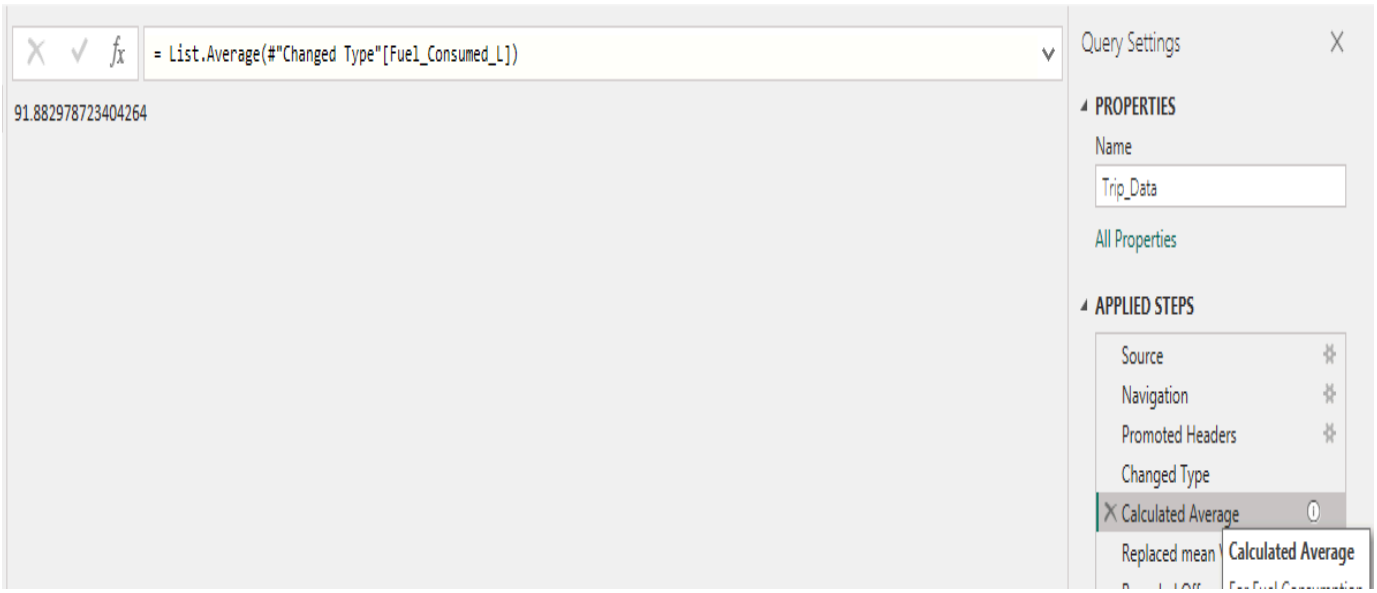
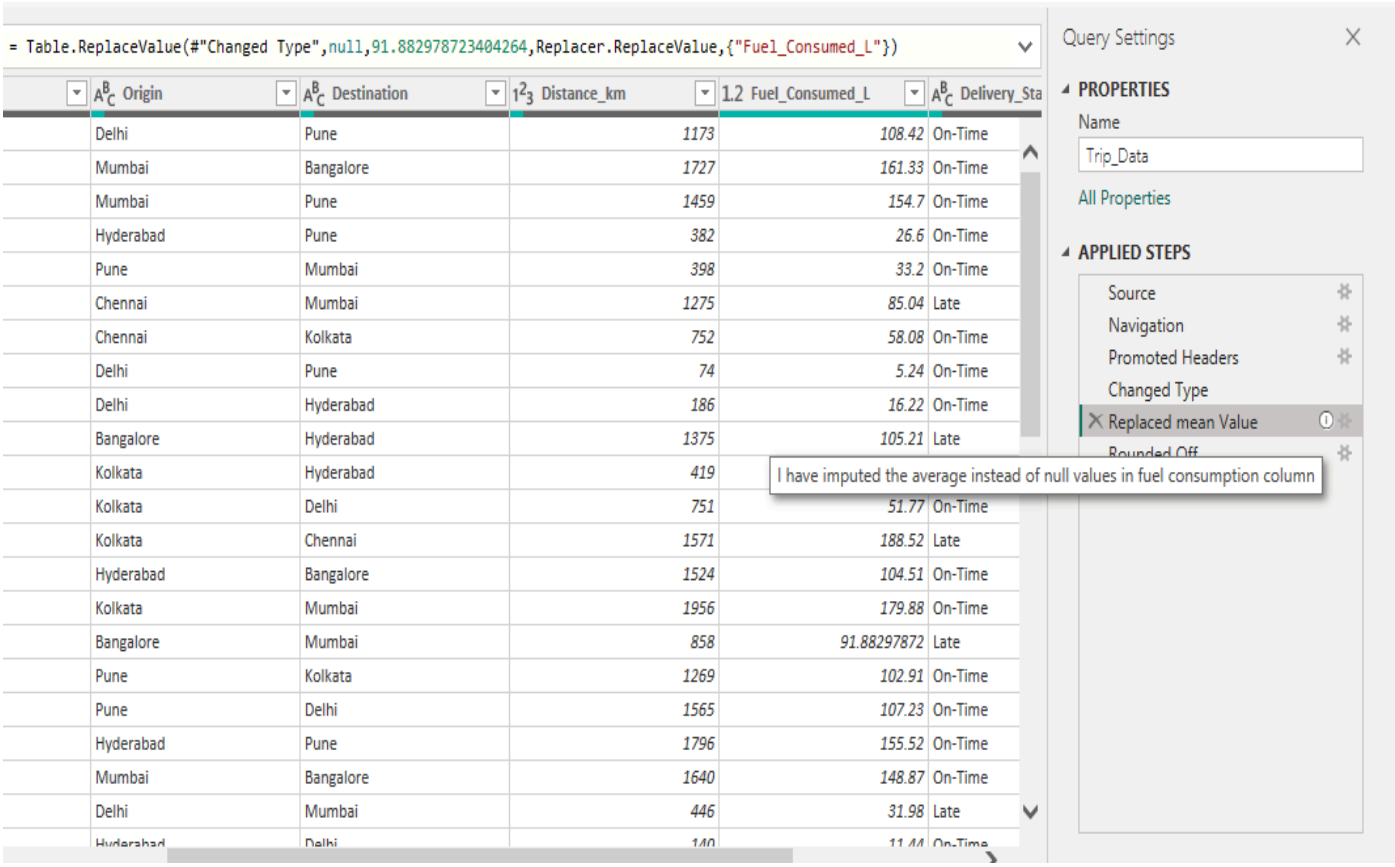
AI-Powered Fleet Performance & Delivery Efficiency Dashboard -Power BI

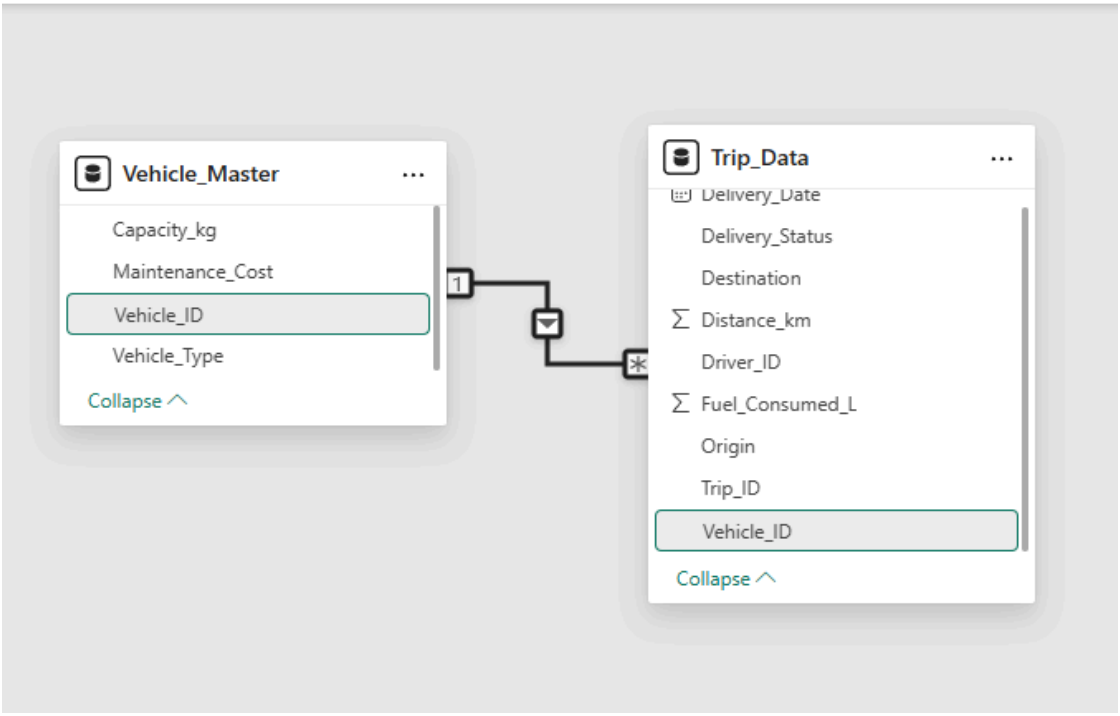
1. Data Cleaning & Modeling:

1. Fix missing fuel consumption values (use mean imputation).





2. Create a relationship using Vehicle_ID between Trip_Data and the Vehicle Master table.

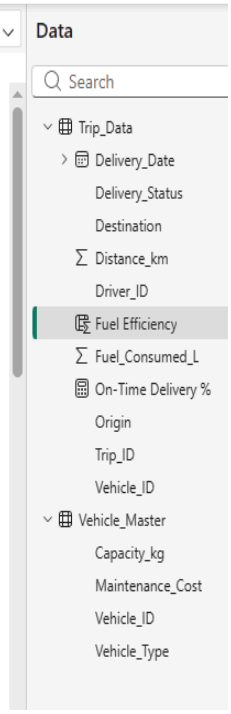


2. DAX Measures:

1. Fuel Efficiency = Distance / Fuel Consumed (`Fuel Efficiency = DIVIDE(Trip_Data[Distance_km],Trip_Data[Fuel_Consumed_L])`

```
1 Fuel Efficiency = DIVIDE(Trip_Data[Distance_km],Trip_Data[Fuel_Consumed_L])
```

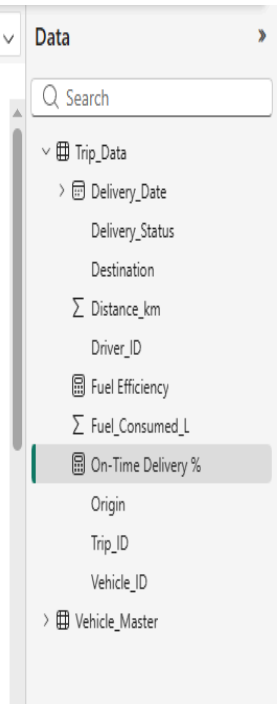
ID	Vehicle_ID	Driver_ID	Origin	Destination	Distance_km	Fuel_Consumed_L	Delivery_Status	Delivery_Date	Fuel Efficiency
	V04	D01	Delhi	Pune	1173	108.42	On-Time	27 January 2023	1081.90%
	V06	D08	Mumbai	Bangalore	1727	161.33	On-Time	21 February 2023	1070.48%
	V06	D08	Mumbai	Pune	1459	154.7	On-Time	17 February 2023	943.12%
	V04	D09	Hyderabad	Pune	382	26.6	On-Time	18 February 2023	1436.09%
	V06	D08	Pune	Mumbai	398	33.2	On-Time	15 February 2023	1198.80%
	V06	D07	Chennai	Mumbai	1275	85.04	Late	25 February 2023	1499.29%
	V07	D03	Chennai	Kolkata	752	58.08	On-Time	19 January 2023	1294.77%
	V02	D10	Delhi	Pune	74	5.24	On-Time	01 January 2023	1412.21%
	V02	D07	Delhi	Hyderabad	186	16.22	On-Time	23 February 2023	1146.73%
	V02	D02	Bangalore	Hyderabad	1375	105.21	Late	02 February 2023	1306.91%
	V06	D03	Kolkata	Hyderabad	419	31.17	On-Time	21 January 2023	1344.24%
	V06	D01	Kolkata	Delhi	751	51.77	On-Time	15 February 2023	1450.65%
	V05	D04	Kolkata	Chennai	1571	188.52	Late	02 February 2023	833.33%
	V05	D05	Hyderabad	Bangalore	1524	104.51	On-Time	16 February 2023	1458.23%
	V05	D06	Kolkata	Mumbai	1956	179.88	On-Time	21 January 2023	1087.39%
	V05	D06	Bangalore	Mumbai	858	91.88	Late	18 January 2023	933.83%
	V07	D07	Pune	Kolkata	1269	102.91	On-Time	16 January 2023	1233.12%
	V07	D10	Pune	Delhi	1565	107.23	On-Time	12 February 2023	1459.48%
	V07	D10	Hyderabad	Pune	1796	155.52	On-Time	28 February 2023	1154.84%
	V04	D02	Mumbai	Bangalore	1640	148.87	On-Time	06 January 2023	1101.63%
	V07	D07	Delhi	Mumbai	446	31.98	Late	11 January 2023	1394.62%
	V07	D09	Hyderabad	Delhi	140	11.44	On-Time	07 February 2023	1223.78%



2. On-Time Delivery % = On-Time Trips / Total Trips: `On-Time Delivery % = DIVIDE(CALCULATE(COUNTA(Trip_Data[Delivery_Status]),Trip_Data[Delivery_Status]="On-Time"),COUNTA(Trip_Data[Delivery_Status]))`

```
1 On-Time Delivery % = CALCULATE(COUNTA(Trip_Data[Delivery_Status]),Trip_Data[Delivery_Status]="On-Time")/COUNTA(Trip_Data[Delivery_Status])
```

Vehicle_ID	Driver_ID	Origin	Destination	Distance_km	Fuel_Consumed_L	Delivery_Status	Delivery_Date
V04	D01	Delhi	Pune	1173	108.42	On-Time	27 January 2023
V06	D08	Mumbai	Bangalore	1727	161.33	On-Time	21 February 2023
V06	D08	Mumbai	Pune	1459	154.7	On-Time	17 February 2023
V04	D09	Hyderabad	Pune	382	26.6	On-Time	18 February 2023
V06	D08	Pune	Mumbai	398	33.2	On-Time	15 February 2023
V06	D07	Chennai	Mumbai	1275	85.04	Late	25 February 2023
V07	D03	Chennai	Kolkata	752	58.08	On-Time	19 January 2023
V02	D10	Delhi	Pune	74	5.24	On-Time	01 January 2023
V02	D07	Delhi	Hyderabad	186	16.22	On-Time	23 February 2023
V02	D02	Bangalore	Hyderabad	1375	105.21	Late	02 February 2023
V06	D03	Kolkata	Hyderabad	419	31.17	On-Time	21 January 2023
V06	D01	Kolkata	Delhi	751	51.77	On-Time	15 February 2023
V05	D04	Kolkata	Chennai	1571	188.52	Late	02 February 2023
V05	D05	Hyderabad	Bangalore	1524	104.51	On-Time	16 February 2023
V05	D06	Kolkata	Mumbai	1956	179.88	On-Time	21 January 2023
V05	D06	Bangalore	Mumbai	858	91.88	Late	18 January 2023
V07	D07	Pune	Kolkata	1269	102.91	On-Time	16 January 2023
V07	D10	Pune	Delhi	1565	107.23	On-Time	12 February 2023



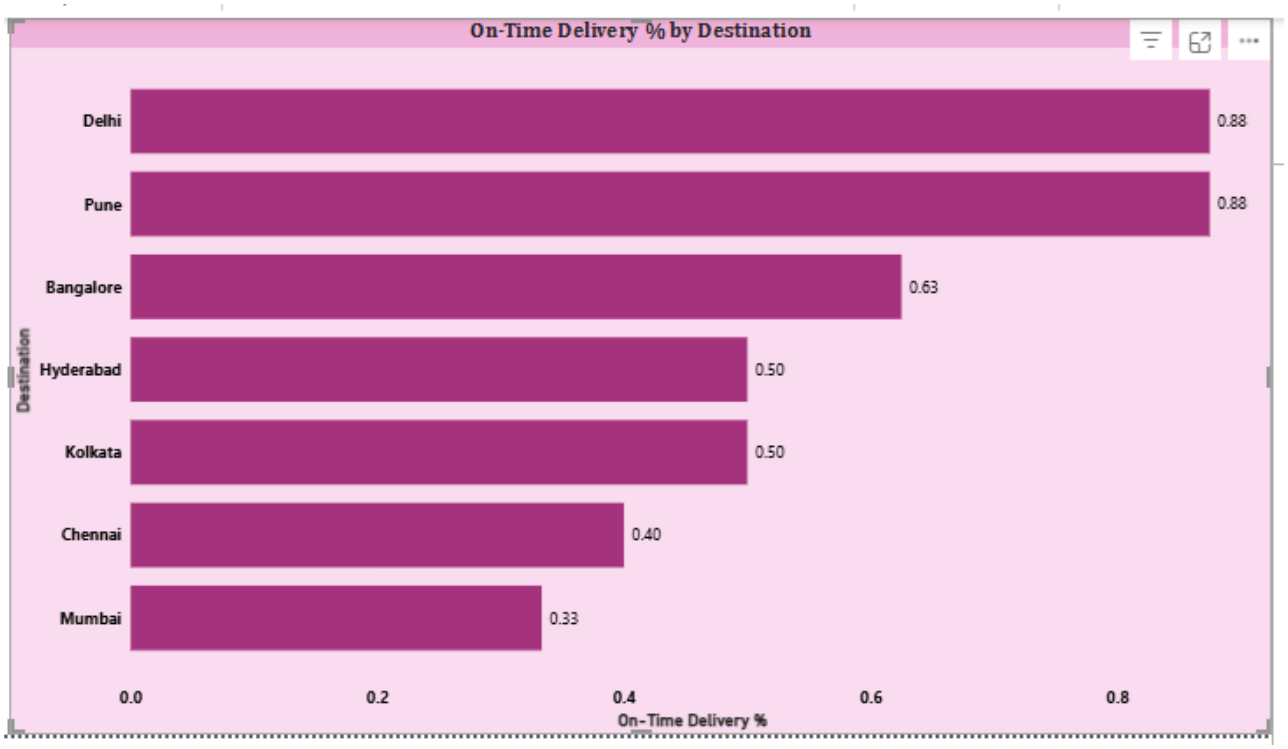
3. Cost per km = (fuel cost + Maintenance Cost) / Distance:`Cost Per Km = DIVIDE((Trip_Data[Fuel_Consumed_L]*100)+(RELATED(Vehicle_Master[Maintenance_Cost])),Trip_Data[Distance_km])`

```
1 Cost Per Km = DIVIDE((Trip_Data[Fuel_Consumed_L]*100)+(RELATED(Vehicle_Master[Maintenance_Cost])),Trip_Data[Distance_km])
```

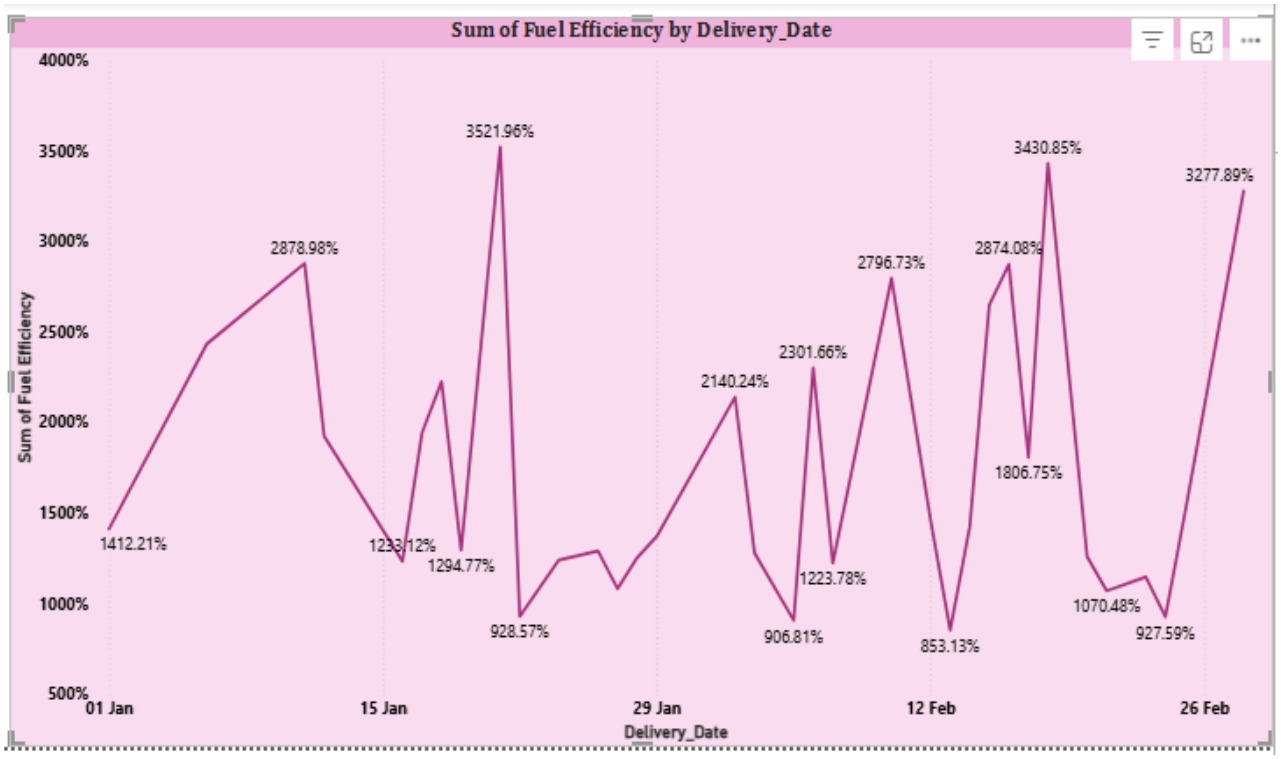
Vehicle_ID	Driver_ID	Origin	Destination	Distance_km	Fuel_Consumed_L	Delivery_Status	Delivery_Date	Fuel Efficiency	Cost Per Km
V04	D01	Delhi	Pune	1173	108.42	On-Time	27 January 2023	1081.90%	$16.94
V06	D08	Mumbai	Bangalore	1727	161.33	On-Time	21 February 2023	1070.48%	$12.77
V06	D08	Mumbai	Pune	1459	154.7	On-Time	17 February 2023	943.12%	$14.66
V04	D09	Hyderabad	Pune	382	26.6	On-Time	18 February 2023	1436.09%	$30.61
V06	D08	Pune	Mumbai	398	33.2	On-Time	15 February 2023	1198.80%	$23.20
V06	D07	Chennai	Mumbai	1275	85.04	Late	25 February 2023	1499.29%	$11.31
V07	D03	Chennai	Kolkata	752	58.08	On-Time	19 January 2023	1294.77%	$24.79
V02	D10	Delhi	Pune	74	5.24	On-Time	01 January 2023	1412.21%	$98.65
V02	D07	Delhi	Hyderabad	186	16.22	On-Time	23 February 2023	1146.73%	$45.15
V02	D02	Bangalore	Hyderabad	1375	105.21	Late	02 February 2023	1306.91%	$12.58
V06	D03	Kolkata	Hyderabad	419	31.17	On-Time	21 January 2023	1344.24%	$21.55
V06	D01	Kolkata	Delhi	751	51.77	On-Time	15 February 2023	1450.65%	$14.77
V05	D04	Kolkata	Chennai	1571	188.52	Late	02 February 2023	833.33%	$23.30
V05	D05	Hyderabad	Bangalore	1524	104.51	On-Time	16 February 2023	1458.23%	$18.51
V05	D06	Kolkata	Mumbai	1956	179.88	On-Time	21 January 2023	1087.39%	$18.27
V05	D06	Bangalore	Mumbai	858	91.88	Late	18 January 2023	933.83%	$31.40
V07	D07	Pune	Kolkata	1269	102.91	On-Time	16 January 2023	1233.12%	$18.23
V07	D10	Pune	Delhi	1565	107.23	On-Time	12 February 2023	1459.48%	$15.05
V07	D10	Hyderabad	Pune	1796	155.52	On-Time	28 February 2023	1154.84%	$15.81
V04	D02	Mumbai	Bangalore	1640	148.87	On-Time	06 January 2023	1101.63%	$14.59
V07	D07	Delhi	Mumbai	446	31.98	Late	11 January 2023	1394.62%	$35.95
V07	D09	Hyderabad	Delhi	140	11.44	On-Time	07 February 2023	1223.78%	$99.86

3. Visualization:

Bar chart: On-Time Delivery % by Destination.



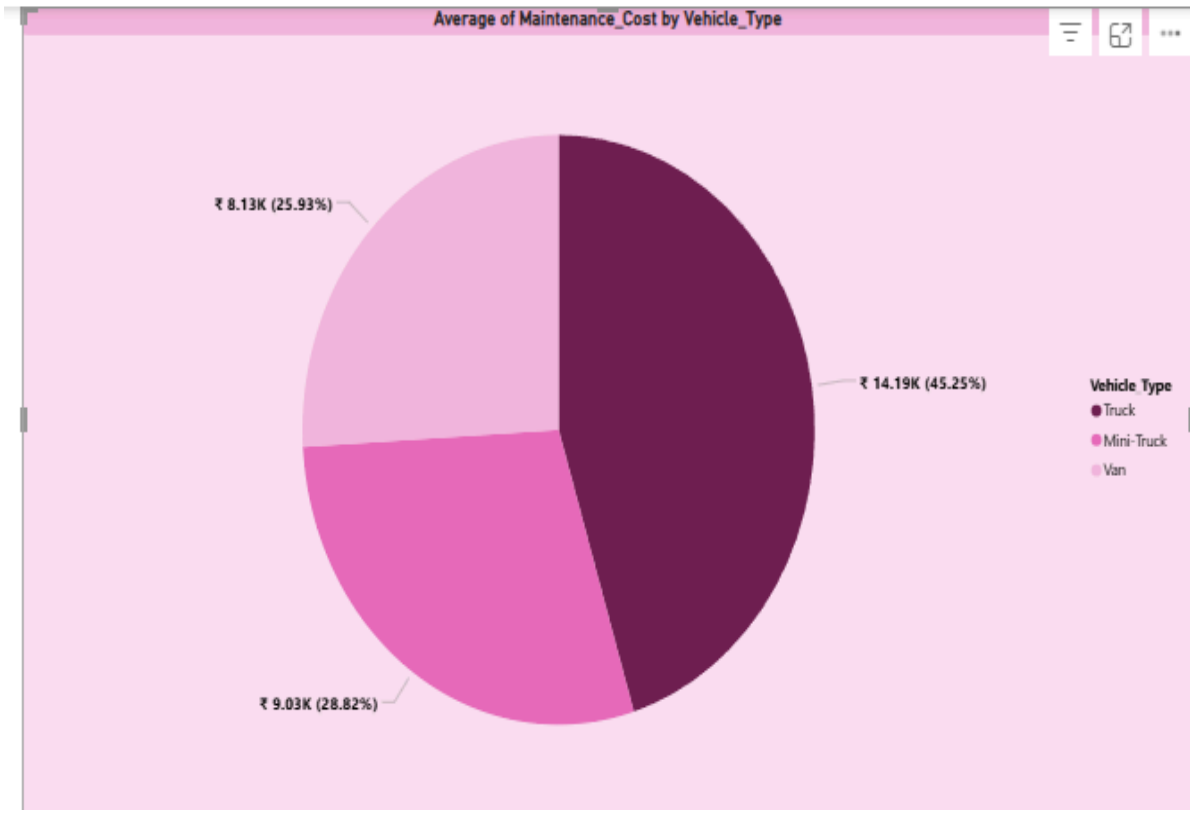
Line chart: Fuel efficiency trend by delivery date.



Cards visualization: 1. Avg. Delivery Time 2. Average cost per km

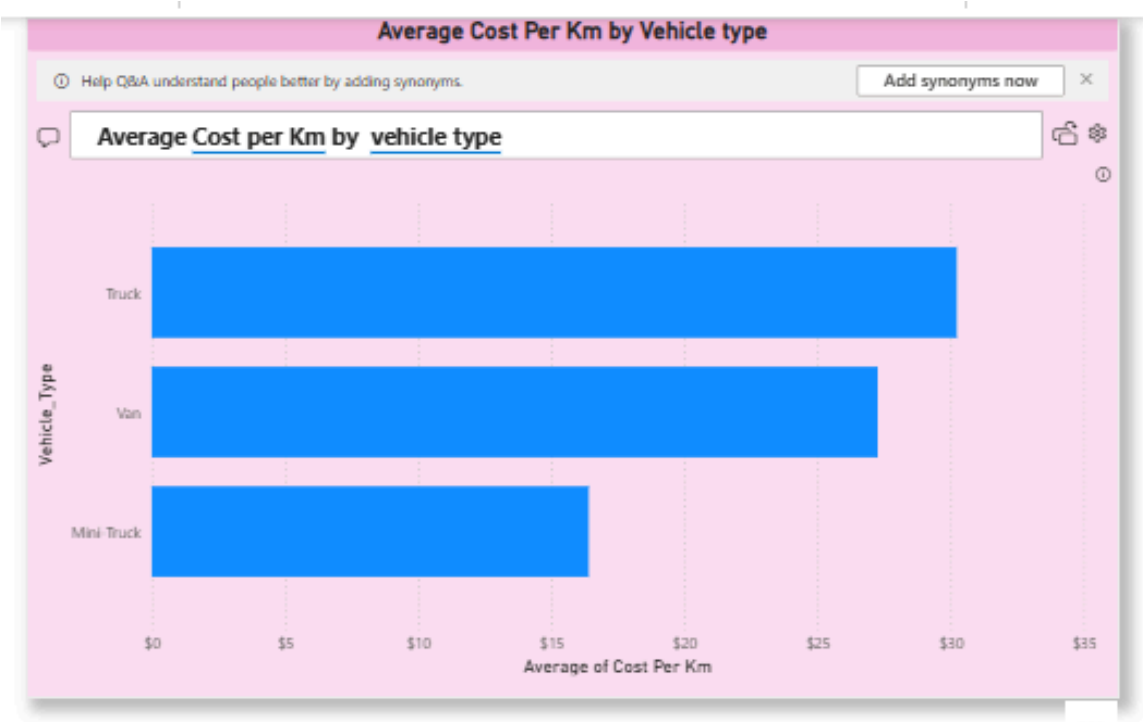
```
Average Delivery Time =
AVERAGEX('Trip_Data','Trip_Data'[Delivery_Date]-CALCULATE(MAX('Trip_Data'[Delivery_Date]),FILTER('Trip_Data','Trip_Data'[Delivery_Date]<
EARLIER('Trip_Data'[Delivery_Date]))))
```

Pie chart: vehicle type vs Average maintenance cost

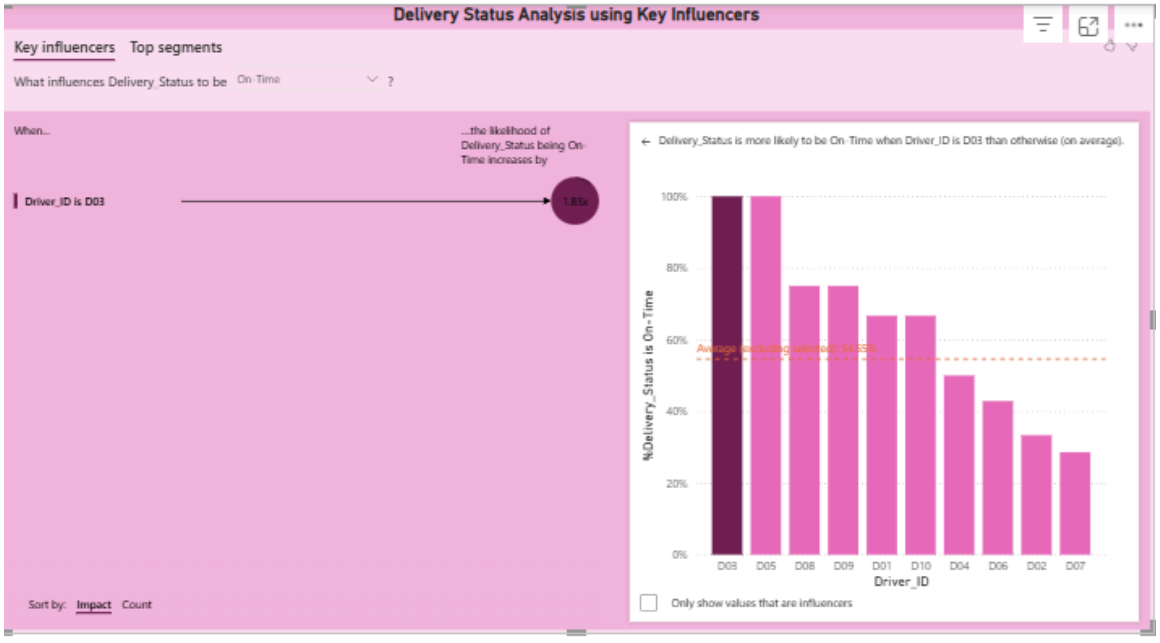


4. AI-Powered Visuals:

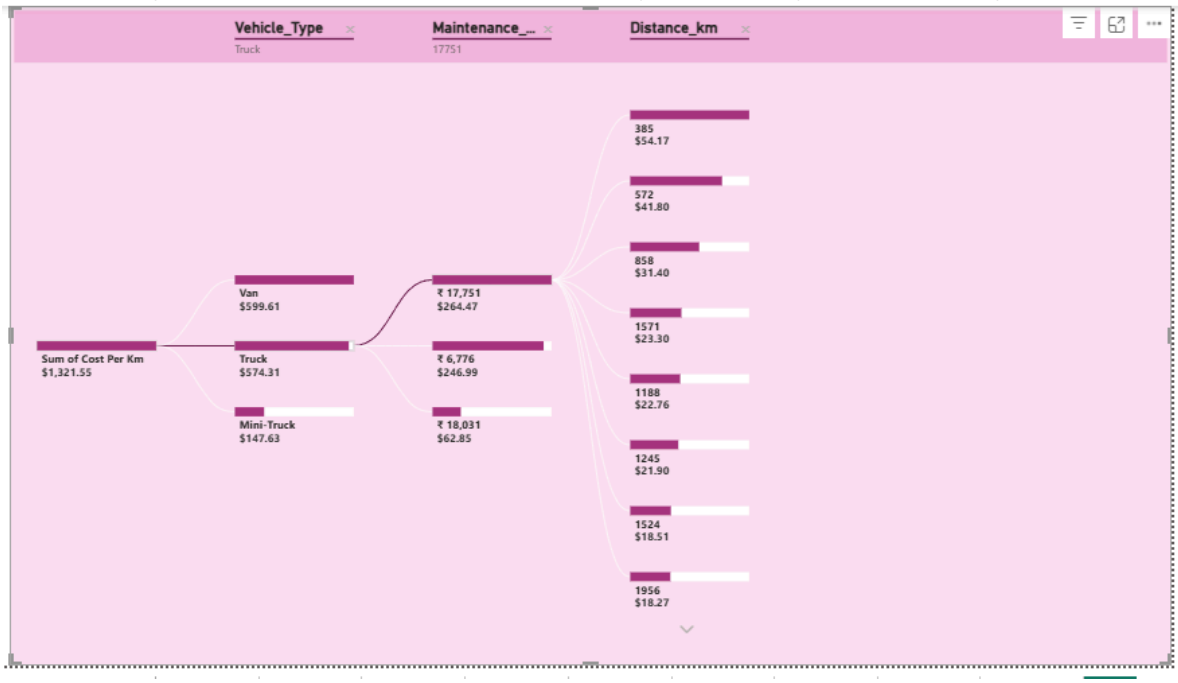
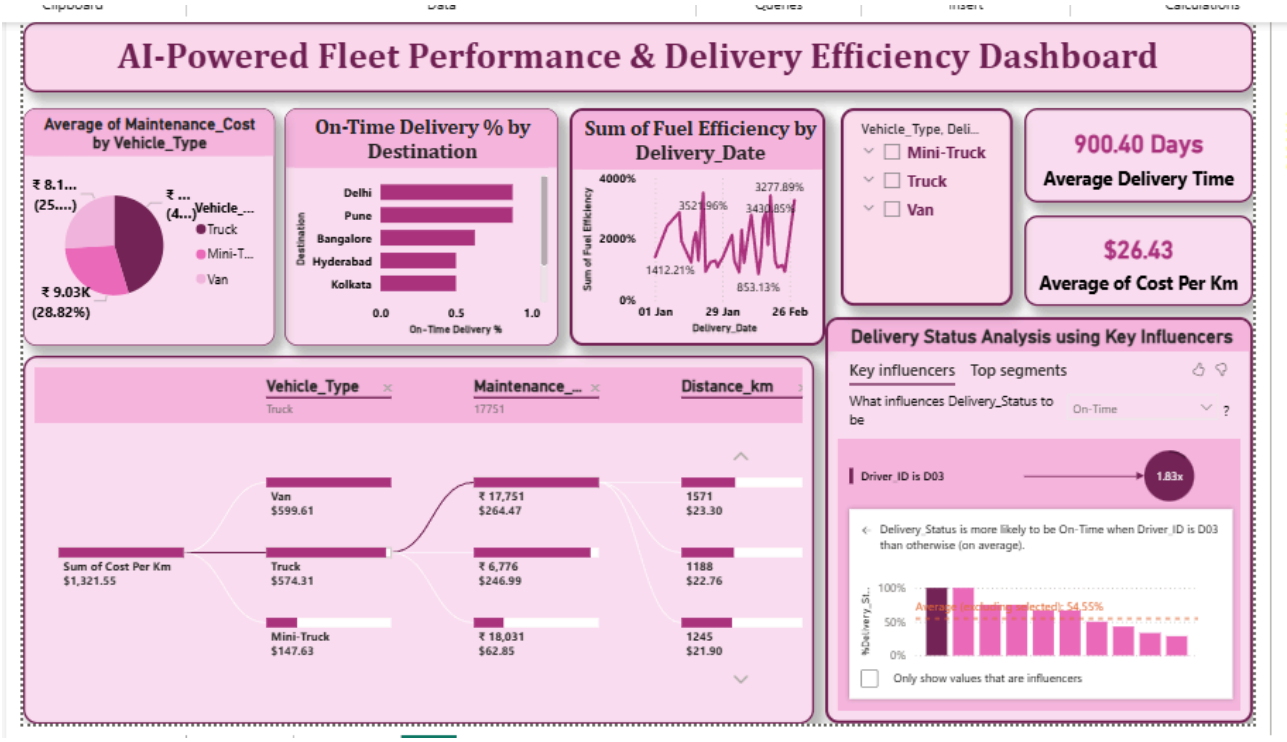
1.Q&A Visual: Add Q&A visual . Prompt: “Average Cost per km by vehicle type?”



2.Key Influencers Visual: Add Delivery Status in the Analyze and explain by -distance in km,vehicle_type, Driver_ID



3.Decomposition Tree (AI Visual):. Analyze Cost per km . explained by Vehicle Type, Maintenance_cost, and Distance_km.



Expected Output: A transport operations dashboard to optimize routes and fleet usage.