

# Retail Business Performance & Profitability Report (2020–2023)

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**Tools Used:** Python (Pandas, Numpy, Seaborn), SQLite, Tableau, .CSV file

**Dataset:** Retail Sales Dataset (913 transactions, 2020–2023)

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## Executive Summary

This report analyses the performance of a retail business from 2020 to 2023 using transactional data. The study covers key metrics such as sales, profit, product movement, seasonal trends, customer behaviour, and promotional impacts. The insights were visualized and published using Tableau dashboards with interactive filters and charts.

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## Key Performance Indicators (KPIs)

Metric	Value
Total Sales	\$47,983
Total Cost	\$26,317
Total Profit	\$21,664
Total Items	1515
Average Sales/Transaction	\$52.56
Average Profit/Transaction	\$23.73
Average Basket Size	2.95 items
Profit Margin (Sales)	45.31% (avg)

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## Data Insights & Findings

### ◆ Sales Trends

- Highest sales observed in **Winter and Fall seasons**.
- **Personal Care** and **Pantry & Snacks** dominated sales across all seasons.

### ◆ Product Category Profitability

- Top profitable categories:
  - **Home & Misc (47.1%)**
  - **Dairy (46.1%)**
  - **Vegetables (45.9%)**
- Top Sub-Categories:
  - **Dish Soap (51.2%)**
  - **Diapers (51.3%)**
  - **Lawn Mower (50.5%)**

### ◆ Customer Behavior

- Majority of purchases made by **Young Adult** and **Senior Citizen**.
  - Debit Card payment and Mobile Payment were the most preferred methods.
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### Inventory Analysis

#### Slow-Moving Products

- 168 products flagged as **slow-moving**, primarily in:
  - Personal Care
  - Pantry & Snacks
  - Cleaning Supplies

#### Overstocked & Low Margin

- 40 products identified as **overstocked with low profitability**.
  - Risk of tying up inventory capital in low-performing SKUs.
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### Strategic Opportunities

- Optimize inventory by reducing overstocked items.
- Focus marketing on high-margin categories.
- Deep-dive into underperforming store types or promotions.
- Introduce dynamic forecasting and demand planning.

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## ✅ Conclusion

The analysis reveals a strong overall performance with high profitability. However, strategic improvements in **inventory management**, **promotion targeting**, and **customer segmentation** can enhance operational efficiency and profit margins.