

BOLT **TRIP ANALYSIS**

Case Study

Bolt



Business Requirement

Bolt Nigeria, a leading ride-hailing company, aims to strengthen its operational performance by leveraging data analytics. With growing competition and diverse market conditions across various Nigerian cities, the company seeks to understand its trip and booking data to identify trends, inefficiencies, and opportunities for strategic improvement.

Objective: This project uses Power BI to analyze Bolt's ride data, focusing on trip patterns, revenue generation, and operational efficiency. The goal is to provide insights that can guide better business decisions, enhance user satisfaction, and increase profitability.

Key Business Questions

- How many trips were completed during the selected time period?
- What is the total revenue generated?
- What is the average revenue per trip?
- How far do customers travel on average?
- What is the average trip duration?
- Which vehicle category (Premium, Go, XL, Comfort) generates the highest profit margin?

Key Performance Indicators (KPI)

1. **Total Bookings** – How many trips were booked over a given period?
2. **Total Booking Value** – What is the total revenue generated from all bookings?
3. **Average Booking Value** – What is the average revenue per booking?
4. **Total Trip Distance** – What is the total distance covered by all trips?
5. **Average Trip Distance** – How far are customers traveling on average per trip?
6. **Average Trip Time** – What is the average duration of trips?



Color schema used

To create a color palette for the Bolt Nigeria Trip Analysis Dashboard using the 60-30-10 rule. Here's the breakdown:

- 1. Primary Color (60%):** Derived from the Bolt logo's green. We'll use the approximate hex code **#00C853 (a vibrant green)** as the dominant color for backgrounds, charts, and main visual elements.
- 2. Secondary Color (30%):** A complementary neutral color, such as a **White (#000000)**, to balance the design and use for secondary elements like borders, grids, or less prominent sections.
- 3. Accent Color (10%):** A contrasting color, such as a **light gray (#E0E0E0)**, to highlight key metrics, buttons, or important data points.



All Measures used and Formula

1. Total Bookings:

Total Bookings = COUNT('Trip Details'[Trip ID])

2. Total Bookings Value

Total Bookings Value = SUM('Trip Details'[Fare_amount]) + SUM('Trip Details'[Surge Fee])

3. Total Trip Distance

Total Trip Distance =
VAR distance = ROUND(SUM('Trip Details'[trip_distance_km])/1000,0)

RETURN CONCATENATE(distance, "K km")

4. Total Trip Distance Measure

Total Trip Distance Measure =
SUM('Trip Details'[trip_distance_km])

All Measures used and Formula

5. Avg Booking Amount :

Avg Booking Amount =
DIVIDE([Total Bookings Value],
[Total Bookings], BLANK())

6. Avg Trip Distance

Avg Trip Distance =
VAR avgkm = ROUND(AVERAGE('Trip
Details'[trip_distance_km]), 0)

RETURN CONCATENATE(avgkm, "
km")

7. Avg Trip Distance Measure

Avg Trip Distance Measure =
AVERAGE('Trip
Details'[trip_distance_km])

8. Avg Trip duration

Avg Trip duration =
VAR time = ROUND(AVERAGEX(
'Trip Details', DATEDIFF('Trip
Details'[Pickup_time], 'Trip
Details'[Dropoff_time], MINUTE)
, 0)
RETURN CONCATENATE(time, "min")

All Measures used and Formula

9. Farthest Trip :

Farthest Trip =

```
VAR MaxDistance = MAX('Trip Details'[trip_distance_km])
```

```
VAR PickupLocation =
```

```
LOOKUPVALUE (
```

```
    'Location Table'[ Location ],
```

```
    'Location Table'[ ID ],
```

```
    CALCULATE(
```

```
        SELECTEDVALUE('Trip Details'[PULocationID]),
```

```
        'Trip Details'[trip_distance_km] = MaxDistance
```

```
    ))
```

```
VAR DropoffLocation =
```

```
LOOKUPVALUE (
```

```
    'Location Table'[ Location ],
```

```
    'Location Table'[ ID ],
```

```
CALCULATE(
```

```
    SELECTEDVALUE('Trip Details' [DOLocationID]),
```

```
    'Trip Details'[trip_distance_km] = MaxDistance
```

```
)
```

```
)
```

```
RETURN
```

```
    "Pickup: " & PickupLocation & " > Drop-off: " & DropoffLocation & " (" &
```

```
    FORMAT(MaxDistance, "0.0") & " km)"
```

All Measures used and Formula

9. Most Frequent Dropoff Point :

Most Frequent Dropoff Point =

VAR DropOffCounts =

```
ADDCOLUMNS(  
    SUMMARIZE(  
        'Trip Details','Location Table'[ Location ]), "DropOffCount",  
        CALCULATE(  
            COUNT('Trip Details'[Trip ID]),  
            USERRELATIONSHIP('Trip Details'[DOLocationID], 'Location Table'[ ID ]))  
    )
```

VAR RankedDropoffs =

```
ADDCOLUMNS(  
    DropOffCounts,  
    "Rank",  
    RANKX(DropOffCounts, [DropOffCount],, DESC, DENSE)) "
```

VAR TopDropoff =

FILTER(RankedDropoffs, [Rank] = 1)

RETURN

CONCATENATEX(TopDropoff, 'Location Table'[Location], ", ")

All Measures used and Formula

10. Most Frequent Pickup Point :

Most Frequent Pickup Point =

```
VAR PickPoint = TOPN(1,  
    SUMMARIZE('Trip Details', 'Location Table'[ Location ],"PickUp Point",  
    COUNT('Trip Details'[Trip ID])),  
    [PickUp Point], DESC  
)
```

```
RETURN CONCATENATEX(PickPoint, 'Location Table'[ Location ],",")
```



All Calculate Column used

1. Trip(Day/ Night) :

Trip(Day/ Night) =
VAR HourofDay = HOUR('Trip
Details'[Pickup_time])

2. Pickup_date

Pickup_date = DATE(YEAR('Trip
Details'[Pickup_time]),MONTH('Trip
Details'[Pickup_time]),DAY('Trip
Details'[Pickup_time]))

3. Pickup Hour

Pickup Hour = HOUR('Trip
Details'[Pickup_time])

4. Total Trip Distance Measure

Total Trip Distance Measure =
SUM('Trip
Details'[trip_distance_km])

Charts

Create a Measure Selector using a Disconnected Table with the following values:

- Total Bookings
- Total Booking Value
- Total Trip Distance

Then, use a measure to dynamically update the visualizations based on user selection.

By Payment Type (Card, Cash, Wallet, etc.)

By Trip Type (Day/Night)

Additional Enhancements:

- **Dynamic Title** – Update the chart title based on the selected measure.
- **Slicers** – Add filters for Date, City, and other interactive filters for deeper analysis.
- **Tooltips** – Show additional details like Average Booking Value or Trip Distance.

Vehicle Type Analysis – Grid View in Power BI

Create a grid table (matrix or table visual) to analyse key performance indicators like Total Bookings, Total Booking Value, Avg Booking Value, Total Trip Distance across different Vehicle Types in Uber trips.

Power BI Implementation:

- **Use a Table or Matrix Visual** to display Vehicle Type with the KPIs.
- **Apply Conditional Formatting** to highlight high and low values.
- **Enable Sorting & Filtering** for user interaction.

Total Bookings by Day

- Detecting trends and fluctuations in daily trip volumes.
- Identifying peak and off-peak booking days.
- Understanding the impact of external factors (holidays, events, weather) on ride demand.
- Supporting strategic planning for resource allocation and pricing adjustments.

Charts

Location Analysis

Understanding trip locations is crucial for optimizing ride distribution, demand forecasting, and operational efficiency. This analysis focuses on:

Most Frequent Pickup Point

- Identify the most common starting locations for trips.
- Helps in optimizing driver availability and dynamic pricing strategies.

Most Frequent Drop-off Point

- Find the most common drop-off locations.
- Requires activating an **inactive relationship** in Power BI between **Pickup Location and Drop-off Location** in the data model.

Farthest Trip

- Determine the longest trip based on distance travelled.
- Useful for analysing outlier trips, long-distance demand, and fare optimization.

Total Bookings by Location (Top 5)

- Identify the **top 5 locations** with the highest trip bookings.
- Helps in demand forecasting and optimizing driver availability in high-traffic areas.

Most Preferred Vehicle for Location Pickup

- Determine the most frequently booked **vehicle type** at each pickup location.
- Supports strategic vehicle distribution based on customer preferences and location demand.

DETAILS TAB

To provide in-depth insights and allow users to explore granular data, a Grid Tab will be created. This tab will enable drill-through functionality, allowing users to access detailed records based on selections made in other dashboards.

Features of the Grid Tab:

- Grid Table with Key Fields:
 - Displays essential trip details
- **Drill-Through Functionality:**
 - Users can right-click on a data point from other visuals (e.g., charts, heatmaps) and drill through to this Grid Tab.
 - Displays detailed records related to the selected data point.
- **Bookmark for Full Data View:**
 - A "View Full Data" bookmark to toggle between filtered drill-through data and the complete dataset.
 - Allows users to reset filters and see all records easily.