

Retail Profitability Analysis Report

1. Executive Summary

This report analyzes retail transaction data to uncover underperforming product categories, evaluate inventory efficiency, and identify seasonal trends. Insights were derived using SQL, Python, and Tableau visualizations.

2. Profitability Analysis

Profit margins were calculated by category and sub-category. Categories such as Technology showed high profitability, while Furniture had lower margins. Sub-categories like Copiers outperformed others significantly, while Tables underperformed with low or negative profit margins.

3. Inventory & Correlation Insights

Using Python (Pandas and Seaborn), correlation analysis revealed that higher inventory days are associated with lower profitability. Fast-moving products tend to be more profitable, emphasizing the importance of inventory optimization.

4. Seasonal Sales Trends

Sales patterns revealed seasonality, with peaks during Summer and the Holiday season (Q4). Certain products, such as Office Supplies, performed better during back-to-school months.

5. Strategic Recommendations

- Promote or discontinue low-margin, slow-selling products like Tables.
- Improve turnover by managing excess inventory.

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- Focus restocking efforts on high-margin items like Copiers before seasonal peaks.
- Use dashboard filters to tailor strategies by region and product type.

6. Appendix

Supporting materials include SQL queries, correlation plots, and Tableau dashboard screenshots. The interactive dashboard enables filtering by region, product type, and season for deeper exploration.