

# **Supply Chain Analytics Dashboard**

Advanced Statistics Project

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# Agenda

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# Introduction

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# Project Overview

- Developed an interactive Streamlit dashboard for supply chain analytics.
- Analyzed large-scale global supply chain data.
- Extracted key performance indicators related to delays, profit, and geography.
- Applied statistical methods to interpret operational insights.

## **Research Inspiration**

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# Research Paper & Inspiration

- This project is inspired by academic research in supply chain analytics.
- Reference paper:
  - Carboneau et al. (2008), *European Journal of Operational Research*
  - Focuses on data-driven analysis for supply chain performance evaluation.
- Instead of direct replication, the analytical logic was adapted to:
  - analyze delivery delays,
  - evaluate profitability patterns,
  - identify geographic performance differences.

## Dashboard Overview

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## Supply Chain Analytics Dashboard



### Key Metrics

Total Orders	Average Profit	Late Delivery (%)
180519	21.97	57.28

## Key Metrics

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# Key Performance Indicators

- **Total Orders:** 180,519
- **Average Profit per Order:** 21.97
- **Late Delivery Rate:** 57.28%
- **Most Profitable Category:** Computers

## Timeline

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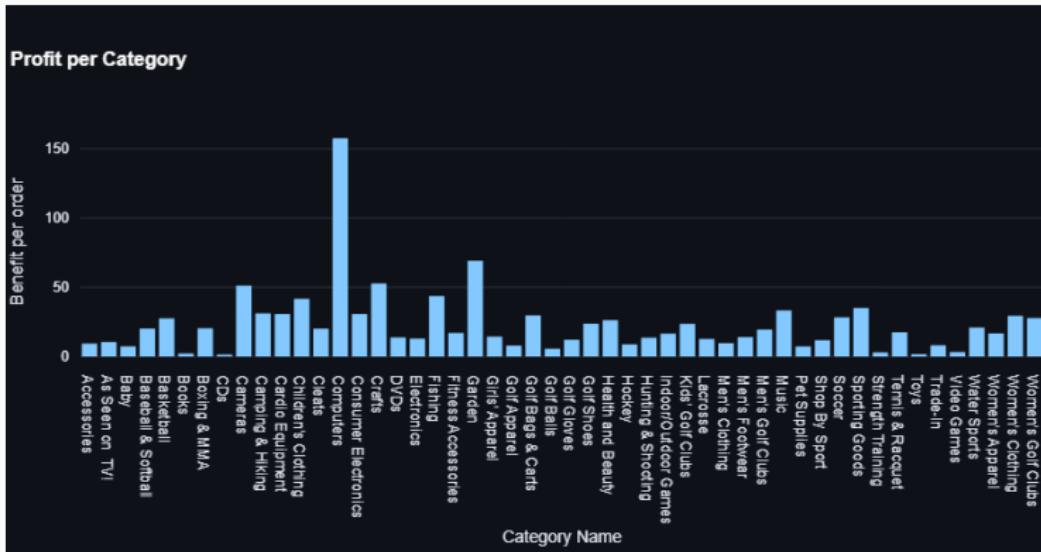
# Supply Chain Journey

- Order
- Processing
- Shipping
- Delivery

# Visual Analytics

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# Profit by Category



# Delivery Delay Distribution



# Late Deliveries by Country



## Summary

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# Key Insights

## Operational Findings

- Delivery delays affect more than half of all orders.
- Profitability varies significantly across product categories.
- Country-level performance exposes major bottlenecks.

## Dashboard Advantages

- Interactive KPI tracking.
- Clear, interpretable data visualizations.
- Geographic insights for strategic decisions.

## Team

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# Team Members

## **Sam Collin Allen Joseph Sahaya Jude**

- Data Cleaning & Preparation
- KPI Engineering
- Dashboard UI Development

## **Yogesh Muthukumar**

- Exploratory Data Analysis
- Visualization & Insights
- Report & Presentation Lead

## Conclusion

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# Conclusion

- The dashboard highlights critical improvement areas in supply chain operations.
- Delivery delays present an opportunity for major optimization.
- Product-level profitability insights support strategic planning.
- Future Enhancements:
  - Predictive models for delay forecasting
  - Real-time API integration
  - Automated anomaly detection

# Thank You!

Questions?