

# Q1. Conversion Funnel Deep Dive

Compute conversion rates across funnel stages

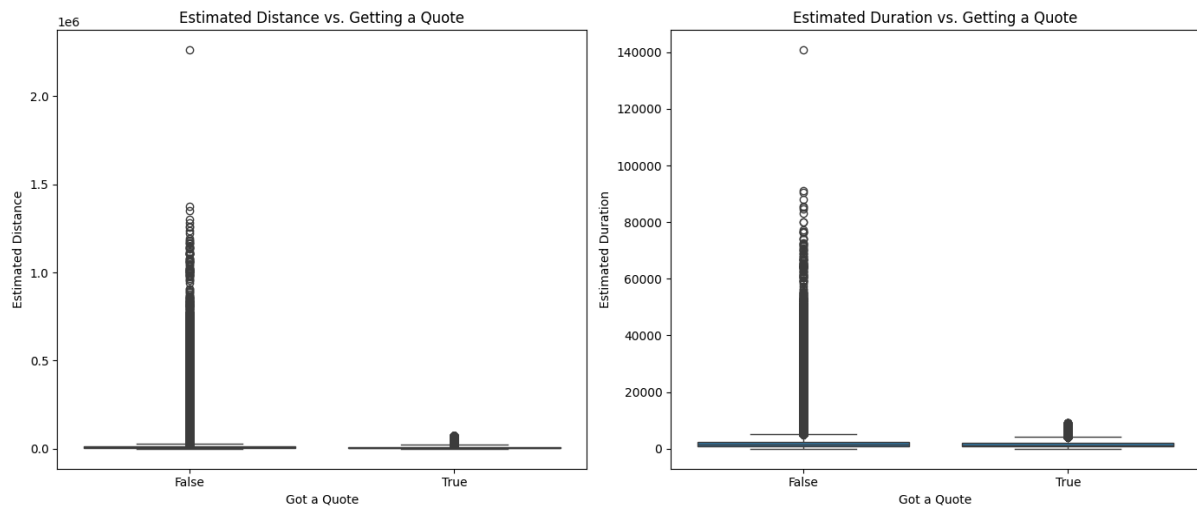
(Search → Quote → Booking → Completed).

Segment by time-of-day Morning (6–10 AM), Day (10 AM–5 PM), Evening (5–9 PM),

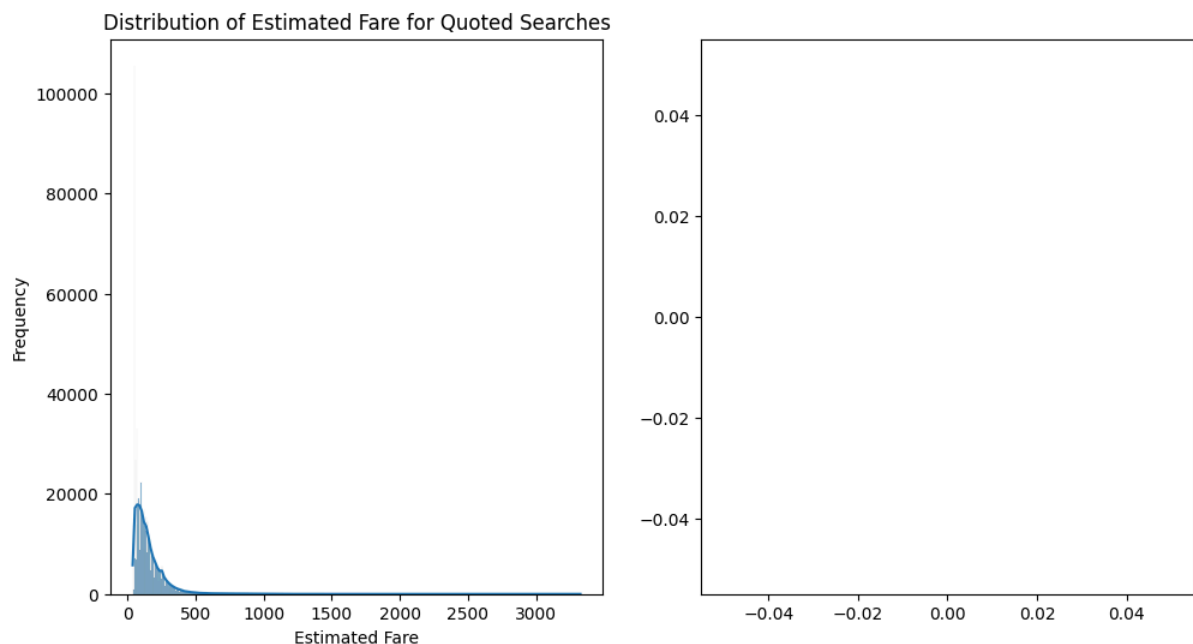
Night (9 PM–6 AM) and trip length (short <5 km, medium 5–15 km, long >15 km),

Identify the maximum drop within each segment.

Propose hypotheses for observed drops and validate with data



The first two box plots show the relationship between estimated distance and duration and whether a search request resulted in a quote. The box plots indicate that searches resulting in a quote generally have shorter estimated distances and durations compared to those that don't get a quote. This suggests that



the distribution of distance to pickup and duration to pickup for searches that received a quote.

These density plots help us understand the typical range and concentration of driver-to-pickup distances and times. Knowing these distributions can help identify if long pickup distances or durations might be a factor in subsequent stages of the funnel

These visualizations suggest that the initial drop-off in the funnel (Search to Quote) might be related to trip characteristics like distance and duration, potentially indicating driver preferences or system limitations for longer trips. For searches that *do* get a quote, the plots on pickup distance and duration can provide further insights into the factors that might influence whether a quoted trip leads to a booking or completion.

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## Q2. Booking Cancellations

Compute the overall cancellation rate.

Break down by driver vs rider cancellations, pickup distance buckets and trip distance buckets.

Identify the top 3 driver cancellation reasons and analyze their trends over time-of-day and trip length.

Analyze the relationship between driver ratings and driver cancellations, and provide key insights

The overall cancellation rate is 26.65  
Drivers cancel more than users (16.01% vs 10.64%).

Cancellations rise with pickup distance — farther pickups lead to more cancellations (up to 47.47% for >10 km).

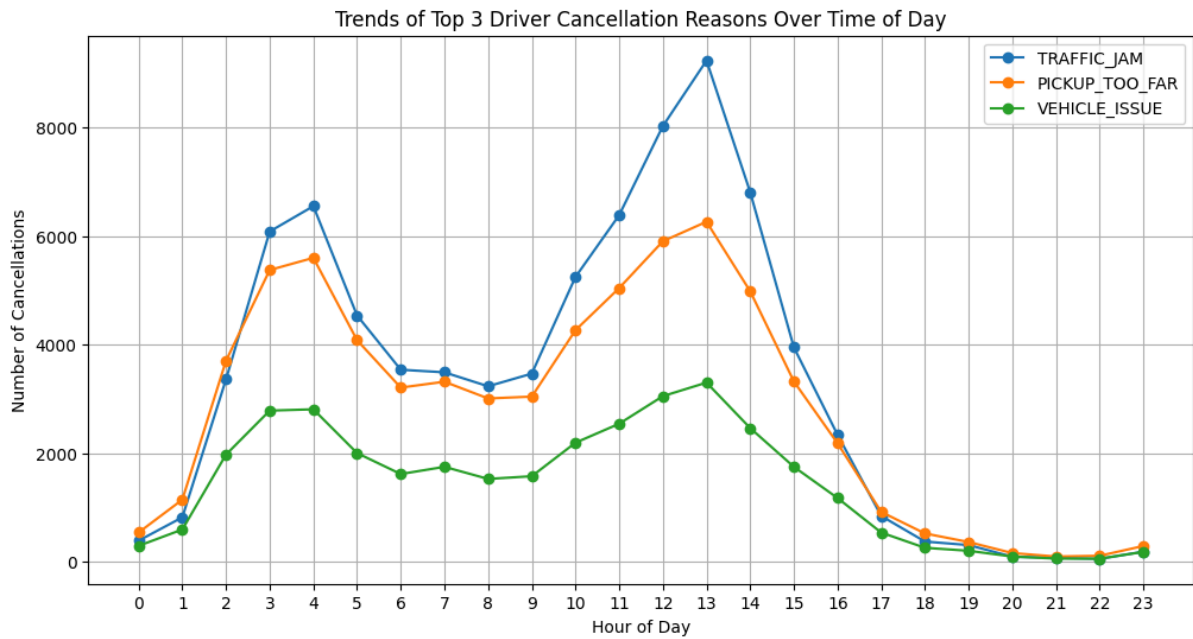
Cancellations also rise with trip distance — longer trips have higher cancellation rates (up to 50.29% for 50–100 km).

Top driver cancellation reasons:

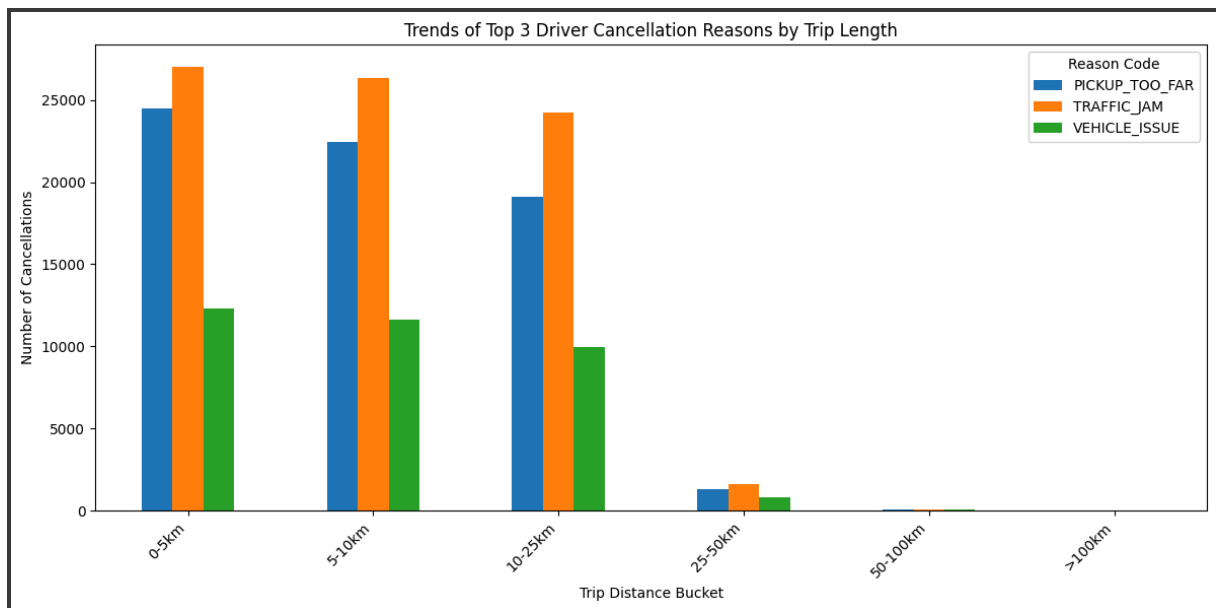
1. Traffic jam
2. Pickup too far
3. Vehicle issue

Cancellation reasons vary by time of day and trip length.

Drivers rated 4–4.5 have the highest cancellation rate (19.38%).



line plot showing how the counts of "TRAFFIC\_JAM", "PICKUP\_TOO\_FAR", and "VEHICLE\_ISSUE" cancellations change throughout the 24 hours of the day



This shows the cancellation reasons across different trip distance buckets ('0-5km', '5-10km', '10-25km', etc).

### Q3. Critical Stage & Root Cause Analysis

Identify the most critical funnel stage using insights from Q1 and Q2.

Perform clustering on drivers/riders to discover behavioral segments (e.g., high-quote, low-booking drivers).

Analyze weekly time-series trends for conversion and cancellations to detect seasonality.

Propose 2–3 product interventions to improve the funnel.

Problems identified

Driver & Rider Cancellations

Cluster 0 drivers: ~70% cancellation rate.

Cluster 1 riders: ~75% cancellation rate (frequent cancellations after receiving a quote). Cancellation rates increase with pickup distance and trip distance.

Conversion Rates:

Quotes → Bookings: ~99.13% (high conversion).

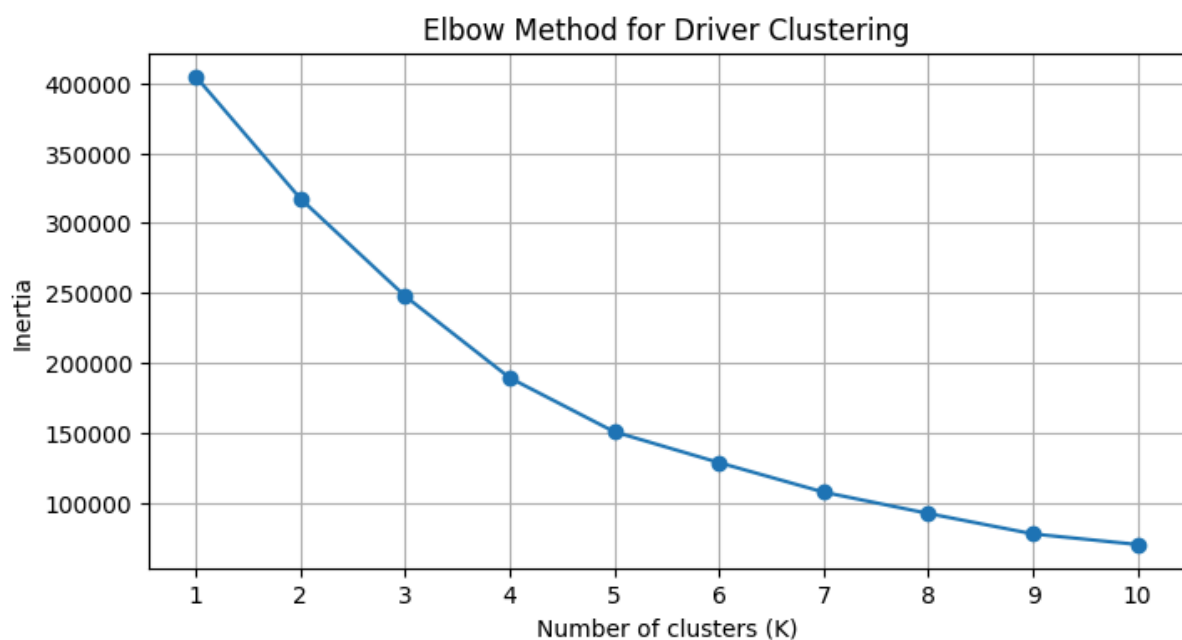
Bookings → Completed: ~67.44% (moderate drop-off).

Funnel Drop-offs:

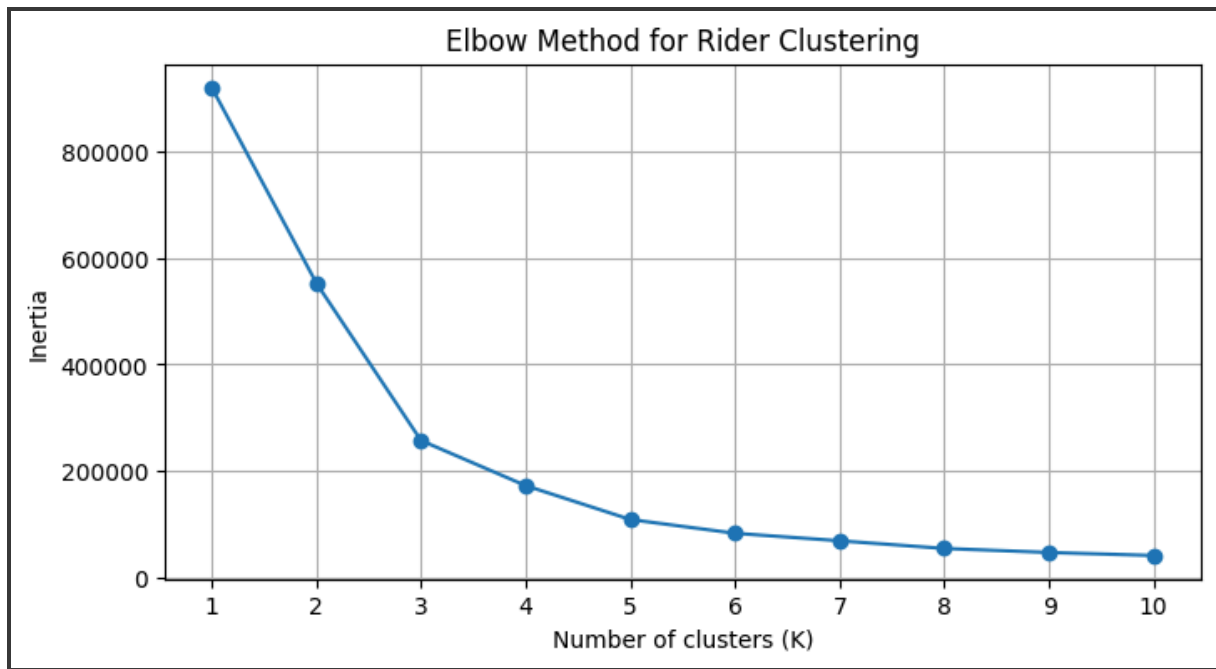
Largest drop-off occurs at Search → Quote: 35.57%.

Drop-off is more pronounced for long trips (>25 km).

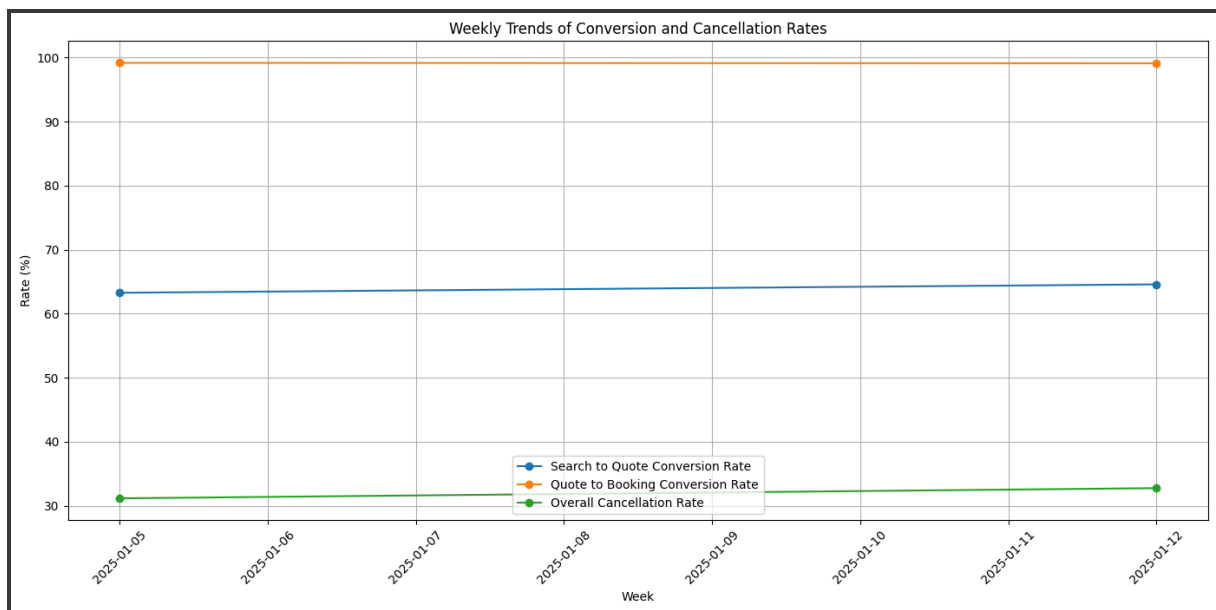
Longer trips (50–100 km) have higher cancellation rates, reducing Booking → Completed conversions.



Shows optimal number of clusters for driver segmentation



Shows the optimal number of clusters for rider segmentation



**Search-to-Quote Rate:** Stable with minor fluctuations — consistent quote generation.

**Quote-to-Booking Rate:** Higher and steady — users usually book once quoted.

**Cancellation Rate:** Varies weekly — may be affected by seasonal or external factors.

# Q4. Funnel Visualization with Storytelling

Build Plotly funnel charts: an overall funnel and a segmented funnel (e.g., by trip length or driver rating).

Use color gradients to highlight drop severity and add annotations for key insights.

Write a detailed summary interpreting the funnel visuals.

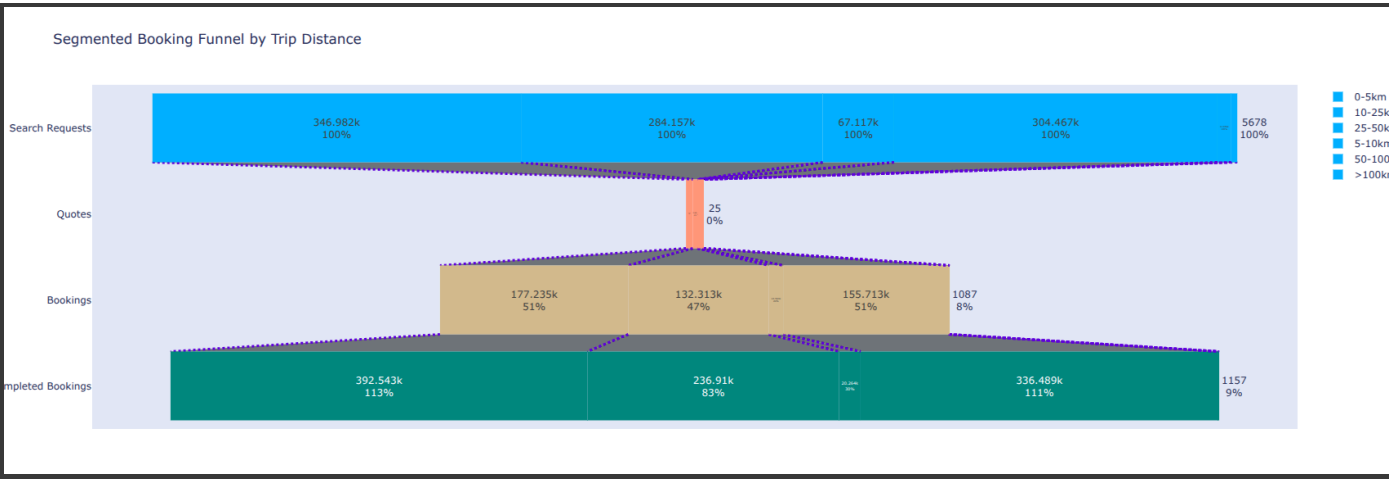
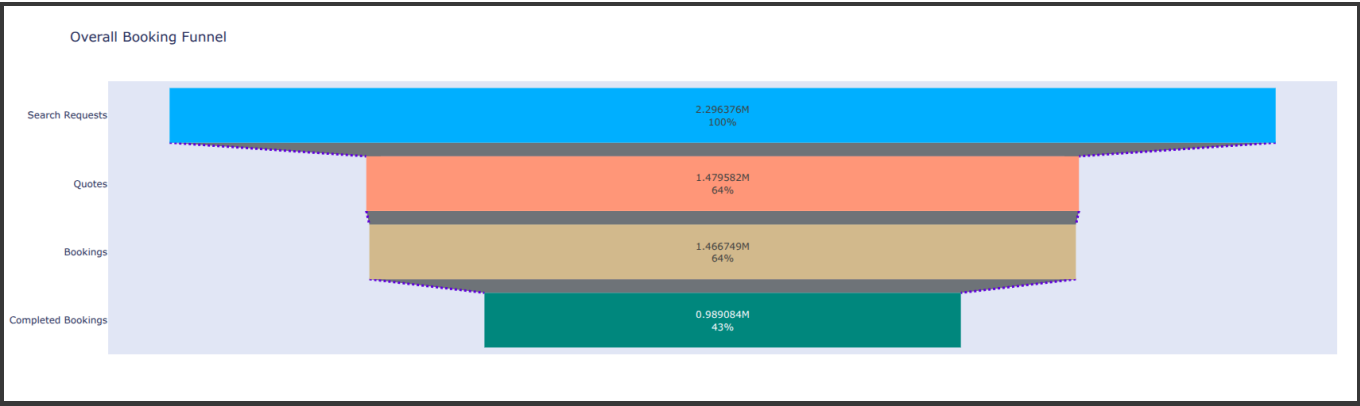
Key Funnel Issue: Biggest drop-off occurs at Search → Quote, causing significant booking losses.

Impact of Trip Distance: Longer trips see lower search-to-quote conversions due to fewer drivers, availability issues, or inaccurate estimates.

Quote → Booking: Conversion is strong overall, but long-distance trips have higher post-booking cancellations.

Main Insight: Improving the Search-to-Quote stage, especially for long trips, is critical to increase overall booking efficiency.

Visualization: A Plotly funnel chart was generated to show the funnel segmented by trip distance buckets.



Overall Funnel: 2.3M searches → 1.48M quotes (64.4%) → 1.47M bookings (99.1%) → 0.99M completed (67.4%).

Main Drop-off: Search → Quote stage (35.6%).

By Trip Distance:

Search-to-Quote conversion low for all distances, worse for trips >25 km.

Quote-to-Booking conversion very high across segments.

Booking-to-Completed shows higher cancellations for long trips (50–100 km, >100 km).

Key Insights:

Major bottleneck: generating quotes, especially for long trips.

Once quoted, users usually book.

Cancellations increase with trip distance.