

Dataco supply chain

Introduction

The Dataco Supply Chain dataset provides a complete view of how products move from order placement to final delivery.

This analysis focuses on understanding:

- How efficiently the supply chain is performing
- Where delays and bottlenecks exist
- Which regions, categories, and customer segments drive business growth
- How sales, profit, and deliveries vary across the dataset

The goal is to uncover insights that support better decision-making, improved delivery reliability, customer satisfaction, and profitability.

Project Objectives

- Analyze overall sales, orders, and profit to assess financial performance.
- Evaluate delivery performance (late vs on-time) to identify inefficiencies.
- Study order trends over time to detect seasonal patterns and demand shifts.
- Understand city, region, and market-level performance.
- Analyze product categories & segments to determine strong and weak areas.
- Identify bottlenecks in shipping and order processing.
- Provide data-driven recommendations to enhance supply chain efficiency.

Data Cleaning

Work done in Python:

- Removed **duplicate** records
- Replaced or removed **missing values**
- Converted **string dates** → **proper date format**
- Standardized numeric fields
- Corrected inconsistent category names
- Exported dataset for SQL & Power BI

Outcome: Clean and structured dataset ready for analysis.

Data Analysis

Key SQL activities performed:

- Identified **top-selling** markets, segments & categories
- Analyzed **profitability** across regions
- Studied **shipping mode efficiency**
- Calculated **discount impact** on profit
- Extracted **order trends** (by month & year)
- Found **most frequently ordered** products

Outcome: Strong analytical foundation for the dashboard.

Dashboard

shipping_mode

- First Class
- Same Day
- Second Class
- Standard Class

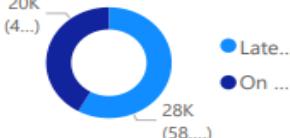
delivery_status

- Advance shipping
- Late delivery
- Shipping canceled
- Shipping on time

category_name

- Accessories
- As Seen on TV!
- Baby
- Baseball & Soft...
- Basketball
- Books
- Boxing & MMA
- Cameras

Late Delivery Count and On Time Delivery Count



dataco supply chain overview

9.34M

47.56K

28K

1.02M

20K

47.56K

21.35

Sum of sales

Count of order_id

Late Delivery Count

Sum of order_profit_per...

On Time Delivery ...

Count of customer...

Average of order...

Order Trend Over Time



customer_city and sales

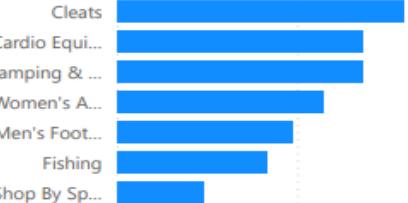
sales ● 9.989999... ● 11.28999... ● 14.9899... ● 15.9899... ● 17.9899... ● 19.9799... ● 19.9899...



top 10 category_name

orders by segement

orders by market



Consumer

LATAM

Corporate

Europe

Home Office

Pacific Asia

USCA

Africa

0M

1M

2M

0M

2M

4M

0M

1M

2M

Dashboard KPIs

The Power BI Dashboard Highlights:

- **Total Sales:** 9.34M
- **Total Orders:** 47.56K
- **Late Deliveries:** 28K
- **On-Time Deliveries:** 20K
- **Total Profit:** 1.02M
- **Avg Order Processing Time:** 21.35 Days
- **Customer Count:** 47.56K

These KPIs give a quick snapshot of overall supply chain health.

Order Trend Over Time

The line chart shows:

- How order volume changes month-to-month
- Seasonal variation in sales and demand
- Periods of high order spikes followed by drops

Insight: The business experiences **clear seasonal patterns**, indicating the need for better forecasting, staffing, and inventory planning.

City-wise Sales

The map shows:

- Which cities contribute most to overall sales
- Geographical distribution of customer purchases
- Regional areas that generate strong or weak revenue

Insight: Some cities perform extremely well, while others contribute very little — showing uneven market penetration.

Delivery Performance

Comparison shows:

28K Late Deliveries

20K On-Time Deliveries

Insight: More than **60% of deliveries are delayed**, indicating a major logistics problem.

This directly affects customer satisfaction and operational efficiency.

Top 10 Categories by Sales

Highlights:

- Highest-selling categories generate the largest share of revenue
- Some categories show much lower contribution

Insight: Inventory planning, promotions, and procurement should prioritize top-performing categories.

Insights & Findings

- Order volume shows seasonal fluctuations.
- Sales are concentrated in a few key cities/regions.
- High late delivery rate indicates operational delays.
- Strong dependence on Consumer segment.
- Product category sales are imbalanced.
- Markets like Africa show low performance, indicating growth opportunities.

Conclusion

- Business has strong sales in specific regions and categories but overall performance is uneven.
- Delivery inefficiencies (60% late) significantly impact customer experience.
- Market and segment distribution is unbalanced, showing room for growth.
- There is a need to optimize logistics, inventory planning, and segment strategy.

Recommendations

- **Improve logistics & delivery process**
 - Identify reasons for delays
 - Improve partner performance & route optimization
- **Strengthen high-performing regions**
 - Better stock availability
 - Region-focused marketing
- **Target low-performing markets**
 - Promotions, discounts, partnerships
- **Optimize product category strategy**
 - Invest more in top-sellers
 - Reduce low-moving inventory
- **Customer Segment Strategy**
 - Loyalty programs for consumers
 - Expand focus on Corporate & Home Office clients
- **Better Forecasting**
 - Use trend data for inventory & manpower planning