Transport Data Analysis

DOCUMENTATION OF EACH STEPS

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Steps for Creating the Dashboard-

Importing the Data:

I started by opening Power BI Desktop and imported the Excel file.

Cleaning the Data:

I used the Power Query Editor to clean the data: set data types, handle missing values, and remove duplicates.

Creating Key Measures:

In the Modeling tab, I created DAX measures like Total Miles, Loaded Miles, Shipping Cost, and Revenue to summarize key metrics.

Building Visuals:

KPIs: I created card visuals for **Total Miles, Revenue**, and **Average Revenue per Mile.**

Time Series Analysis: used a line chart to show trends in **Loaded Miles** and **Total Miles over time**.

Geographic Analysis: Then added a map to visualize revenues by origin and destination cities.

Revenue & Cost Trends: Also used bar and pie charts to show revenue and shipping cost by category.

Adding Filters and Slicers:

I added slicers for ShipDate and DeliveryDate to allow dynamic filtering of the data.

Final Touches:

I formatted the dashboard for a clean, professional look and published it via Power BI service.

Key Insights from the Dashboard

Revenue Performance:

Total revenue is $9M, with an average revenue per mile of $6.97, indicating strong financial performance.

Operational Trends:

Peaks in Loaded Miles and Total Miles on specific dates suggest high demand periods.

The utilization rate shows how efficiently the fleet is being used.

Geographic Insights:

Major cities like Chicago are key revenue generators, essential for strategic planning.

Category Analysis:

Categories 1 and 2 are top revenue contributors, guiding focus for sales and marketing efforts.

Cost Efficiency:

Metrics like average cost per mile and cost per trip highlight operational costs, helping identify areas for improvement.

Key Insights from Transportation Data Analysis

1. **Revenue Performance:**
    - **Total Revenue:** The analysis reveals a total revenue of $9 million, indicating robust financial performance.
    - **Average Revenue per Mile:** The average revenue per mile is calculated at $6.97, suggesting efficient revenue generation per distance unit.
2. **Operational Efficiency:**
    - **Total Miles and Loaded Miles:** The dataset shows a total of 1 million miles traveled, with a significant proportion being loaded miles, indicating high utilization rates.
    - **Utilization Rate:** A high utilization rate is observed, reflecting effective use of transportation resources.
3. **Geographic Insights:**
    - **Key Revenue-Generating Cities:** Major cities such as Chicago are identified as significant revenue contributors, which is critical for strategic planning and resource allocation.
    - **Geographic Distribution:** The map visualization highlights the origin and destination cities, providing insights into regional performance and demand patterns.
4. **Category Analysis:**
    - **Top Revenue Categories:** Categories 1 and 2 emerge as the top revenue contributors. This insight directs focus towards these categories for targeted marketing and resource investment.
    - **Revenue Distribution:** A pie chart shows the revenue distribution across different categories, helping to identify and prioritize high-performing segments.
5. **Cost Analysis:**
    - **Shipping Costs:** The average cost per mile is analyzed to be [Value], helping in understanding the cost efficiency.
    - **Cost Trends:** Over time, shipping costs are monitored to identify any fluctuations or areas for cost optimization.
6. **Time Series Analysis:**
    - **Demand Peaks:** The line chart reveals peaks in Loaded Miles and Total Miles on specific dates, indicating high-demand periods that require strategic planning and resource allocation.
    - **Trend Analysis:** Time series analysis helps in forecasting future trends based on historical data, aiding in better decision-making.
7. **Actionable Insights:**
    - **Focus on High-Revenue Areas:** Concentrating efforts on high-revenue categories and key cities can significantly enhance overall performance.

- **Optimize Routes:** Improving route efficiency based on utilization rates can reduce costs and increase profitability.
- **Monitor Cost Metrics:** Regular monitoring of cost metrics can help in identifying areas for operational improvement and cost savings.

Recommendations-

•We can Prioritize investment and marketing efforts in high-revenue categories and major cities like Chicago.

•If we Optimize transportation routes and schedules during high-demand periods to improve efficiency and reduce costs. Also, if we Implement regular reviews of shipping costs to identify trends and opportunities for cost reduction.