

Amazon Sales Analysis Report

Introduction

This project analyzes an Amazon sales dataset to extract actionable insights that drive business decision-making. The analysis covers order details including order ID, date, status, fulfillment type, product information, quantity, amount, and shipping details.

Objective

- Sales performance and revenue trends
- Product popularity and demand patterns
- Customer behavior and purchasing habits
- Fulfillment efficiency and logistics performance
- Geographical distribution of sales

These insights enable operational optimization, improved customer satisfaction, and increased business revenue.

1. Dataset Overview

Size: 128,976 rows and 21 columns

Time Period: March 31, 2022 to June 29, 2022

Key Columns: Order ID, Date, Status, Fulfillment, Sales Channel, Category, Quantity, Amount, Shipping City, Shipping State, Courier Status, Shipping Service Level, B2B Indicator

The dataset is comprehensive and covers a 3-month period, providing sufficient data for meaningful trend analysis.

2. Data Cleaning Summary

The dataset underwent comprehensive cleaning to ensure data quality:

- Converted Date column to datetime format
- Replaced missing values with "Unknown"
- Converted Amount to numeric format and handled NaN values
- Added Month column for trend analysis
- Validated all dataset types (boolean, datetime, float, integer, object)

The cleaned dataset is now consistent and ready for analysis.

3. Sales Overview

3.1 Total Revenue

Total revenue generated: ₹7,85,90,170.25 (approximately ₹7.86 crore).

This represents the combined value of all orders, including shipped, delivered, and cancelled transactions.

3.2 Monthly Sales Trend

Sales progression across the analysis period:

- March 2022: Modest initial sales
- April 2022: Sharp rise in sales (peak month)
- May 2022: Slight decline
- June 2022: Stabilization

Key Insight: April demonstrated the strongest performance, suggesting potential seasonal demand patterns that warrant further investigation.

4. Product Analysis

4.1 Top Product Categories

- T-shirts and Shirts dominate the product portfolio
- These two categories significantly outperform other offerings
- Other categories (Blazer, Trousers, Saree, etc.) show considerably lower demand

4.2 Purchase Quantity Patterns

- Majority of orders contain Quantity = 1
- Very few orders exceed 2 units

Key Insight: Customers predominantly purchase single items. Introducing combo deals and bundle offers could increase average order value.

5. Fulfillment & Logistics Analysis

5.1 Fulfillment Methods

- "Unknown" fulfillment type is highest (likely due to missing data)
- Easy Ship is the primary fulfillment method when data is available

Key Insight: Easy Ship is the preferred logistics partner. Addressing missing fulfillment data at the source would improve tracking accuracy.

5.2 Shipping Service Level

- Expedited Shipping: ~85,000 orders (preferred)
- Standard Shipping: ~40,000 orders

Key Insight: Customers demonstrate strong preference for faster delivery and appear willing to pay for expedited service.

6. Customer & Geographic Analysis

6.1 Top Customer Cities (by Order Count)

1. Bengaluru (~11,000 orders)
2. Hyderabad
3. Mumbai
4. New Delhi
5. Chennai
6. Pune

These metropolitan regions represent the largest customer concentration.

6.2 Top States by Orders

1. Maharashtra
2. Karnataka
3. Tamil Nadu
4. Telangana
5. Uttar Pradesh

These five states account for the majority of orders. The concentration in metro cities reflects high online shopping activity in densely populated tech hubs.

6.3 Order Status Distribution

- Shipped: Majority of orders
- Delivered to Buyer: Second largest segment
- Cancelled: Significantly lower
- Damaged/Lost: Minimal

Key Insight: High delivery success rate with moderate cancellation levels.

6.4 Courier Status Distribution

- Most orders show "Shipped" status
- Few orders remain "On the Way" or "Undelivered"

7. Customer Segmentation

7.1 B2B vs Individual Sales

- Individual Buyers: ~98-99%
- B2B Sales: ~1-2%

Key Insight: Significant untapped opportunity exists in the B2B segment for business growth.

8. Key Insights Summary

Sales Performance

- Total revenue: ₹7.86 crore
- April recorded the highest sales
- Post-April sales showed slight decline before stabilizing in June

Product Performance

- T-shirts and Shirts are clear market leaders
- Single-item purchases dominate customer behavior
- Limited demand for other apparel categories

Fulfillment & Logistics

- Easy Ship is the primary fulfillment method
- Expedited shipping significantly outperforms standard shipping
- Strong delivery success rate with minimal damaged/lost orders

Customer Behavior

- High purchase concentration in Tier-1 metropolitan cities
- Limited repeat customer and B2B engagement
- Individual buyers represent 98-99% of customer base

Geographic Insights

- Maharashtra and Karnataka lead in order volume
- Metro cities dominate online shopping activity
- Bengaluru, Hyderabad, and Mumbai are top performing cities

9. Strategic Recommendations

9.1 Optimize Top-Selling Categories

- Increase inventory for T-shirts and Shirts
- Introduce new varieties, colors, and designs
- Leverage these categories for marketing campaigns

9.2 Increase Average Order Value

- Implement combo packs ("Buy 2 Get 1 Free")
- Deploy cross-selling strategies with complementary items
- Offer bundle discounts

9.3 Improve Fulfillment Tracking

- Resolve missing fulfillment data entries
- Expand Easy Ship coverage across regions
- Implement real-time tracking systems

9.4 Expand B2B Sales

- Introduce bulk-order discounts
- Target small retailers and businesses
- Create dedicated B2B sales channels

9.5 Strengthen Logistics Infrastructure

- Prioritize warehouse expansion in Bengaluru, Hyderabad, and Mumbai
- Reduce delivery times further
- Optimize courier partnerships

9.6 Reduce Order Cancellations

- Improve pre-shipping customer communication
- Offer flexible delivery time slots
- Implement proactive customer support

10. Conclusion

The analysis reveals strong market demand for apparel categories, particularly T-shirts and Shirts, with high order volumes concentrated in metropolitan regions. Customers demonstrate a clear preference for expedited shipping and single-item purchases.

Key Opportunities:

- Optimize inventory management for top-performing categories
- Enhance logistics and delivery capabilities

- Strengthen customer loyalty programs
- Capture the underserved B2B market segment

By implementing these recommendations, the business can improve operational efficiency, increase revenue, and establish stronger market positioning. This report provides data-backed insights to support strategic decision-making and drive sustainable business growth.

Analysis Period: March 31, 2022 – June 29, 2022