



# Executive Summary

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## Executive Summary

This project analyzes end-to-end **e-commerce sales and revenue performance** using SQL (MySQL) to uncover actionable business insights across customer behavior, product performance, order fulfillment, and revenue leakage.

The analysis reveals that while the platform generates **strong total revenue (~₹407K)** and attracts a large customer base, growth is constrained by **low repeat purchase rates, order cancellations, and revenue stuck in incomplete orders**. A majority of customers are one-time buyers, yet they contribute significantly to revenue—highlighting a major opportunity to improve retention and customer lifetime value.

Product and category analysis shows that revenue is driven by a mix of **high-volume essentials** and **high-value niche products**, emphasizing the need for differentiated inventory and pricing strategies. Additionally, cancellations account for approximately **₹97K in lost revenue**, and a substantial portion of revenue remains locked in *Pending* and *Processing* orders, impacting cash flow realization.

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## Key Business Insights

### 1 Revenue & Sales Performance

- Total revenue generated is approximately **₹407K**, with **561 out of 1000 orders** contributing to revenue.
- Average customer spend is around **₹1,190 per order**, indicating a healthy order value.
- Revenue trends show **seasonal patterns**, suggesting demand fluctuations across time periods.
- **Cancelled orders resulted in a revenue loss of ~₹97K**, representing a significant leakage.
- A **large share of revenue is currently stuck in 'Processing' status**, indicating operational or fulfillment delays.
- The observed revenue distribution and order lifecycle behavior are **normal for growing e-commerce platforms**.

### **Business takeaway:**

Improving order processing speed can unlock trapped revenue without increasing customer acquisition.

## **2 Customer Purchase Behavior**

- Out of **1000 registered customers**, **641 customers have made at least one purchase**.
- Customer segmentation reveals:
  - **316 One-Time Buyers**
  - **108 Repeat Buyers**
- Surprisingly, **One-Time Buyers contribute more total revenue** due to their larger population.
- On average, customers place **1.32 orders**, confirming a **low repeat purchase rate**.
- Average revenue per customer is approximately **₹1,400**, indicating strong initial purchase value.
- Purchase frequency distribution:
  - 316 customers purchased once
  - 83 customers purchased twice
  - 21 customers purchased three times
  - Only 4 customers purchased four times

### **Business takeaway:**

Customers are valuable but **retention is weak**, making repeat-purchase strategies a high-impact opportunity.

## **3 Product & Category Performance**

- **Top revenue-generating products** include:
  - Headphones, Children's Books, Loafers, Lipsticks, Mascara
- **Highest revenue categories:**
  - Electronics, Apparels, Footwear, Books
- **Top 5 products by units sold:**
  - Headphones, Hoodie, Smartphone, Tablets, Coats
- **High-value, low-volume products** include:
  - Gaming Consoles, Sneakers, T-Shirts, Bluetooth Speakers, Children's Books
- **Best performing categories overall:**
  - Beauty, Groceries, Apparels, Electronics, Books
- **Worst performing products:**
  - Eyeshadow Palettes, Biographies, Cheeses, Moisturizers, Self-Help Books

### **Business takeaway:**

Revenue is driven by a mix of **high-volume essentials** and **high-value niche products**, requiring different pricing and inventory strategies.

## **4 Order Funnel, Cancellations & Fulfillment**

- Order status breakdown:
  - **482 Completed orders**
  - **229 Processing orders**
  - **136 Cancelled orders**
- Completion rate stands at approximately **48%**.
- Cancellation rate is around **14%**, which is significant but manageable.
- **Cancellations are increasing year-over-year**, signaling potential customer friction.
- Fulfillment health indicators show:
  - High completion volume → **Healthy fulfillment system**
  - Processing orders exceeding cancellations → **No major fulfillment breakdown**
- Total revenue loss due to cancellations is approximately **₹97K**.

### **Business takeaway:**

Addressing early-stage customer drop-offs can significantly reduce revenue loss without operational overhauls.

## **5 Advanced Insights & Strategic Findings**

- A **small percentage of customers drive a disproportionately large share of revenue**, making them ideal targets for retention and upselling.
- The **top 5 products by sales volume are also the top revenue contributors**, confirming product-market alignment.
- **136 cancelled orders directly resulted in ~₹97K revenue loss**, quantifying the cost of churn.
- A substantial portion of revenue remains **locked in Pending and Processing orders**, affecting cash flow realization.

### **Business takeaway:**

Revenue growth can be achieved faster by:

- Retaining high-value customers
  - Reducing cancellations
  - Accelerating order completion
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# **Business** **Recommendations**

## **1 Convert One-Time Buyers into Repeat Customers**

### **What we saw**

- ~90% customers are **one-time buyers**
- Repeat buyers are few but **highly valuable**
- Avg revenue per customer  $\approx$  ₹1,400

### **Action**

- Launch post-purchase engagement:
  - Email / WhatsApp offers within 7–14 days
  - Discount on 2nd purchase
  - Product-based cross-sell (e.g., Headphones → Accessories)

### **Business Impact**

- Small increase in repeat rate can significantly boost total revenue
- Lower acquisition cost vs acquiring new customers

## **2 Unlock Revenue Stuck in Processing & Pending Orders**

### **What we saw**

- Large portion of revenue stuck in **Processing / Pending**
- Cancelled revenue  $\approx$  ₹97,000
- Majority revenue loss happens **before fulfillment**

### **Action**

- Improve checkout & payment completion:
  - Payment reminders for pending orders
  - Simplify checkout steps
  - Show clearer delivery timelines

### **Business Impact**

- Faster order completion
- Reduced revenue leakage
- Improved cash flow

### 3 Reduce Cancellation Rate Through Early Intervention

#### What we saw

- ~14% order cancellation rate
- Cancellations are **increasing year over year**
- Lost revenue ≈ ₹97,000

#### Action

- Identify high-risk orders:
  - Long processing time
  - High-value orders stuck >48 hours
- Proactively contact customers before cancellation
- Offer delivery reassurance or small incentives

#### Business Impact

- Prevents avoidable cancellations
- Improves customer trust
- Direct revenue recovery

### 4 Double Down on High-Performing Products & Categories

#### What we saw

- Top revenue products:  
*Headphones, Children's Books, Loafers, Lipsticks*
- Top categories:  
*Beauty, Groceries, Apparels, Electronics*
- Some products sell low volume but high value

#### Action

- Prioritize inventory & promotions for:
  - High-revenue products
  - High-margin, low-volume products
- Bundle slow-moving products with top sellers

#### Business Impact

- Better inventory planning
- Higher revenue per order
- Reduced dead stock

## **5 Treat High-Value Customers as a Separate Segment**

### **What we saw**

- Small % of customers drive large % of revenue
- High spenders exist even among one-time buyers

### **Action**

- Create a **High-Value Customer tag**
- Provide:
  - Priority delivery
  - Exclusive offers
  - Personalized recommendations

### **Business Impact**

- Higher lifetime value (CLV)
- Improved retention of top spenders
- Stronger brand loyalty

## **6 Align Fulfillment Health with Customer Experience**

### **What we saw**

- High completed orders = healthy operations
- Cancellation < Processing → good sign, but improvement possible

### **Action**

- Track fulfillment KPIs:
  - Order processing time
  - Cancellation before shipment
- Set internal SLA benchmarks

### **Business Impact**

- Stable operations
- Better customer satisfaction
- Lower churn from order experience



## Overall Business Value Delivered

- ✓ Identified revenue leakage points
- ✓ Highlighted customer behavior gaps
- ✓ Quantified cancellation impact
- ✓ Mapped product-level revenue drivers
- ✓ Designed actionable growth levers

**If implemented, these recommendations can:**

- Increase repeat purchases
  - Recover stuck and lost revenue
  - Improve fulfillment efficiency
  - Strengthen long-term revenue stability
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