride. To address this issue, sending reminders and offering incentives to users for leaving reviews after completing their rides is recommended. Additionally, requesting feedback immediately after the ride will help capture the user's sentiment and improve this stage.

Metrocar can streamline user journeys, enhance satisfaction, and increase engagement and retention by addressing identified drop-off points in specific funnel stages.

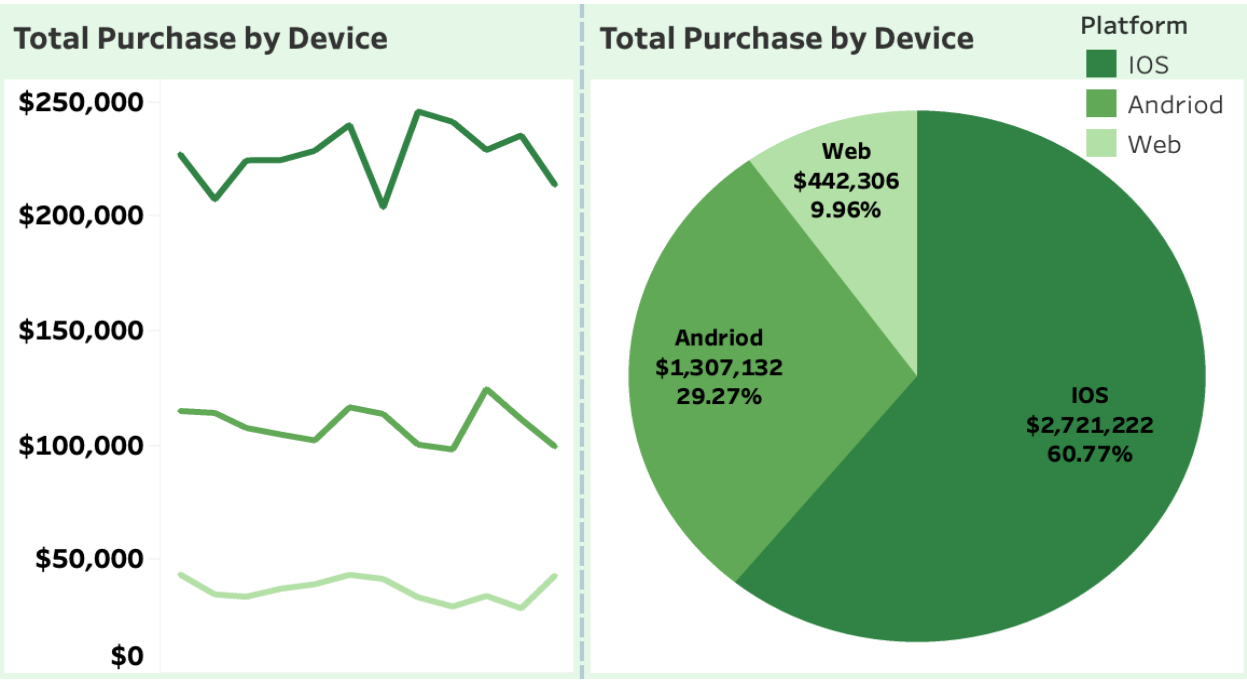
Platform Insights and Marketing Focus (iOS, Android & Web).

Comparison:

- **iOS Platform:**
  - Total Users: 14,290
  - Total Rides: 234,693
  - Total Sum of Purchases: $2,721,222
- **Android Platform:**
  - Total Users: 6,935
  - Total Rides: 112,317
  - Total Sum of Purchases: $1,307,676
- **Web Platform:**
  - Total Users: 2,383
  - Total Rides: 38,467
  - Total Sum of Purchases: $442,545

platform	user_signup	total_downloads	pct_of_downloads	number_of_requests	avg_rating	total_purchase
ios	14290	23608	0.6053032870213487	234693	3.0606641726136209	2721960.7100000293
android	6935	23608	0.2937563537783802	112317	3.0650190197673652	1307676.230000016
web	2383	23608	0.1009403592002711	38467	3.0746161385168246	442544.88000000146

iOS has the highest user engagement, rides, and purchases compared to Android and Web platforms.



Recommendations:

- To optimize marketing budgets, it is recommended to allocate a larger portion of the marketing budget to the iOS platform due to its higher user base, ride count, and higher revenue generation potential.
- Enhance Android's user base and ride count through targeted marketing and acquisition strategies.
- Discover methods to improve web user experience for increased engagement and purchases.

Age Group Analysis & Target Customers.

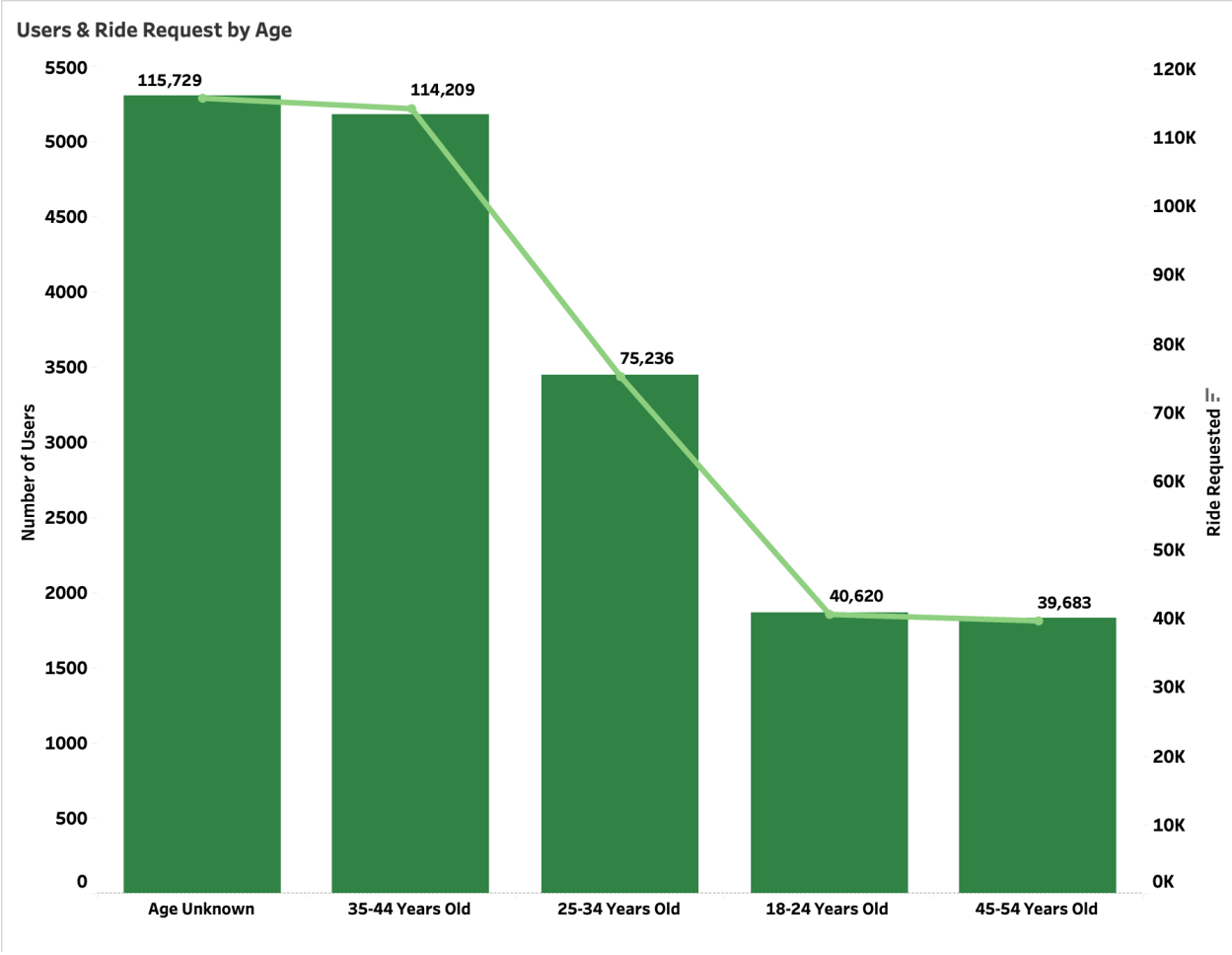
Breakdown:

- **18-24 years old:**
    - User Signup: 1,865
    - Ride Requests: 40,620
    - Percentage Download: 7.90%
- **25-34 years old**:
    - User Signup: 3,447
    - Ride Requests: 75,236
    - Percentage Download: 14.60%
- **35-44 years old:**
    - User Signup: 5,181
    - Ride Requests: 114,207
    - Percentage Download: 21.95%
- **45-54 years old:**
    - User Signup: 1,826
    - Ride Requests: 39,683
    - Percentage Download: 7.73%
- **Unknown Age:**
    - User Signup: 5,304
    - Ride Requests: 115,729
    - Percentage Download: 22.45%

age_range	user_signup	total_downloads	pct_of_downloads	number_of_requests	avg_rating	total_purchase
(NULL)	5985	23608	0.2535157573703829	0	(NULL)	(NULL)
Unknown	5304	23608	0.22466960352422907	115729	3.0789885180717509	1316723.1199999948
35-44	5181	23608	0.2194595052524568	114209	3.0529646415070696	1336909.6100000015
25-34	3447	23608	0.14600982717722805	75236	3.0648951972272652	882903.8199999926
18-24	1865	23608	0.0789986445272789	40620	3.0569426451536921	480886.9700000023
45-54	1826	23608	0.07734666214842427	39683	3.0542150181126051	454758.30000000156

Target Customer Insight:

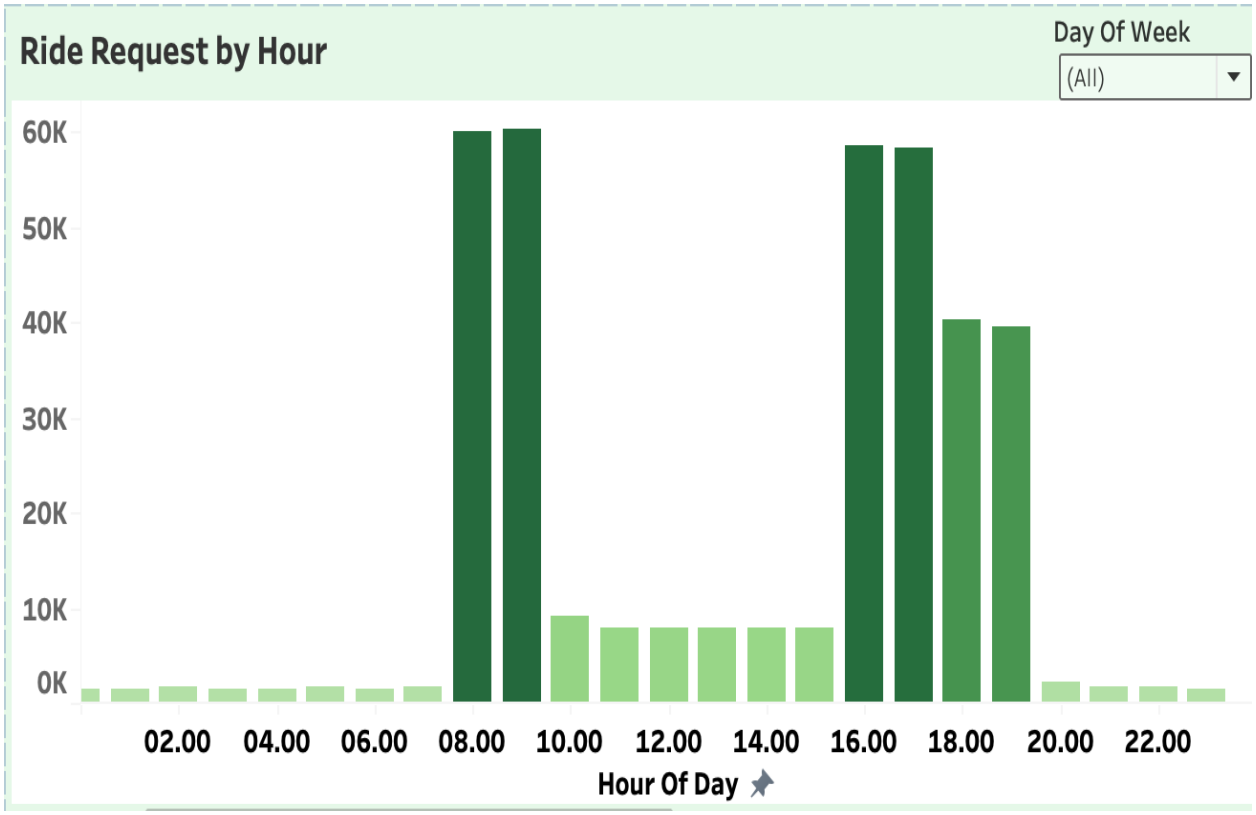
- Based on our analysis, the age group of 35-44 years old shows the highest level of engagement in terms of both user signups and ride requests. This suggests that they could be the most profitable and a potential primary target customer group for Metrocar. By launching targeted marketing campaigns towards this group, Metrocar could expect to see positive results.
- The younger demographic of 18-24 years old and 25-34 years old also displays significant engagement, suggesting they are valuable segments to focus on for growth and retention strategies and should also be considered in marketing strategies.
- To capture potential users, it is important to analyze and incentivize the group of people who belong to the Unknown Ages category.



Surge Pricing Analysis.

Demand Pattern Analysis:

- High ride requests during peak hours, specifically between 8 AM - 9 AM and 4 PM - 7 PM.
- The demand is lower during late night and early morning hours.



Surge Pricing Implementation:

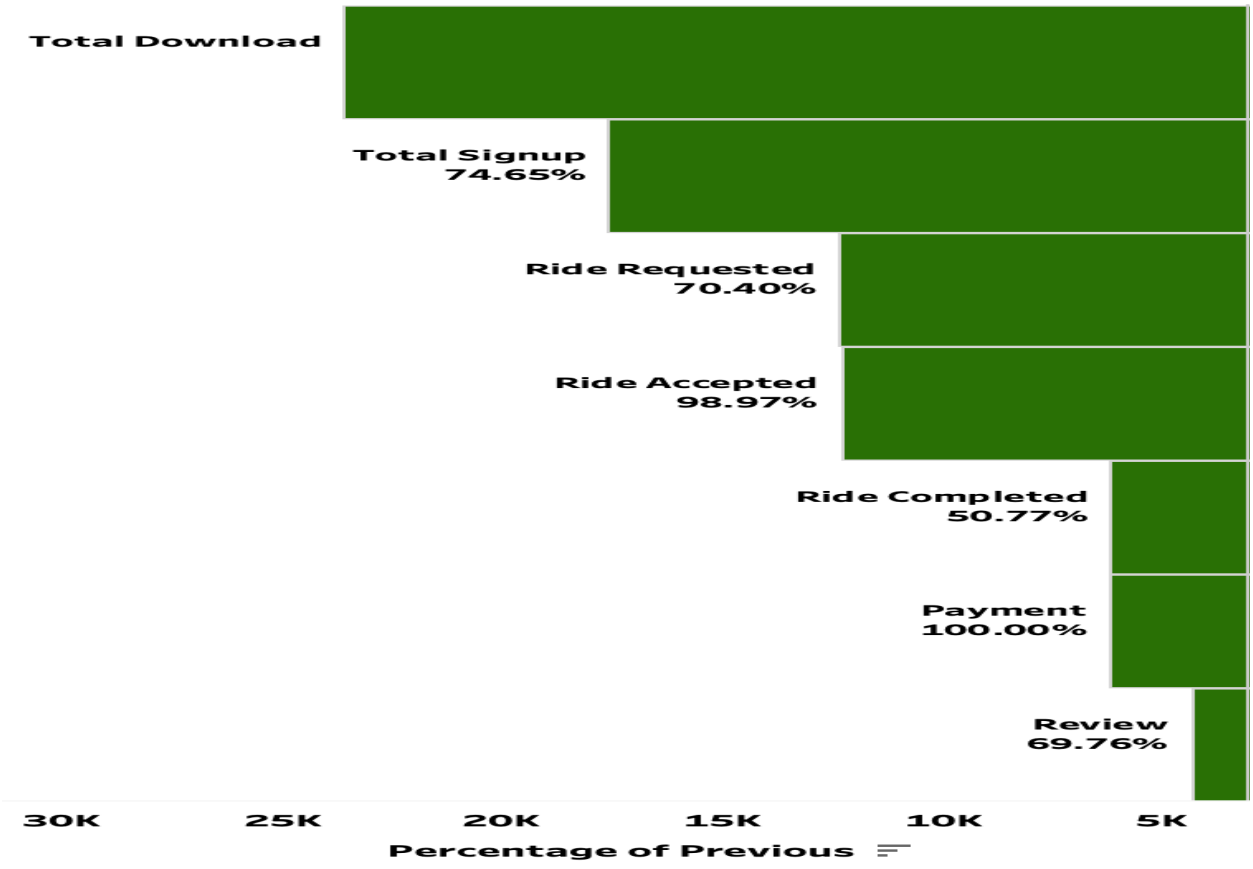
- To increase revenue during peak demand times, consider implementing a price-surging strategy. This involves increasing the prices of goods or services during peak periods when demand is high.
- Gradually increase prices based on the intensity of demand peaks, ensuring revenue maximization during these periods.
- Consider a flexible surge pricing model that responds dynamically to real-time demand fluctuations.

Conversion Rate Improvement.

Identify:

- Funnel Stage with Lowest Conversion Rate: Using the Percentage of previous method, it can be determined that the funnel stage with the lowest conversion rate is the Ride Completed stage, which has a conversion rate of about 50.77%. It is worth noting that there is a significant decline in the conversion rate from the Ride Accepted stage to the Ride Completed stage.

funnel_step	funnel_name	value	previous_value	percent_previous
1	download	23608	(NULL)	(NULL)
2	signups	17623	23608	0.7464842426296171
3	ride_requested	12406	17623	0.7039664075356069
4	ride_accepted	12278	12406	0.9896824117362566
5	completed	6233	12278	0.5076559700276918
6	payment	6233	6233	1
7	review	4348	6233	0.6975774105567143



Recommendations:

- Enhanced User Guidance: It would be helpful to have clearer instructions or tooltips available during the specific stage to guide users and ensure a better user experience. Any spelling, grammar, and punctuation errors have been corrected.
- Optimization of User Interface (UI): It is important to review and improve the UI/UX design to reduce any potential confusion and make the user experience smoother. Also, ensuring the design is free from spelling, grammar or punctuation errors is very important.
- Incentivize Completion: To encourage users to complete a certain stage, it is recommended to provide them with incentives or discounts as a reward.
- Analytical Insights: To improve the service, it is important to gather feedback from the users and analyze it carefully. This will help identify specific areas that may be causing problems for the users and ensure appropriate steps are taken to address those issues effectively.

Conclusion.

Based on the analysis, there are several areas that Metrocar can improve to enhance the customer funnel and increase revenue. Firstly, the Request Ride stage needs to be improved to enhance the user experience. Secondly, IOS and Android platforms should be prioritised for marketing initiatives. Thirdly, 35 to 44-year-olds should be targeted in the marketing campaigns. Fourthly, surge pricing strategies should be adopted during peak demand times. Lastly, the payment process should be simplified to improve conversion rates. By implementing these insights, Metrocar can significantly improve its overall performance and revenue generation while providing an excellent user experience to its customers. Metrocar should use data analysis to improve customer satisfaction and foster growth.

This report is a thorough guide for comprehending user behaviour and platform performance and identifying areas for strategic improvements. To ensure sustained growth and customer satisfaction, it is important to continuously monitor and adapt based on user feedback, preferences, and market trends. Additional research may be necessary. This report is a starting point for Metrocar's strategic decision-making process to optimize its customer funnel, increase user engagement, and maximize revenue.

Appendix.

For a detailed analysis process, including SQL queries and Tableau workbooks, please refer to the accompanying files:

SQL QUERIES:

```
WITH totals AS (
   SELECT
                        ap.platform AS platform,
                        s.age_range AS age_range,
                        ap.download_ts AS download_ts,
                        SUM(tr.purchase_amount_usd) AS total_purchase,
      COUNT(DISTINCT ap.app_download_key) AS total_download,
      COUNT(DISTINCT s.user_id) AS total_users_signed_up,
      COUNT(DISTINCT r.user_id) AS total_users_ride_requested,
                        COUNT(DISTINCT CASE WHEN r.request_ts IS NOT NULL THEN r.ride_id
END) AS total_ride_requests,
                        COUNT(DISTINCT CASE WHEN r.accept_ts IS NOT NULL THEN r.user_id
END) AS total_driver_ride_accepted,
                        COUNT(DISTINCT CASE WHEN r.accept_ts IS NOT NULL THEN r.ride_id
END) AS total_ride_accepted,
      COUNT(DISTINCT CASE WHEN r.pickup_ts IS NOT NULL THEN r.user_id END) AS
driver_pickup,
                        COUNT(DISTINCT CASE WHEN r.pickup_ts IS NOT NULL THEN r.ride_id
END) AS ride_pickup,
                        COUNT(DISTINCT CASE WHEN tr.charge_status = 'Approved' THEN
r.user_id END) AS ride_payment,
                        COUNT(DISTINCT CASE WHEN tr.charge_status = 'Approved' THEN
r.ride_id END) AS total_ride_payment,
                        COUNT(DISTINCT CASE WHEN rv.review IS NOT NULL THEN r.user_id
END) AS driver_review,
                        COUNT(DISTINCT CASE WHEN rv.review IS NOT NULL THEN r.ride_id
END) AS total_driver_review
   FROM app_downloads AS ap
   LEFT JOIN signups AS s ON ap.app_download_key = s.session_id
   LEFT JOIN ride_requests AS r ON s.user_id = r.user_id
         LEFT JOIN transactions AS tr ON r.ride_id = tr.ride_id
         LEFT JOIN reviews rv ON r.ride_id = rv.ride_id
         GROUP BY platform, age_range, download_ts
),
```

```
funnel_stages AS (
  SELECT
    1 AS funnel_step,
    'download' AS funnel_name,
                platform AS platform,
                age_range AS age_range,
                download_ts AS download_ts,
    CAST(total_download AS BIGINT) AS user_count,
    CAST(NULL AS BIGINT) AS ride_count,
                CAST(NULL AS BIGINT) AS total_purchase
  FROM totals
  UNION
  SELECT
    2 AS funnel_step,
    'signups' AS funnel_name,
                platform AS platform,
                age_range AS age_range,
                download_ts AS download_ts,
    CAST(total_users_signed_up AS BIGINT) AS user_count,
                CAST(NULL AS BIGINT) AS ride_count,
                CAST(NULL AS BIGINT) AS total_purchase
  FROM totals
  UNION
  SELECT
    3 AS funnel_step,
    'ride_requested' AS funnel_name,
                platform AS platform,
                age_range AS age_range,
                download_ts AS download_ts,
    CAST(total_users_ride_requested AS BIGINT) AS user_count,
                CAST(total_ride_requests AS BIGINT) AS ride_count,
                CAST(NULL AS BIGINT) AS total_purchase
  FROM totals
      UNION
  SELECT
    4 AS funnel_step,
    'ride_accepted' AS funnel_name,
                platform AS platform,
                age_range AS age_range,
                download_ts AS download_ts,
    CAST(total_driver_ride_accepted AS BIGINT) AS user_count,
                CAST(total_ride_accepted AS BIGINT) AS ride_count,
```

```
                        CAST(NULL AS BIGINT) AS total_purchase
    FROM totals
            UNION
    SELECT
        5 AS funnel_step,
        'ride_completed' AS funnel_name,
                        platform AS platform,
                        age_range AS age_range,
                        download_ts AS download_ts,
        CAST(driver_pickup AS BIGINT) AS user_count,
                        CAST(ride_pickup AS BIGINT) AS ride_count,
                        CAST(NULL AS BIGINT) AS total_purchase
    FROM totals
            UNION
    SELECT
        6 AS funnel_step,
        'payment' AS funnel_name,
                        platform AS platform,
                        age_range AS age_range,
                        download_ts AS download_ts,
        CAST(ride_payment AS BIGINT) AS user_count,
                        CAST(total_ride_payment AS BIGINT) AS ride_count,
                        total_purchase AS total_purchase
    FROM totals
            UNION
    SELECT
        7 AS funnel_step,
        'review' AS funnel_name,
                        platform AS platform,
                        age_range AS age_range,
                        download_ts AS download_ts,
        CAST(driver_review AS BIGINT) AS user_count,
                        CAST(total_driver_review AS BIGINT) AS ride_count,
                        CAST(NULL AS BIGINT) AS total_purchase
    FROM totals
)

SELECT funnel_step, funnel_name, platform, age_range, DATE(download_ts) AS download_date,
    SUM(user_count) AS user_count, SUM(ride_count) AS ride_count, SUM(total_purchase) AS
total_purchase
FROM funnel_stages
GROUP BY funnel_step, funnel_name, platform, age_range, download_date
```

```
ORDER BY funnel_step, funnel_name, platform, age_range;

SELECT
   s.age_range,
   COUNT(DISTINCT(a.app_download_key)) AS user_signup,
   SUM(COUNT(DISTINCT(a.app_download_key))) OVER () AS total_downloads,
   COUNT(DISTINCT(a.app_download_key))::float /
      SUM(COUNT(DISTINCT(a.app_download_key))) OVER () AS pct_of_downloads,
   COUNT(r.ride_id) AS number_of_requests,
   AVG(rv.rating) AS avg_rating,
   SUM(t.purchase_amount_usd) AS total_purchase
FROM app_downloads AS a
LEFT JOIN signups AS s
ON a.app_download_key = s.session_id
LEFT JOIN ride_requests AS r
ON r.user_id = s.user_id
LEFT JOIN transactions AS t
ON t.ride_id = r.ride_id
LEFT JOIN reviews AS rv
ON rv.ride_id = r.ride_id
GROUP BY s.age_range
ORDER BY 2 DESC;

SELECT
   a.platform,
   COUNT(DISTINCT(a.app_download_key)) AS user_signup,
   SUM(COUNT(DISTINCT(a.app_download_key))) OVER () AS total_downloads,
   COUNT(DISTINCT(a.app_download_key))::float /
      SUM(COUNT(DISTINCT(a.app_download_key))) OVER () AS pct_of_downloads,
   COUNT(r.ride_id) AS number_of_requests,
   AVG(rv.rating) AS avg_rating,
   SUM(t.purchase_amount_usd) AS total_purchase
FROM app_downloads AS a
LEFT JOIN signups AS s
ON a.app_download_key = s.session_id
LEFT JOIN ride_requests AS r
ON r.user_id = s.user_id
LEFT JOIN transactions AS t
ON t.ride_id = r.ride_id
LEFT JOIN reviews AS rv
ON rv.ride_id = r.ride_id
GROUP BY a.platform
```

```
ORDER BY 2 DESC;

SELECT
  CASE
    WHEN EXTRACT(DOW FROM request_ts) = 0 THEN 'Sunday'
    WHEN EXTRACT(DOW FROM request_ts) = 1 THEN 'Monday'
    WHEN EXTRACT(DOW FROM request_ts) = 2 THEN 'Tuesday'
    WHEN EXTRACT(DOW FROM request_ts) = 3 THEN 'Wednesday'
    WHEN EXTRACT(DOW FROM request_ts) = 4 THEN 'Thursday'
    WHEN EXTRACT(DOW FROM request_ts) = 5 THEN 'Friday'
    WHEN EXTRACT(DOW FROM request_ts) = 6 THEN 'Saturday'
    ELSE 'Unknown' -- In case DOW values are out of range
  END AS day_of_week,
  EXTRACT(HOUR FROM request_ts) AS hour_of_day,
  COUNT(*) AS ride_request_count
FROM
  ride_requests
WHERE
  request_ts IS NOT NULL
GROUP BY
  day_of_week, hour_of_day
ORDER BY
  day_of_week, ride_request_count DESC;
```

Tableau Visualizations:
https://public.tableau.com/views/MetroCarFunnelAnalysis_16999923585140/Dashboard1?:language=en-US&:display_count=n&:origin=viz_share_link