Supply Chain Management System Project

Project Overview

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Goal

Develop a system to analyze a global supply chain on a real-time basis and provide visibility into supplier and order performance, cost efficiency, and distribution patterns.

Data Source and Scope

- Total Orders: 47
- Raw Materials: 13
- Suppliers: 10
- Regions Covered: East Asia, Europe, Africa, Americas

*Included Data:**

- Order History
- Supplier Details
- Inventory Levels

Transportation and Pricing Information

Tools: Power BI, DAX, Excel, SQL

Problem

- Organizations lack real-time visibility into global supply chain operations, impacting cost control, supplier performance tracking, and distribution efficiency. This project addresses these gaps using Power BI to deliver interactive insights into orders, materials, suppliers, and logistics. The system is designed for supply chain managers & procurement teams.

Methodology

- Data cleaned in Excel, queried using SQL

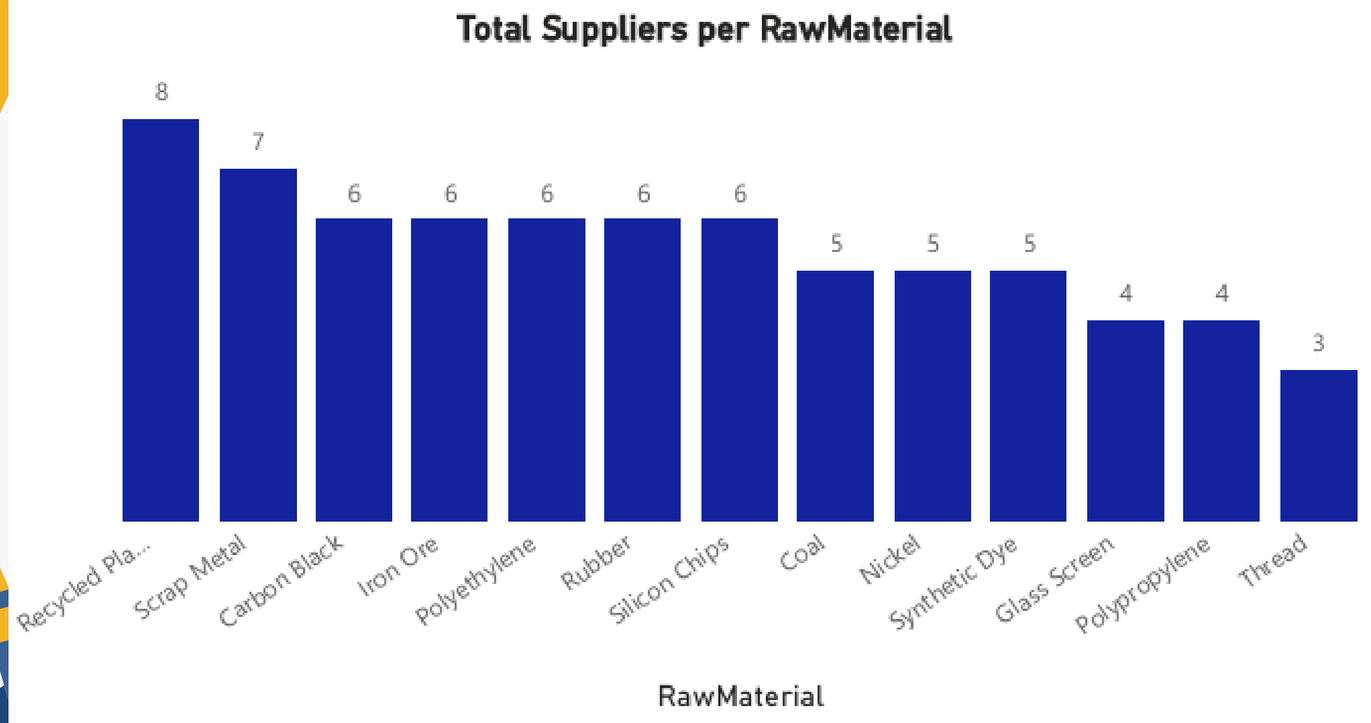
Created views in MySQL to:

1. Track lead times by supplier
2. Identify reorder triggers
3. Calculate average unit cost per region etc

- Created measures in DAX
- Build an interactive dashboard in Power BI

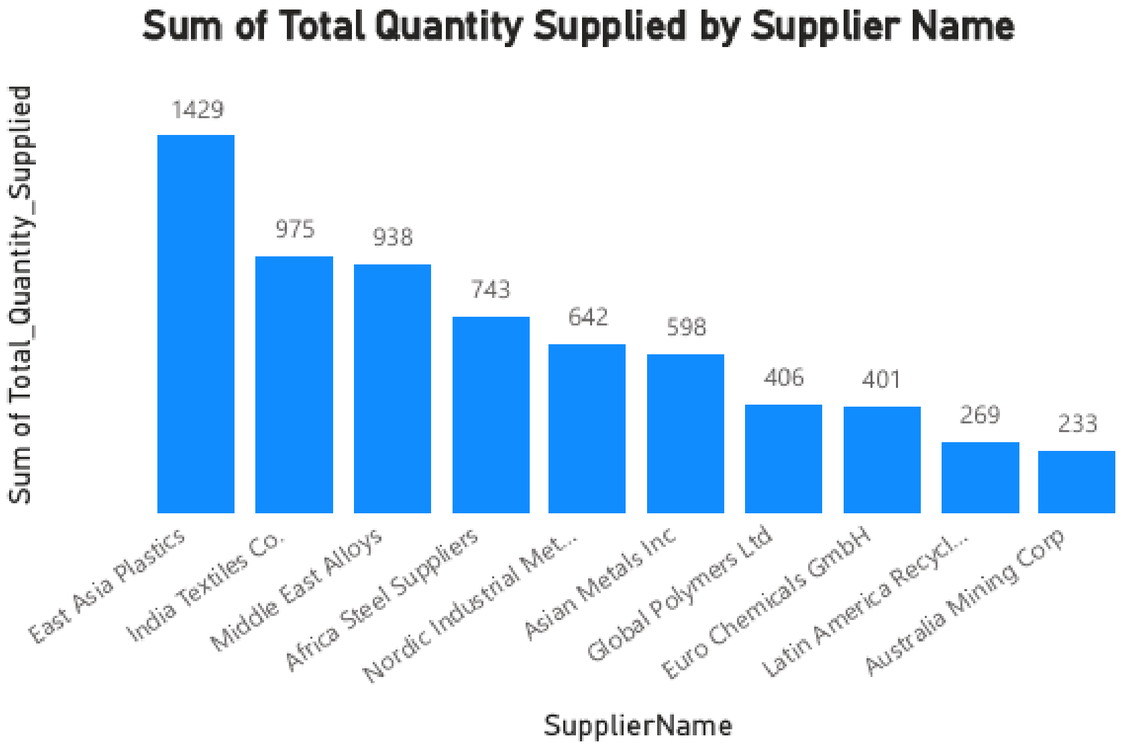
Applied filters by suppliers, orders, raw materials, transport mode, and regions.

Results



raw_material	trigger_status	Sum_unit_price
Carbon Black	Trigger	151.07
Coal	Trigger	19.87
Glass Screen	Trigger	34.86
Iron Ore	Trigger	71.43
Nickel	Trigger	33.69
Polyethylene	Trigger	129.62
Polypropylene	Trigger	29.70
Recycled Plastic	Trigger	149.71
Scrap Metal	Trigger	19.81
Silicon Chips	Trigger	68.07
Thread	Trigger	7.10
Total		**714.93**

Results



Total Suppliers per RawMaterial

Key Insights

Power BI Dashboard Insights

- **Top Suppliers:**

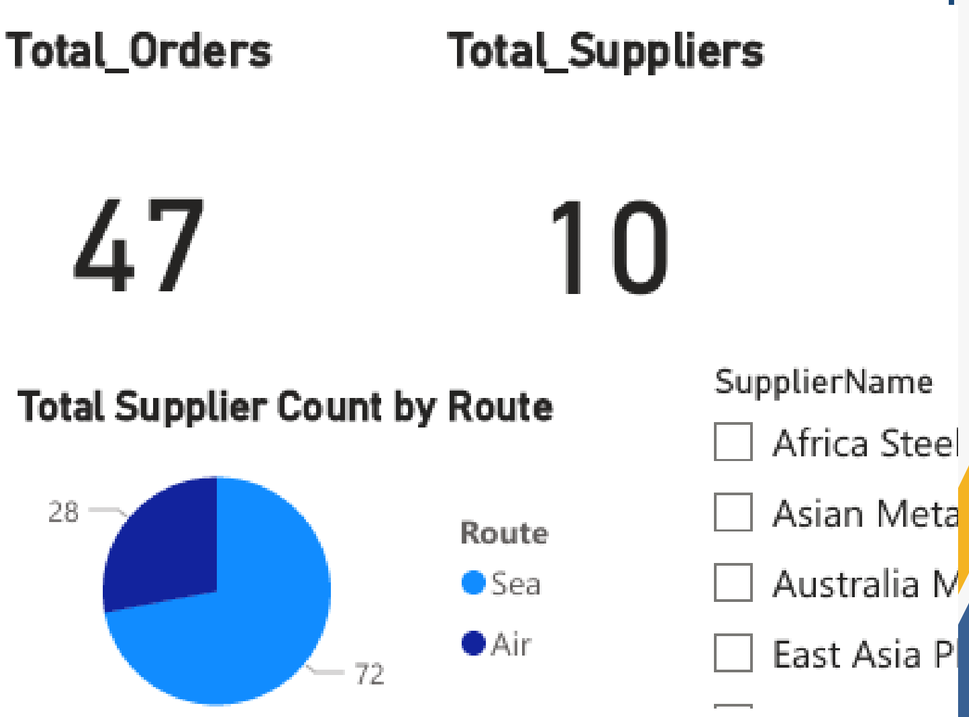
East Asia Plastics and India Textiles Co.

- **Most Supplied Materials:**

Recycled Plastic and Scrap Metal

Transport Trends:

- **Sea routes = 72% of logistics → longer lead times**
- **Asia suppliers = highest average lead times**



Conclusion

This SQL and Power BI solution successfully enhances global supply chain visibility, enabling data-driven decisions on cost efficiency, supplier performance, and logistics optimization- supporting smarter procurement and improved operational responsiveness.

THANK YOU

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