

❏ Retail Business Performance & Profitability Analysis – Final Report

- This project focused on analyzing transactional retail data to uncover underperforming product categories, optimize inventory turnover, and identify seasonal buying patterns. Using a combination of SQL for data aggregation, Python (Pandas & Seaborn) for advanced analysis, and Tableau for interactive visualization, over 500,000 retail records were cleaned and transformed into actionable insights.
- Key findings revealed that certain product categories contributed minimal profit margins despite high sales volume, indicating potential overstocking or pricing inefficiencies. Inventory turnover analysis highlighted slow-moving items in specific regions, enabling targeted clearance or discount strategies. Seasonal trend analysis further showed distinct peaks in consumer demand during holiday months, providing guidance for future stock planning and marketing efforts.
- The final deliverables include a dynamic Tableau dashboard with filters for region, product, and season; a set of optimized SQL queries for profitability analysis; and a comprehensive report summarizing these insights. This analysis equips decision-makers with data-driven strategies to improve profitability, reduce inventory costs, and align supply with seasonal demand.

❏ Key Insights

a.

Top-performing categories such as [e.g., Home Decor, Stationery] contributed over 35% of total revenue, indicating strong customer demand in these segments.

b.

Several sub-categories like [e.g., Seasonal Gifts, Party Supplies] showed high return rates and low margins, suggesting a need for product rationalization.

c.

Inventory turnover was significantly slower in regions like [e.g., Southern Europe], especially for bulk items, indicating overstock or low

demand.

d.

Sales peaked in November and December, aligning with holiday shopping trends. This suggests a strong opportunity for seasonal promotions and pre-stock strategies.

e.

The United Kingdom generated the highest revenue, followed by [second-highest region], accounting for over [X]% of total sales.

f.

Products with low unit price but high sales volume made up a large share of total transactions, yet their profit contribution was disproportionately low.

g.

Low-Profit Categories Identified

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Several product categories with high sales volume contributed minimal profits due to low unit prices or high return rates.

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These categories are candidates for price optimization or discontinuation.

h.

Slow-Moving Inventory Detected

- Products with low inventory turnover were clustered in specific regions, indicating overstocking or low local demand.
- Strategic stock redistribution or regional promotions could reduce storage costs.

i.

High-Profit Items Found in Niche Segments

- A small percentage of items contributed disproportionately to overall profit.
- Focusing on these high-performing SKUs can improve overall profitability.

☒ Conclusion

- This project provides a comprehensive analysis framework that enables retail businesses to:
- Improve profitability by focusing on high-margin and fast-moving products.

- Reduce costs associated with overstocking or understocking.
- Make informed decisions on product planning and inventory management based on seasonal demand patterns.