Ecommerce Sales Insights Report

Dataset: 10,000 transactions (2018–2019)
Domain: Retail / Ecommerce

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1. Overview

This analysis examines sales transactions from an ecommerce company over a two-year period. The goal is to clean raw transactional data, create a structured database, and perform exploratory and revenue-based analysis.

The report highlights **revenue drivers**, **customer behaviour**, **product performance**, and **strategic recommendations** to improve business performance.

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2. Data Preparation Summary

✔ Raw → Cleaned → Structured

The data was cleaned and standardized by:

- Converting inconsistent date formats

- Converting numerical columns (price, quantity) from text to numeric types

- Removing null or corrupted rows

- Splitting the dataset into **Transactions**, **Products**, and **TransactionDetails** (fact table)

- Handling negative quantities (returns)

This ensures accurate financial analysis and removes data quality issues.

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3. Key Insights & Analysis

3.1 Total Revenue

💰 **Total Revenue: 40,062,749.97**

A very strong revenue for a mid-sized ecommerce business. Most revenue is driven by **high-volume transactions** and a few **top-performing markets**.

3.2 Revenue by Country

🌍 **Top 5 Countries by Revenue**

Country	Revenue
United Kingdom	**33,436,960.12**
Netherlands	1,419,542.47
EIRE (Ireland)	1,076,634.07
France	834,664.84
Germany	851,335.61

Insight

- The **UK alone contributes 83%** of the total business revenue.
- The next top-performing markets are in European Union countries.
- Very low engagement from **UAE, USA, Bahrain, Brazil** etc.

Business Recommendation

✔ Focus marketing, logistics, and product promotions in the UK to maximize revenue.
✔ Explore market expansion strategies in EU countries like Netherlands and Ireland where revenue is also strong.
✔ Consider targeted campaigns in low-performing regions to test potential demand.

3.3 Monthly Sales Trend

📈 **Sales by Month**

Peak: **Nov 2019 – 5.59M**
Low: **Dec 2019 – 1.75M**

Key Observations

- Sales **steadily increase** from Jan to November every year.

- **Massive spike in September–November** indicates **holiday season demand** (Christmas, Black Friday).

- December drops sharply—likely because:

  - Orders placed in November

  - Inventory shortages

  - Shipping cut-off dates

Business Recommendation

✔ Increase inventory for fast-moving products from **August onward**.
✔ Launch promotions earlier (late August or early September).
✔ Strengthen supply chain and logistics during Q4.

3.4 Top 10 Products

🏆 **Best-Selling Products by Revenue**

1. **World War 2 Gliders – 568,085.85**

2. **Popcorn Holder – 620,385.50**

3. **Jumbo Bag Red Retrospot – 293,176.97**

4. **Paper Chain Kit Christmas – 250,829.54**

5. **Assorted Colour Bird Ornament – 263,861.80**

6. **Pack Of 72 Retrospot Cake Cases – 262,312.44**

7. **Cream Hanging Heart T-Light Holder – 218,989.82**

Product Insights

- High volume items are **low-cost, high turnover** household and decoration goods.

- Several Christmas products dominate revenue → **seasonal dependency**.

- Popcorn Holder & WW2 Gliders are top performers across months.

Business Recommendation

✔ Increase inventory for "staple" items like Retrospot Bags, Cake Cases, and Popcorn Holders.

✓ For seasonal items (Christmas kits) → increase stock only during Q3 & Q4.

✓ Bundle complementary products to increase average cart value.

3.5 Customer Analysis

Top Customers by Revenue

- **Customer 14646** → generated **1.39M** from **74 orders**

- The top 10 customers contribute a significant share of revenue.

Insight

- The business has strong **repeat customers** and **bulk purchasers**.

- Many customers from UK/EU have consistent purchasing patterns.

Business Recommendation

✓ Introduce loyalty programs for repeat buyers.

✓ Offer volume discounts to high-value customers.

✓ Create customer segments: high, medium, and low-value.

3.6 Average Order Value (AOV)

📦 **AOV = 1,726.54**

This indicates:

- Customers typically buy **multiple items per transaction**

- Possibly B2B or wholesale-style buyers

Business Recommendation

✓ Upsell & cross-sell to further increase order value

✓ Consider offering free shipping above certain thresholds (e.g., 1500)

3.7 Returns / Cancellations

📉 **Returns = 8,585 orders**

Loss Amount = -2,793,854.06

Very high return volume.

Possible Causes

- Low product quality

- Incorrect listings

- Damaged shipping

- Customer dissatisfaction

- Wrong product variants

Business Recommendation

✔ Investigate top products with negative quantity
✔ Improve product description clarity
✔ Ensure better packaging for fragile items
✔ Introduce quality control checks

Reducing returns even by **10%** can save **~280K per year**.

3.8 Repeat Customer Rate

🔄 **Repeat Customer Rate: 70.05%**

This is **excellent** for ecommerce.

Insight

- Business has a strong loyal base.

- Indicates good product experience or B2B recurring buyers.

Business Recommendation

✔ Implement email marketing to retain these customers
✔ Notify about new collections, seasonal offers
✔ Provide VIP pricing or early access during holidays

3.9 Peak Sales by Day of Week

🔢 **Highest Revenue Days**

1. **Sunday – 8.77M**

2. **Friday – 7.71M**

3. **Saturday – 7.58M**

Insight

- Weekends dominate sales.

- Customers likely browse in free time.

Business Recommendation

✓ Run weekend home-page discounts
✓ Launch new arrivals or mega offers on Friday/Sunday
✓ Increase ad spend on weekends

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4. Overall Business Recommendations

1. Strengthen UK-Dominant Operations

- Primary revenue is UK → optimize shipping, warehouse, promotions.

2. Reduce Returns

- This is one of the biggest revenue leaks.

- Check product categories with highest return rates.

3. Optimize Inventory for Peak Months

- Stock up from August onward.

- Create seasonal forecasts based on Q4 spikes.

4. Improve Low-Performing Countries

- Targeted marketing campaigns in UAE, USA, Bahrain, Brazil.

5. Focus on High-Revenue Customers

- CRM-based loyalty strategy

- Personalized offers

- Bulk purchase advantages

6. Promote Top-Selling Products

- Increase visibility

- Sponsored ads

- Bundle similar items

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5. Conclusion

This ecommerce dataset shows a strong, stable revenue stream driven by a loyal customer base and seasonal product demand. The UK remains the core market, while product returns and December sales drop are areas of concern.

By focusing on **inventory optimization**, **quality checks**, **customer retention**, and **targeted marketing**, the company can significantly improve annual revenue and reduce losses.