

Submitted BY

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**Analyzing Transport Data with Power BI**

# About Data

The provided dataset consists of transportation-related information for various trips. Here's a breakdown of the columns along with their data types and descriptions:

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| Column | Description | Data Type |
| TripID | Unique identification for each trip. | Numeric/Integer |
| ShipperID | Identifier for the shipper or transporter associated with the trip. | Numeric/Integer |
| CategoryID | Identifier for the category of the trip. | Numeric/Integer |
| Customer | Name of the customer associated with the trip. | Text/String |
| ShipDate | Date when the trip started or when the shipment was dispatched. | Date |
| OriginCity | City where the trip originated from. | Text/String |
| OriginState | State where the trip originated from. | Text/String |
| ShipDays | Number of days taken for shipping. | Numeric/Integer |
| DestinationCity | City where the trip is destined to. | Text/String |
| DestinationState | State where the trip is destined to. | Text/String |
| DeliveryDate | Date when the trip was delivered or when the shipment arrived at its destination. | Date |
| TotalMiles | Total distance travelled for the trip. | Numeric/Integer |
| LoadedMiles | Distance travelled with a loaded shipment. | Numeric/Integer |
| ShippingCost | Cost incurred for shipping. | Numeric/Decimal |
| Revenue | Revenue generated from the trip. | Numeric/Decimal |
| Capacity | Capacity of the transportation vehicle used for the trip. | Numeric/Decimal |
| TripType | Type of trip (e.g., Domestic, International) | Text/String |
| CheckPoints | Number of checkpoints or stops along the trip route. | Numeric/Integer |

This dataset contains information about various trips, including details such as trip identifiers, dates, locations, distances travelled, costs, revenues, and trip characteristics. It can be used for analysing transportation performance, cost-effectiveness, and customer satisfaction.

Problem in the date:

Data error observed where the ShippingDate is recorded after the DeliveryDate for trips with a particular DeliveryDate of 21/03/2016. This inconsistency indicates potential inaccuracies in recording or processing shipment timelines, requiring further investigation and data validation measures.

**Business Problem:**

Improving Transportation Efficiency and Cost-Effectiveness

**Objective:**

Develop a business dashboard to track key performance indicators (KPIs) related to transportation efficiency, cost-effectiveness, and customer satisfaction. The dashboard should provide actionable insights to help decision-makers identify areas for improvement, allocate resources efficiently, and make data-driven decisions to optimize transportation operations.

**Steps taken in analysis:**Following are the steps taken in preparing the dashboard:  
**1. Understanding the Data:**

* Review the provided dataset to understand its structure, variables, and business context.
* Identified key metrics and KPIs relevant to the business problem or objective.
* Determined any data preprocessing or cleaning requirements, such as handling missing values or outliers.

**2. Created Measures or DAX (Data Analysis Expressions):**

* Defined calculated columns or measures using DAX to calculate key performance indicators (KPIs) and metrics.
* Utilized DAX functions to aggregate, filter, or manipulate data as needed for analysis.
* Ensured that measures accurately reflect the desired calculations and align with business requirements.

**3. Developed Visualizations:**

* Select appropriate visualizations (e.g., charts, graphs, tables) based on the nature of the data and the insights to be communicated.
* Created visualizations using Power BI or other dashboarding tools, ensuring they are visually appealing, intuitive, and effectively convey information.
* Customized visualizations with appropriate labels, titles, colours, and formatting to enhance clarity and readability.

**4. Analysis and Findings:**

* Analysed the dashboard visualizations to identify trends, patterns, outliers, and insights.
* Compared KPIs and metrics across different dimensions (e.g., time periods, regions, product categories) to uncover actionable insights.
* Interpret findings in the context of the business problem or objective, identifying areas for improvement, optimization, or strategic decision-making.
* Documented key findings, recommendations, and action items based on the analysis.