Supply Chain Analysis Project

**Prepared by: Group 4**

Tools used: Excel, Tableau

# 1. Project Overview

This project focuses on analyzing supply chain data to identify patterns, trends, and improvement opportunities in areas like sales performance, inventory, logistics, and profitability. The data was cleaned and prepared for analysis, leading to actionable insights and dashboard visualizations.

# 2. Data Overview

The dataset includes 100 records and 24 columns, covering product details, pricing, sales performance, manufacturing, stock levels, and shipping details. It includes numerical, categorical, and textual fields such as price, revenue, SKU, inspection results, and lead times.

# 3. Data Cleaning Steps

- Removed extra spaces from column names.

- Converted numeric columns to proper data types.

- Removed rows with missing critical fields (e.g., Product type, SKU, Revenue).

- Standardized values (e.g., consistent naming for product types).

- Calculated new columns: Profit, Profit Margin, and Stock Risk.

# 4. Key Analysis Ideas

## 4.1 Products Pricing and Segmentation Overview

• Which product should be repriced to improve sales?

• Which products need their production rate adjusted based on demand?

• Which customer segment should be targeted in future campaigns?

## 4.2 Supply Chain Efficiency

• Which supplier has the lowest defect rate and shortest lead time?

• Who would be the most cost-effective supplier if shipping costs increase?

## 4.3 Logistics & Shipping Performance

• What is the most cost-effective shipping method?

• Which transportation mode balances cost and speed best for skincare?

• What are the most and least cost-effective shipping routes?

## 4.4 Cost & Profitability Analysis

• Which products have the highest and lowest profit margins?

• How do manufacturing costs relate to product prices and revenue?

• Which suppliers offer the best profitability with low costs?

• Which product type is better to focus on when storage space is limited?

# 5. Dashboard Overviews

## 5.1 Revenue Dashboard

This dashboard visualizes product performance including total revenue, customer demographics, stock levels, and manufacturing/shipping costs. It helps identify revenue-driving segments and cost-impacting factors.

Key Questions:

• Which product generates the highest revenue?

• How do stock levels relate to revenue?

• What transportation method is most cost-effective?

## 5.2 Supplier Evaluation Dashboard

This dashboard analyzes supplier performance based on defect rates, inspection results, lead times, and manufacturing costs by product type and location.

Key Questions:

• Which suppliers are more reliable?

• Which locations have the highest defect rates?

• Which supplier offers the best trade-off between cost and time?

# 6. Conclusion

This analysis helped uncover key insights regarding supply chain efficiency, product profitability, and shipping logistics. These insights can support better strategic decisions and pave the way for future predictive models and optimization opportunities.