

Summary Report — *Earnings from Buses Analysis*

1. Dataset Overview

The dataset contains bus-earning information across multiple Indian cities from **2015–2018**, including:

- Average No. of daily trips
- Average No. of passengers per day
- Average trip length (km)
- Average cost per km (₹)
- Revenue per km (₹)
- City & Year

A total of **125 records** exist, covering 4 years and 30+ cities.

2. Data Cleaning Performed

✓ Removed invalid rows

- Records with missing passenger count, trip length, or revenue were cleaned.
- Converted incorrectly formatted numeric columns (e.g., strings with “.00”, commas).

✓ Standardized formats

- Year values standardized to integer.
- All financial values converted to numeric type.

✓ Created proper Date/Year structures

Unique year dimension created (YearUnique) for stable relationships.

✓ Checked and removed duplicates

- Ensured unique City-Year combinations.
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3. Data Transformations Performed

A. Calculated Columns (Earnings from Buses)

Column	Purpose
Cost Per Day	$\text{Trips} \times \text{TripLength} \times \text{Cost/km}$

Revenue Per Day	$\text{Trips} \times \text{TripLength} \times \text{Revenue/km}$
Duration (Years)	$\text{EndYear} - \text{StartYear}$
Total Distance	$\text{Trips} \times \text{TripLength}$
Year Range	$\text{StartYear} - \text{EndYear}$
Passenger Growth	Flags growth: Increase/Decrease

B. DAX Measures Created

Measure	Meaning
Total Passengers	SUM of passengers
Total Revenue	SUM of Revenue/day
Total Trips	SUM of trips
Total Cost	SUM of Cost/day
Total Distance	SUM of Distance
Total Profit	Revenue – Cost
YoY Passengers %	Growth %
YoY Passengers Change	Difference YoY

4. Data Modeling

A **Star Schema** model was created:

✓ Fact Table

Earnings from Buses

✓ Dimensions

- Location (City & City ID)
- YearUnique (distinct Year)

✓ Relationships

Location[City ID] → Earnings[City ID]

DimYearUnique[Year] → Earnings[Start Year]

This ensures clean filtering across visuals.

5. Visuals Used in Dashboard

Dashboard 1 — City Performance

1. **KPI Cards:**
Total Passengers, Total Revenue, Total Trips, Total Cost, Avg Trip Length, Total Distance, Total Profit.
2. **Column + Line Chart:**
Year-wise Total Passengers & Revenue.
3. **Horizontal Bar:**
City-wise Total Passengers.
4. **Doughnut Chart:**
Share of Revenue by City.
5. **Map Visual:**
Passenger Trend Classification by City.
6. **Clustered Bar:**
Total Trips & Total Distance (City × Year).
7. **Column Chart:**
Passenger Volume vs Growth Flag.

Dashboard 2 — Revenue & Insights

1. **Gauge / Donut:** Total Revenue.
 2. **Area Chart:** Revenue by Year × Passenger Growth Flag.
 3. **Waterfall Chart:** Total Distance by Growth Class.
 4. **Bar Chart:** Profitability Status (Profitable vs Not).
 5. **Smart Narrative:** Automatically generated insights.
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6. Insights (Summary)

✓ City Revenue Distribution

- *Raipur* contributed the highest revenue (~65% share).

- *Belagavi & Bareilly* contribute moderate revenue.

✓ Passenger Trends

- Passenger count peaked in **2017**, then sharply dropped by **2018**.

✓ Profitability

- Profitable cities travelled significantly higher distances.
- Passenger Growth Flag strongly correlates with profitability.

✓ Revenue vs Cost

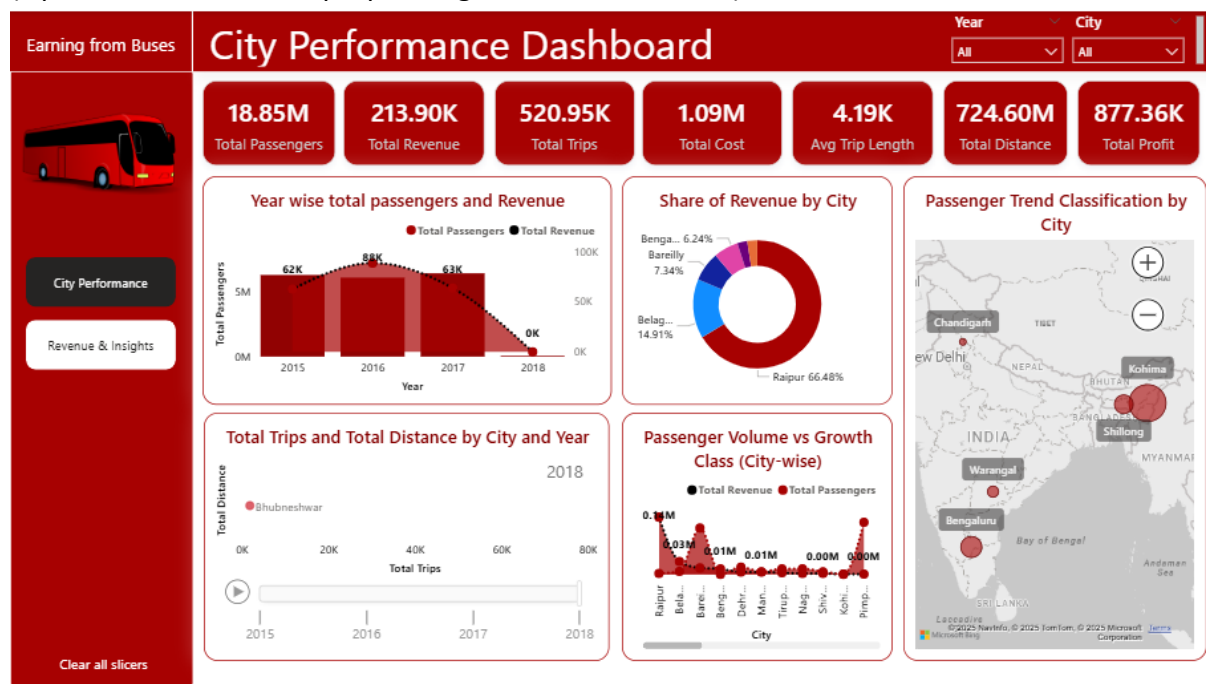
- Some cities have **high cost per km but low revenue**, indicating inefficiencies.

7. Final Output

A complete Power BI solution consisting of **two optimized dashboards**:

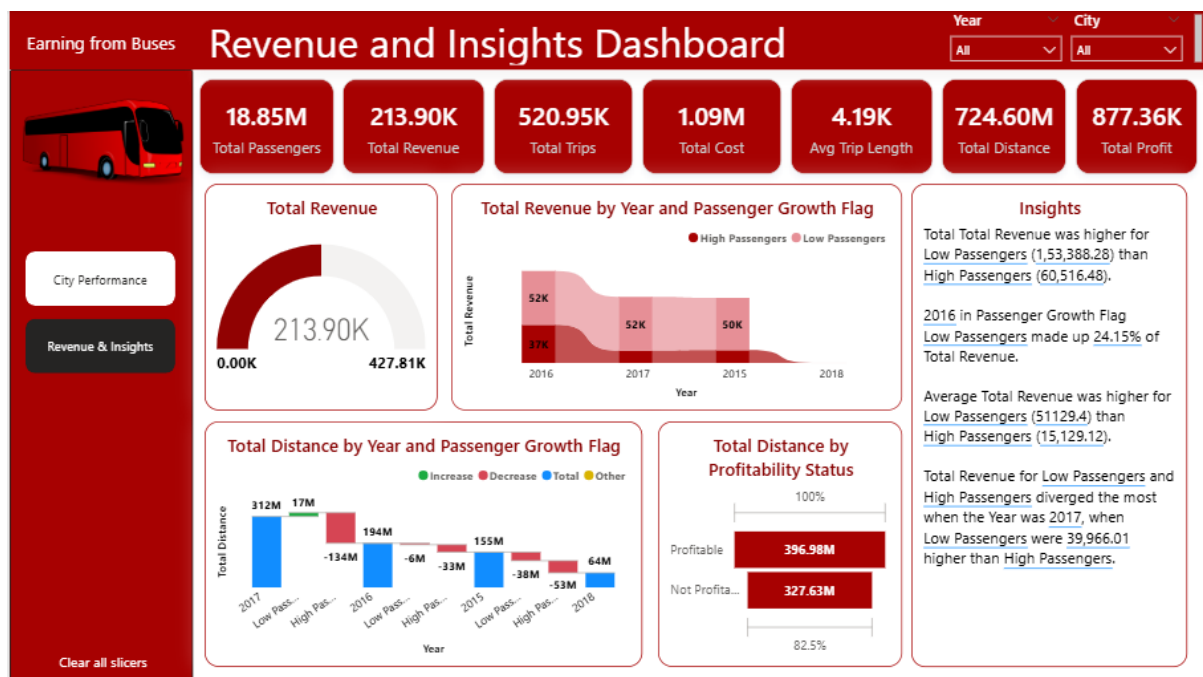
★ Dashboard 1 → City Performance

(Operational metrics: trips, passengers, distance, trends)



★ Dashboard 2 → Revenue & Insights

(Financial metrics: revenue, cost, profit, profitability groups)



Executive Summary

- The analysis reveals strong passenger volumes concentrated in major cities, with Raipur leading in both revenue and trip counts.
- Year-wise trends show steady passenger movement from 2015–2017, followed by a decline in 2018.
- Profitability varies by city, with several locations showing high revenue despite lower trip counts.
- Cost-per-km vs revenue-per-km analysis highlights significant efficiency differences across cities.
- Overall, the dashboard provides clear insights into passenger flow, revenue distribution, and operational performance for strategic decision-making.