Amazon Sales Data Analysis

Project Report

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Introduction & Dataset Overview

Objective:
Analyze the Amazon sales dataset to extract actionable insights on sales performance, product categories, fulfillment, and geographic distribution.

Dataset Overview:
Total Orders: 128808
Total Revenue (approx): ₹75,941,866.00
Average Order Value (AOV): ₹627.52
Period: 2022-03-31 to 2022-06-29

Data cleaning: duplicates removed, date & amount converted, feature engineering applied (Order_Month, is_cancelled, Revenue)
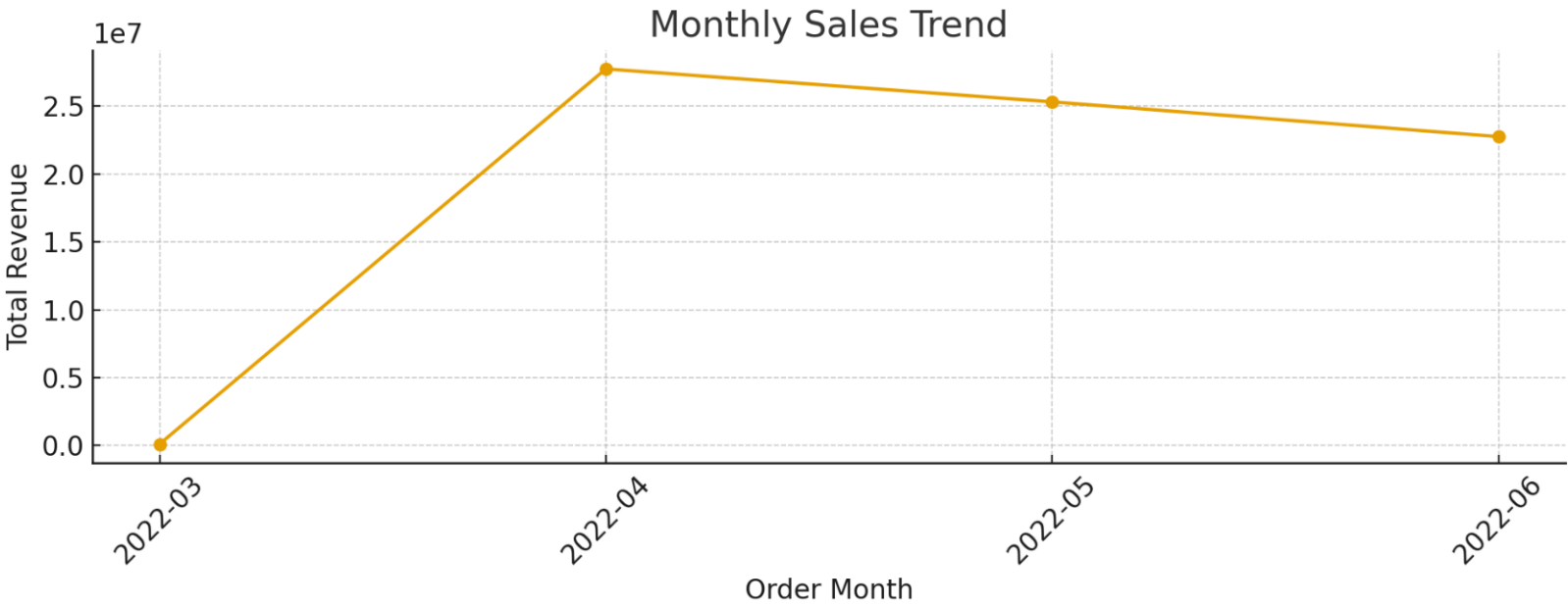
Data Cleaning Summary

Data Cleaning Summary:
- Rows after cleaning: 128808
- Columns: 25
- Duplicates removed: Yes
- Columns with missing values: {'currency': 7789, 'Amount': 7789, 'ship-city': 33, 'ship-state': 33, 'ship-postal-code': 33, 'ship-country': 33, 'fulfilled-by
- Note: 'fulfilled-by' has many missing values which were left as-is (optional logical fill possible)

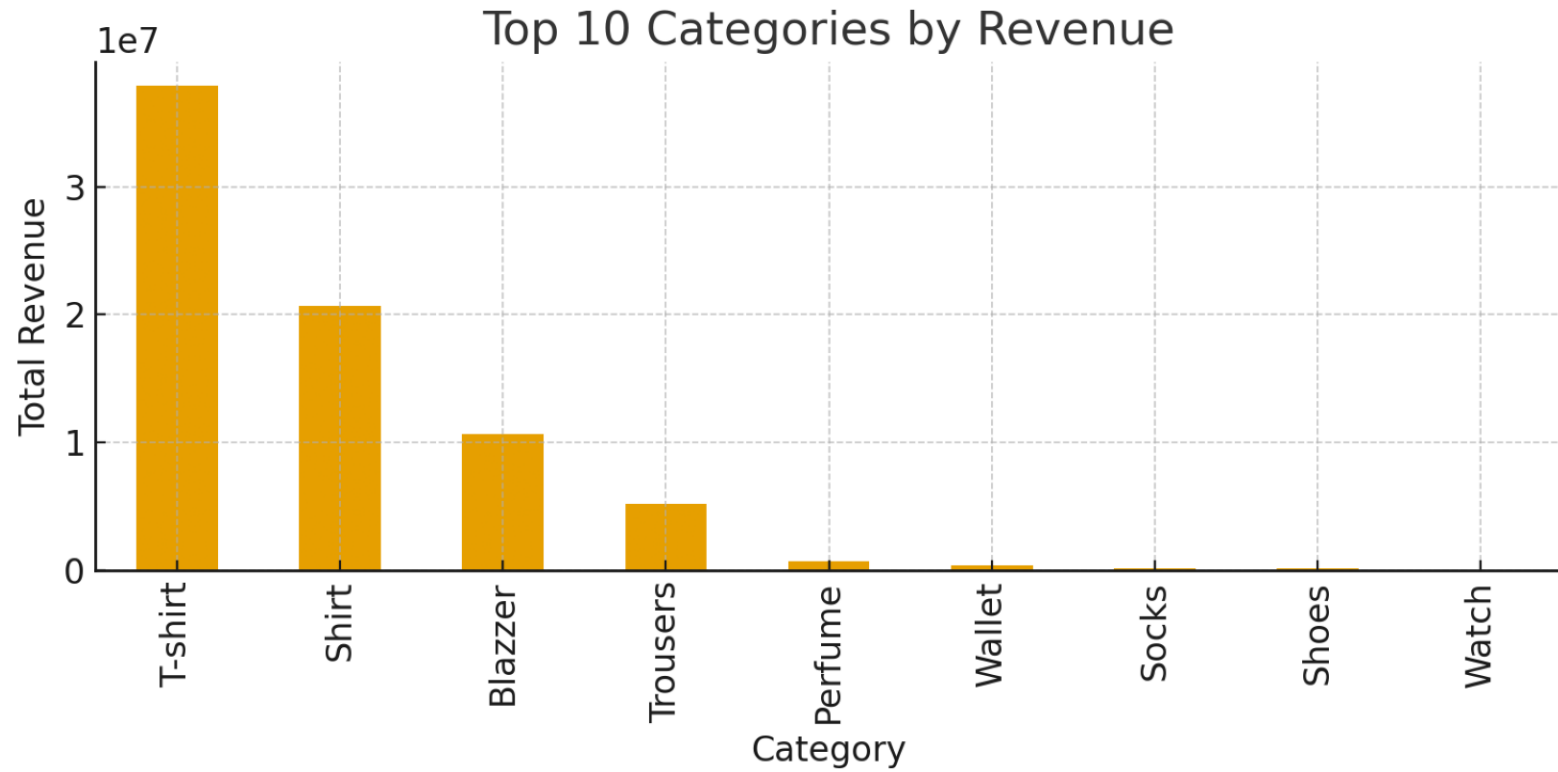# Feature Engineering

- Generated columns: Year, Month, Day, Order_Month, is_cancelled, Revenue
- Revenue = Amount * Qty
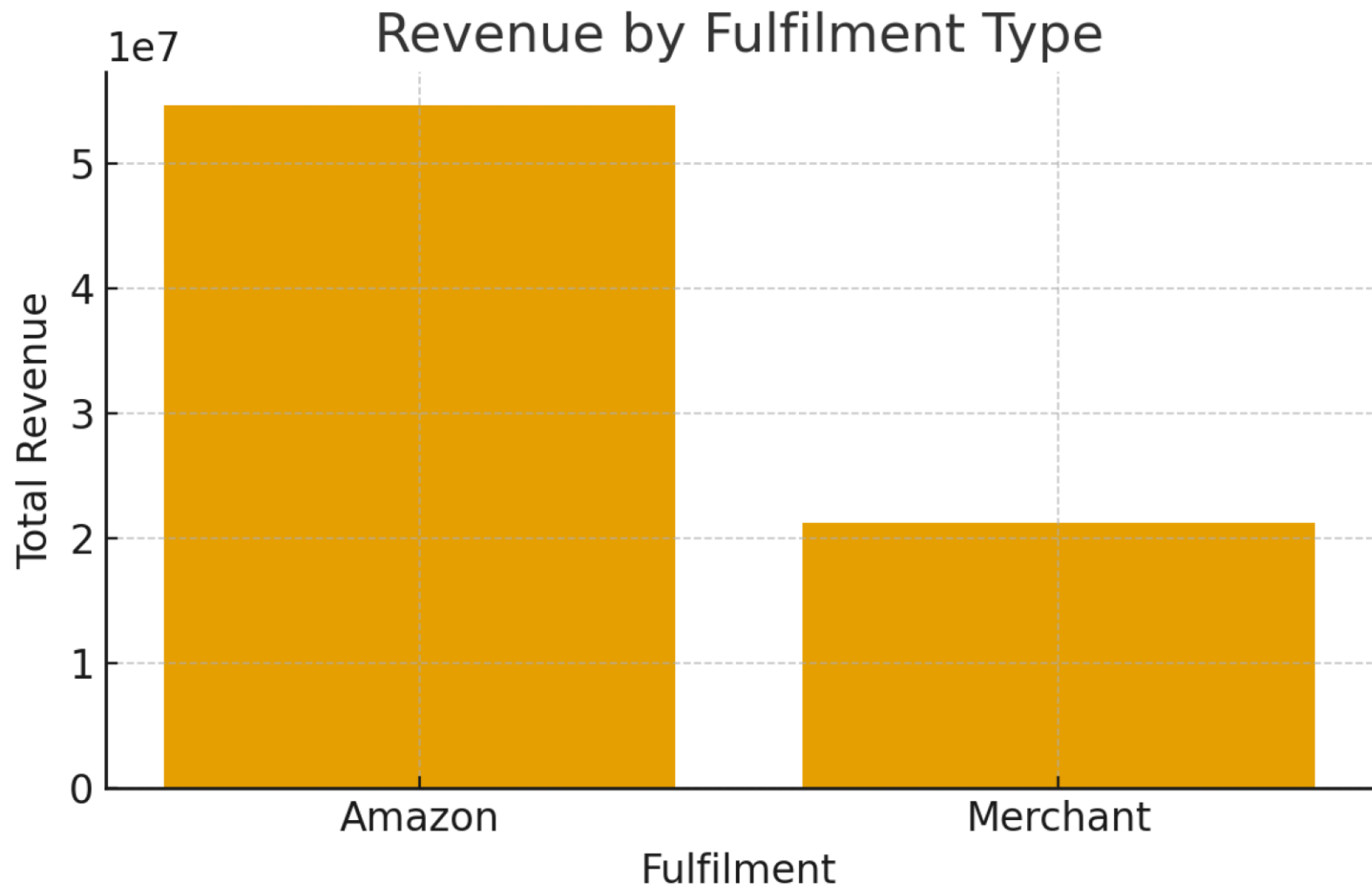- is_cancelled = 1 if Status contains 'cancel' else 0
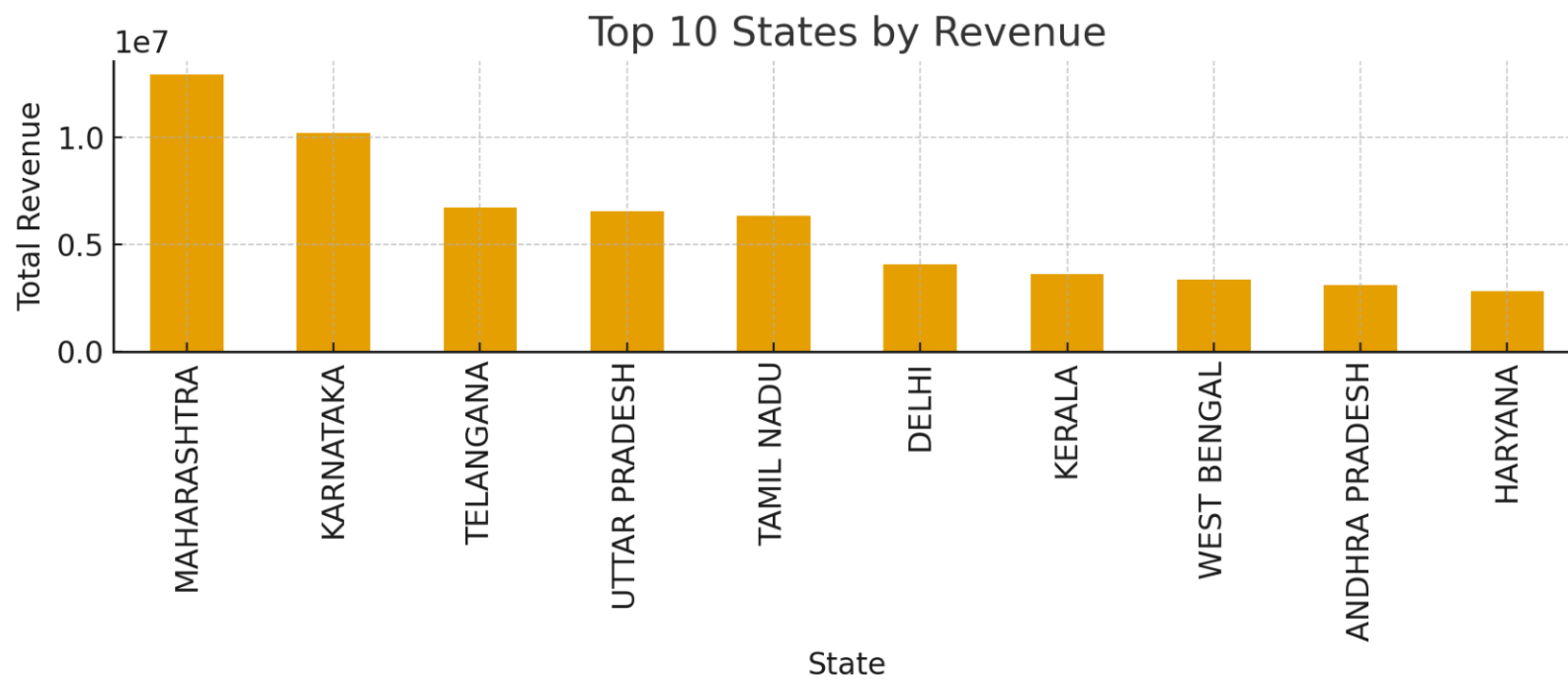
Monthly Sales Trend: shows revenue evolution by month.

Top 10 Categories by Revenue: T-shirts, Shirts, Trousers dominate.

Top 10 Categories by Revenue

Revenue by Fulfilment Type: compares Merchant vs Amazon fulfillment.

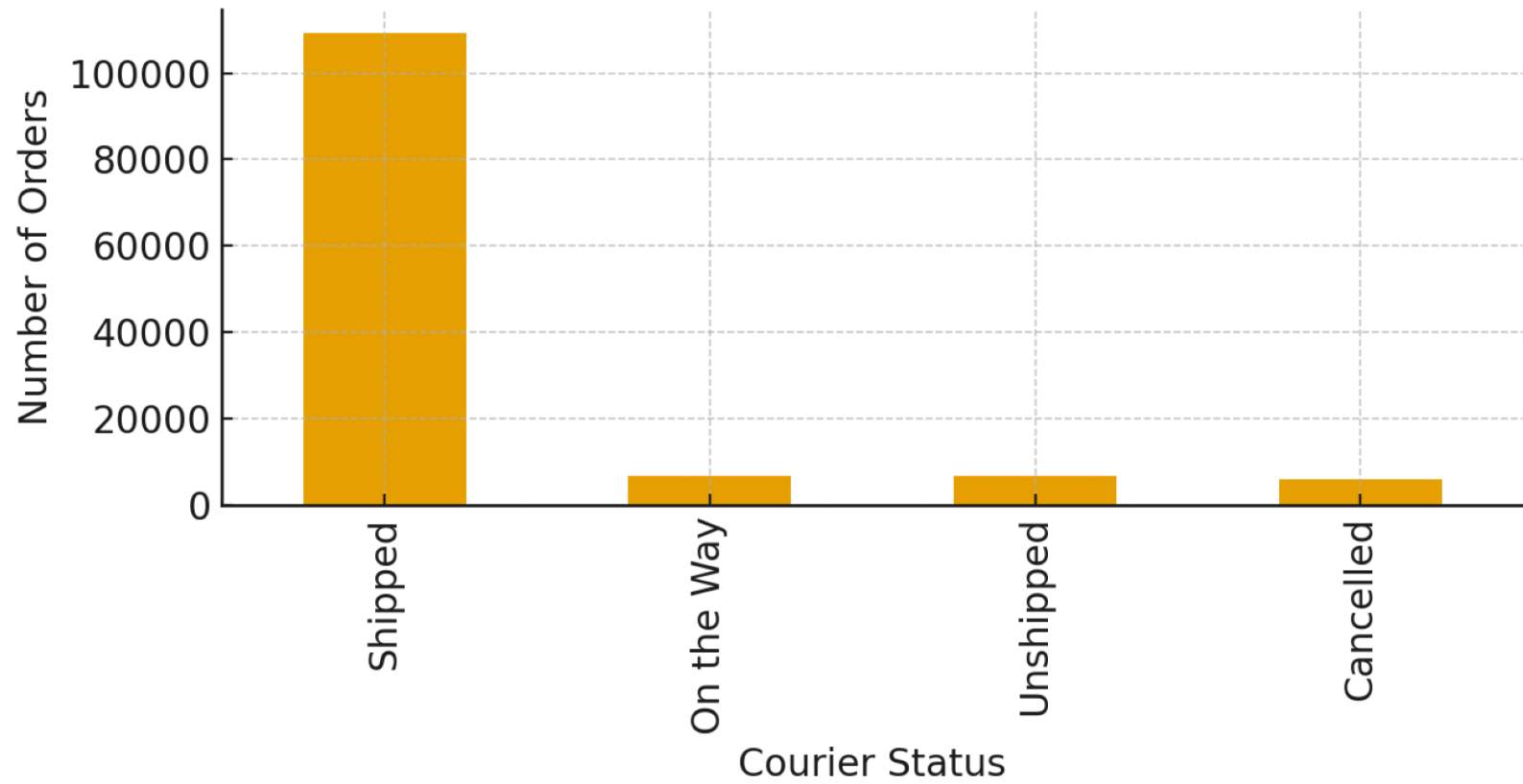# Revenue by Fulfilment Type

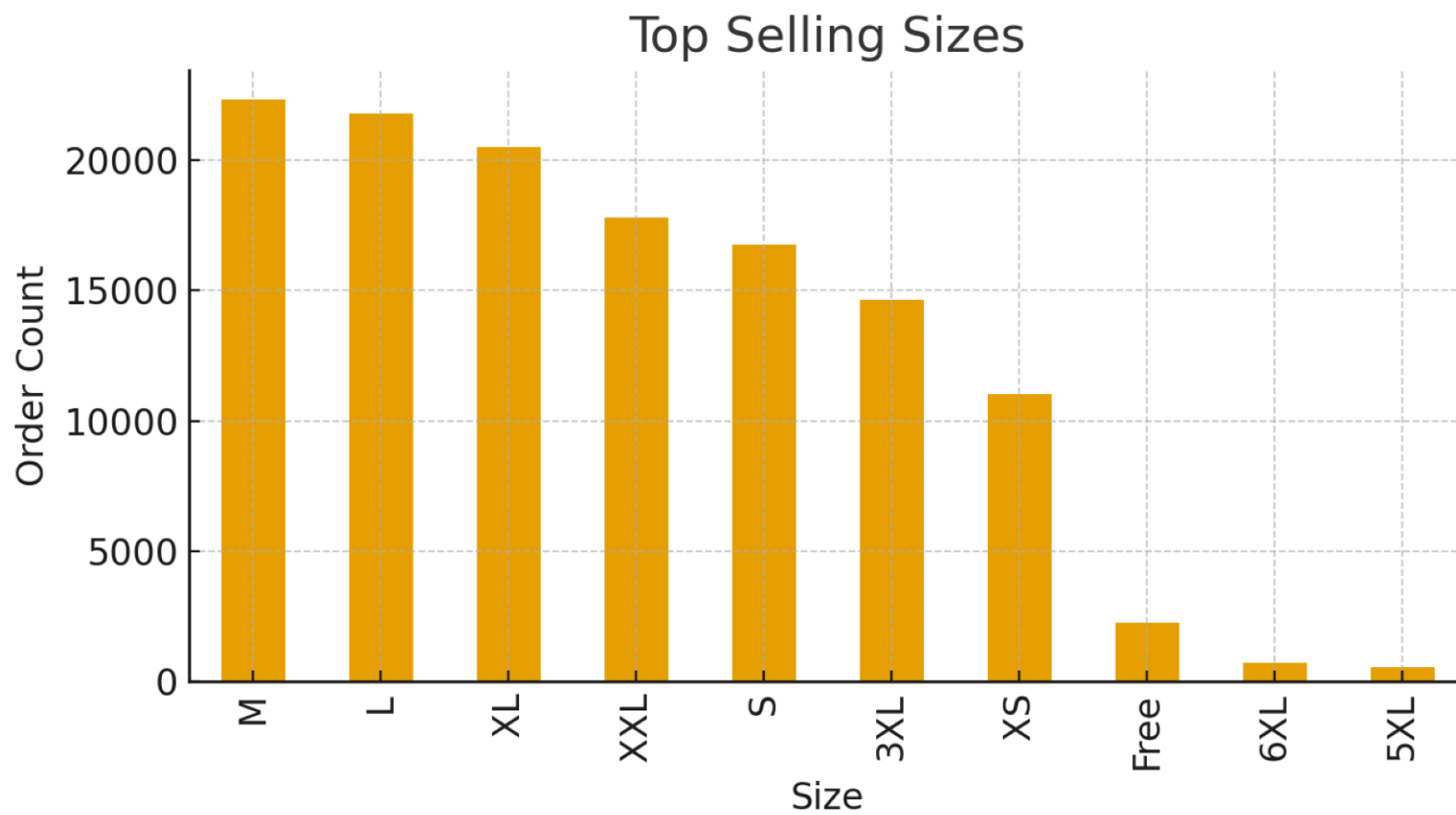Top 10 States by Revenue: geographic distribution of sales.

Top 10 States by Revenue

Courier Status Distribution: delivery status counts.

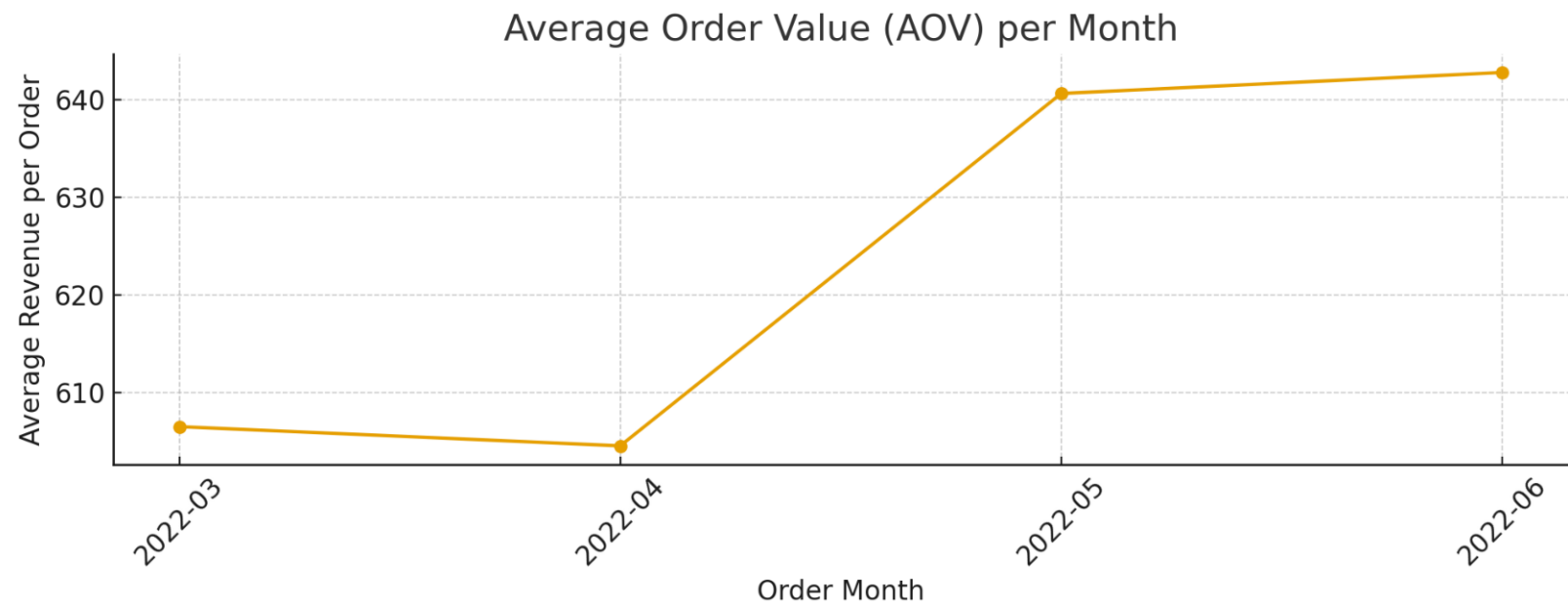# Courier Status Distribution

Top Selling Sizes: most ordered product sizes.

Top Selling Sizes

Average Order Value per Month: shows AOV trends.

Average Order Value (AOV) per Month

Insights & Recommendations

Key Insights & Recommendations:

- Total Orders: 128808
- Total Revenue (approx): ₹75,941,866.00
- Average Order Value (AOV): ₹627.52
- Cancellation Rate: 14.22%
- Peak Month: 2022-04
- Top Categories: T-shirt, Shirt, Blazzer
- Top States: MAHARASHTRA, KARNATAKA, TELANGANA, UTTAR PRADESH, TAMIL NADU

Recommendations:
1. Focus promotions on top categories (T-shirts, Shirts, Trousers).
2. Target advertising to top states and cities to improve ROI.
3. Maintain higher stock for popular sizes (M, L, XL).
4. Consider increasing Amazon-fulfilled orders for better service reliability.

Conclusion

Conclusion:
The analysis provides a comprehensive view of sales performance and actionable recommendations to improve inventory planning, marketing targeti