



Executive Summary



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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.



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 ≈ ₹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 ≈ ₹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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