Supply Chain Data Analysis Report

# 1. Dataset Overview

The uploaded dataset consists of 100 records and 24 columns. It provides detailed information on product types, stock levels, pricing, transportation modes, risk factors, and sustainability indicators.

# 2. Key Observations

Summary statistics of selected numerical fields:

- Price: Mean = 49.46, Standard Deviation = 31.17

- Availability: Mean = 48.40, Standard Deviation = 30.74

- Revenue generated: Mean = 5776.05, Standard Deviation = 2732.84

- Stock levels: Mean = 47.77, Standard Deviation = 31.37

- Lead times: Mean = 15.96, Standard Deviation = 8.79

- Shipping costs: Mean = 5.55, Standard Deviation = 2.65

- Manufacturing costs: Mean = 47.27, Standard Deviation = 28.98

- Defect rates: Mean = 2.28, Standard Deviation = 1.46

- Costs: Mean = 529.25, Standard Deviation = 258.30

# 3. Supply Chain Risk Analysis

Risk factor distribution:

- Low Risk: 37 records

- High Lead Time Risk: 27 records

- Failed Inspection Risk: 21 records

- High Defect Risk: 15 records

# 4. Sustainability Factor Analysis

Sustainability factor distribution based on transportation modes:

- Medium Carbon Emission: 29 shipments

- Low Carbon Emission: 28 shipments

- High Carbon Emission: 26 shipments

- Unknown: 17 shipments

# 5. Business Insights and Recommendations

Based on the analysis, the following insights and recommendations were drawn:

- Air transport, associated with high carbon emissions, should be minimized for non-urgent deliveries to promote sustainability.

- Shipments using Rail transportation represent a sustainable practice and should be expanded.

- High defect rates and failed inspections highlight the need for stronger quality control mechanisms.

- Optimizing lead times by collaborating with suppliers can reduce operational risk and improve efficiency.

- Accurate data recording, especially for transportation modes, is crucial for future sustainability reporting.