Supply Chain Management Dashboard Report

Executive Summary

This report provides a complete overview of the Supply Chain Analytics Dashboard built using Power BI. The dashboard focuses on key areas such as revenue performance, inventory health, order fulfillment, supplier efficiency, shipping operations, and overall supply chain costs.

Business Problem

Companies often struggle with visibility across their supply chain. Issues such as late deliveries, high transportation cost, imbalanced inventory levels, and inconsistent supplier performance can impact customer satisfaction and profitability. This dashboard solves the problem by bringing all supply chain KPIs into a unified analytical view.

Dataset Description

The project uses a multi-table dataset containing real supply chain attributes. A total of seven tables were used:

1. Products Table – Product details such as category, price, location, and product type.

2. Suppliers Table – Supplier master data, including supplier name and region.

3. Inventory Table – Daily inventory levels, safety stock, reorder points, and warehouse ID.

4. Orders Table – Customer orders containing order quantity, order date, delivery status, and product details.

5. Supplier Performance Table – Supplier delivery time, defect rate, and product supply cost.

6. Shipping Table – Shipment details such as carrier, transit time, shipping cost, and delivery status.

7. Supply Chain Costs Table – Monthly cost data such as procurement, transportation, warehousing, and handling costs.

Data Model and Relationships

A star-schema data model was created with the Date Table acting as the time dimension. Key relationships include:

• Products ↔ Inventory (ProductID)

• Products ↔ Orders (ProductID)

• Suppliers ↔ Supplier Performance (SupplierID)

• Orders ↔ Shipping (OrderID)

• Date Table ↔ All Fact Tables (Date)

Inactive or unnecessary Power BI auto-created relationships were removed to maintain a clean model.

The final model supports high-performance filtering, drill-through, and page-level interactivity.

KPIs and Measures Created

The following DAX measures were developed:

• Total Revenue = SUMX(Orders * Product Price)

• Total Orders

• Total Order Quantity

• On-Time Delivery Rate

• Total Inventory Level

• Average Safety Stock

• Average Reorder Point

• Average Supplier Delivery Time

• Average Defect Rate

• Total Shipping Cost

• Total Supply Chain Cost

Dashboard Pages Summary

Page 1 – Executive Summary: Shows overall KPIs, trends, and high-level performance.

Page 2 – Inventory Dashboard: Tracks stock levels, product inventory, safety stock, and warehouse distribution.

Page 3 – Order Fulfillment: Displays order status, delivery rate, and product demand.

Page 4 – Supplier Performance: Evaluates supplier quality, defect rate, and cost trends.

Page 5 – Shipping & Logistics: Analyzes shipping cost, transit time, and delivery performance.

Page 6 – Supply Chain Costs: Breaks down transportation, holding, and operational costs.

Insights & Findings

• Revenue and orders remain consistent but show seasonal trends.

• Inventory levels are high, with some risks of overstock and understock.

• On-time delivery rate is 82%, below industry benchmark.

• Supplier defect rate is extremely low; however some suppliers have high delivery times.

• Shipping cost is significant and fluctuates across carriers.

• Total supply chain cost exhibits seasonal peaks.

Recommendations

• Improve warehouse operations to reduce delivery delays.

• Balance inventory using forecasting models.

• Negotiate contracts with high-cost carriers and suppliers.

• Implement route optimization to reduce transit time.

• Monitor slow-moving products and reduce excess stock.

Conclusion

This supply chain dashboard provides a powerful analytical tool for decision-makers. It helps identify inefficiencies, optimize cost, improve supplier relationships, and enhance customer satisfaction. The multi-page structure gives a comprehensive view of operations across the entire supply chain.