

# E-COMMERCE EXPLORATORY DATA ANALYSIS

## EXECUTIVE REPORT

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### EXECUTIVE SUMMARY

The analysis evaluates transactional e-commerce data to identify revenue drivers, structural risks, and value-creation opportunities. The findings indicate that revenue growth is primarily driven by **average order value rather than order volume**, while **returns and customer concentration represent material, addressable risks**. Clear seasonality provides predictable levers for revenue optimization.

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### 1. OBJECTIVE AND SCOPE

#### OBJECTIVE

- Identify key drivers of revenue performance
  - Quantify the impact of returns on net revenue
  - Assess customer and product concentration risks
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#### SCOPE

- Sales and return transactions
  - Monthly revenue and order trends
  - Customer-level and product-level performance
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### 2. DATA INTEGRITY AND METHODOLOGY

Prior to analysis, the dataset was cleansed to ensure decision-grade reliability:

- Non-commercial and manual accounting entries were removed
- Invoice dates were standardized
- Returns were explicitly separated from completed sales

This approach ensures that all revenue and trend insights reflect **true commercial activity** rather than accounting noise.

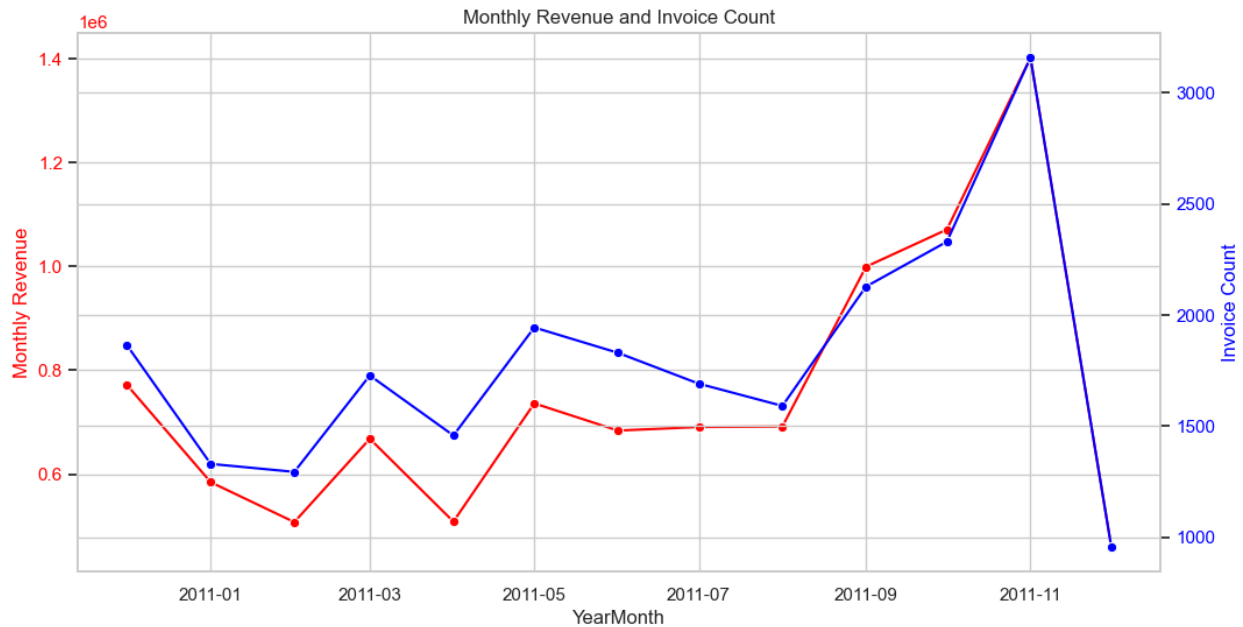
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### 3. REVENUE AND ORDER TRENDS

Revenue and demand were analyzed on a monthly basis to identify growth patterns and seasonality.

## Key Findings

- Revenue exhibits clear month-to-month variability
- Revenue growth is not always aligned with growth in invoice count
- Certain periods show revenue expansion driven by higher order values rather than higher transaction volume

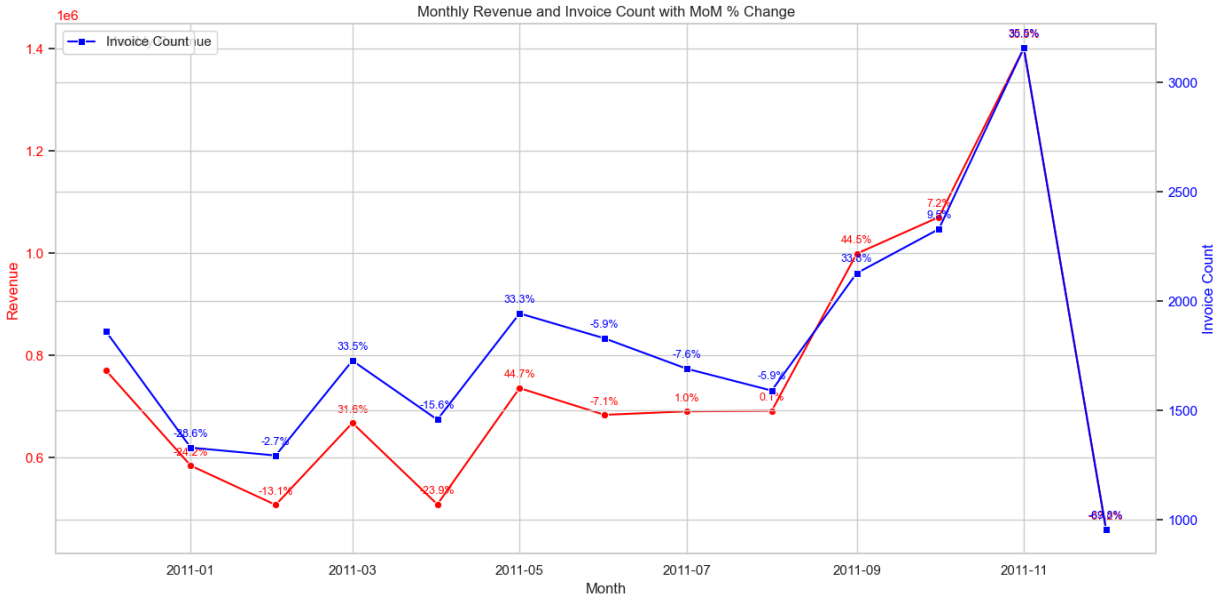


## 4. MONTH-OVER-MONTH PERFORMANCE DYNAMICS

Month-over-month (MoM) analysis was conducted to assess volatility and momentum.

### Key Findings

- Revenue growth rates fluctuate significantly across months
- Order growth is comparatively more stable than revenue growth
- Revenue volatility indicates sensitivity to pricing, basket size, or promotional activity

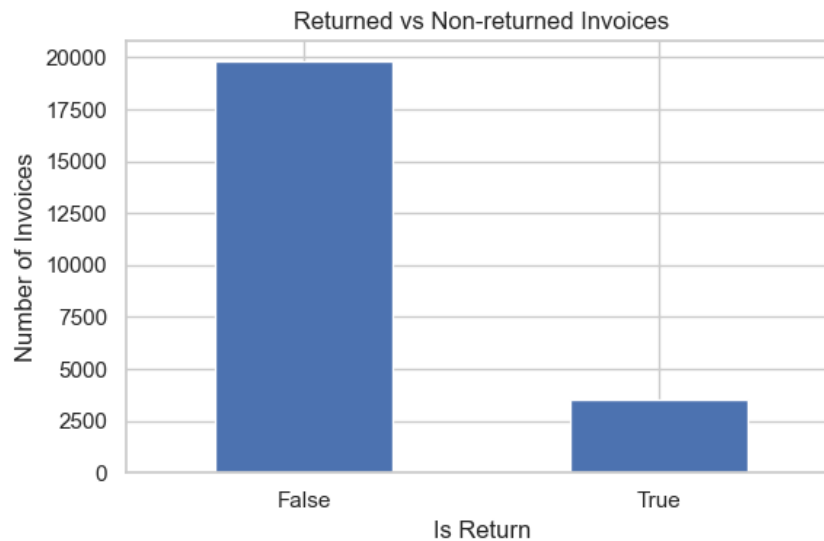


## 5. RETURNS IMPACT ANALYSIS

Returns were analyzed at the invoice level to assess their impact on revenue.

### Key Findings

- A measurable share of invoices contains returned items
- Returns materially reduce gross revenue
- Return behavior is not uniformly distributed over time



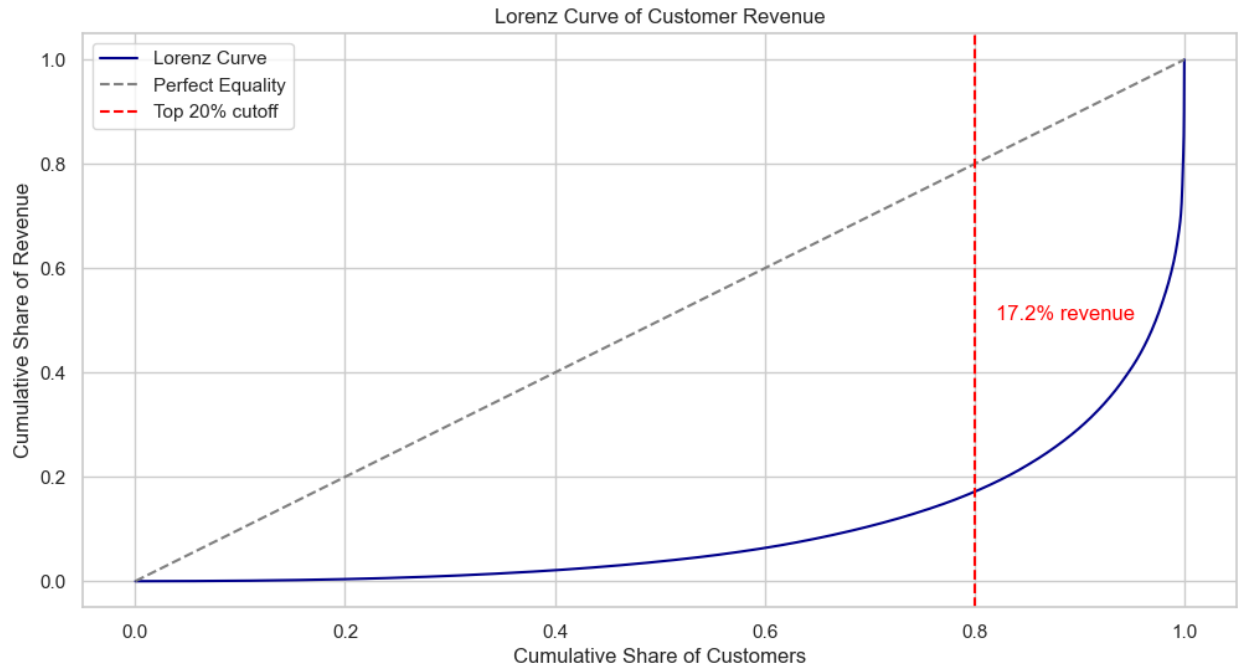
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## 6. CUSTOMER CONCENTRATION ANALYSIS

Customer-level aggregation was performed to evaluate revenue dependency.

### Key Findings

- Revenue contribution is highly skewed toward a small number of customers
- A limited customer cohort drives a disproportionate share of total revenue
- This concentration introduces revenue stability risk



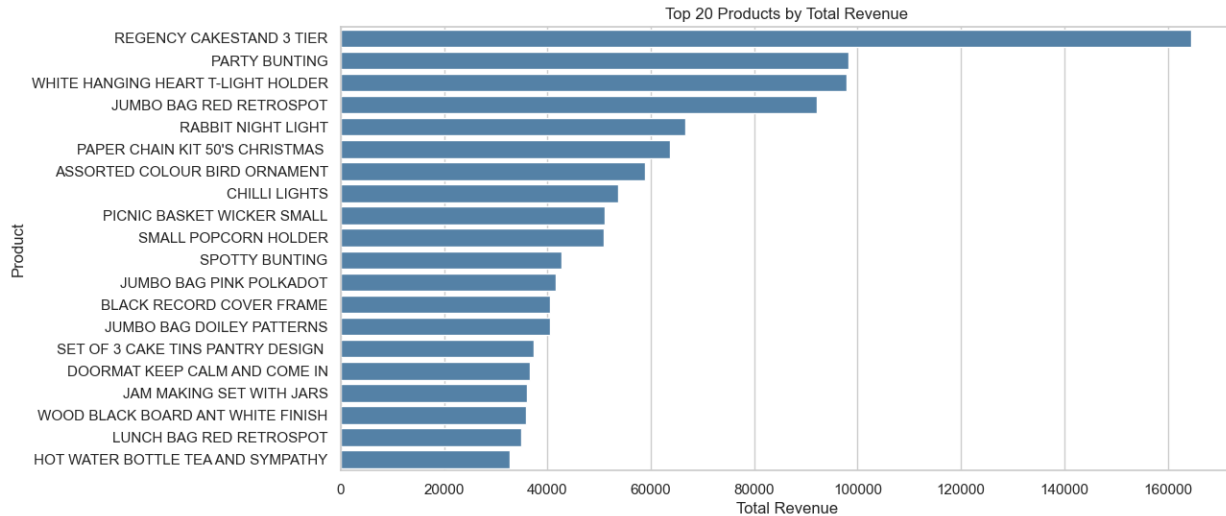
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## 7. PRODUCT PERFORMANCE OVERVIEW

Product-level analysis was conducted to identify revenue concentration across SKUs.

### Key Findings

- A small number of products generate a significant portion of revenue
- The majority of products contribute marginally
- Revenue follows a long-tail distribution across SKUs



## 8. EXECUTIVE INSIGHTS

- Revenue growth is driven more by **order value** than by **order volume**
- Returns represent a **structural and controllable revenue leakage**
- Customer and product concentration increase downside risk
- Seasonal patterns create predictable opportunities for revenue planning

## 9. STRATEGIC RECOMMENDATIONS

- 1. Increase Average Order Value**
  - Cross-selling and bundling during high-demand periods
- 2. Reduce Returns**
  - Focus on high-return products and customers identified in analysis
- 3. Protect High-Value Customers**
  - Retention and loyalty initiatives for top revenue contributors
- 4. Exploit Seasonality**
  - Inventory and pricing adjustments aligned with observed peaks

## 10. KPIS FOR ONGOING MANAGEMENT

The following metrics should be monitored on a recurring basis:

- Net Revenue (post-returns)
  - Return Rate
  - Average Order Value (AOV)
  - Revenue per Customer
  - Active Customer Count
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## CONCLUSION

The EDA demonstrates that sustainable growth will be achieved through **targeted optimization rather than broad expansion**. Improving order value, reducing returns, and mitigating concentration risk represent the highest-impact levers. The analysis provides a strong foundation for deeper customer segmentation and predictive modeling.