

# Retail Business Performance & Profitability Analysis

## Project Overview

This project analyses retail transactional data to evaluate business performance, identify profit-draining categories, and uncover sales and profitability trends. The analysis helps stakeholders make data-driven decisions to improve margins, optimize product strategy, and control discounting.

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## Objectives

- Identify high and low profit-generating product categories
  - Analyse loss-making sub-categories
  - Understand sales and profit trends over time
  - Evaluate the impact of discounts on profitability
  - Provide actionable business insights through an interactive dashboard
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## Dataset

**Source:** Sample Superstore Dataset

**Key Fields:**

- Order Date, Ship Date
  - Category, Sub-Category, Product Name
  - Sales, Quantity, Discount, Profit
  - Region, Segment, Customer Details
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## Tools & Technologies

- **SQL Server (SSMS):** Data cleaning, aggregation, profit calculations
  - **Power BI Desktop:** Data modeling, visualization, dashboard creation
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## Methodology

1. Imported retail data into SQL Server
  2. Cleaned data and handled null values
  3. Calculated total sales, total profit, and profit margins using SQL
  4. Connected SQL Server to Power BI
  5. Built interactive visuals with filters for Category, Segment, Region, and Year
  6. Highlighted loss-making sub-categories using conditional formatting
  7. Derived business insights from trends and patterns
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## Key Dashboard Features

- KPI Cards: Total Sales & Total Profit
  - Profit by Category and Sub-Category
  - Monthly Sales Trend Analysis
  - Profit Margin % by Category
  - Regional Profit Distribution (Map)
  - Loss-Making Sub-Categories Highlight
  - Interactive slicers for business exploration
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## Key Insights

- Technology is the highest profit-generating category
  - Furniture shows the lowest overall profitability
  - Sub-categories like Tables and Bookcases consistently generate losses
  - Sales show an upward trend in later months, indicating seasonality
  - Higher discounts do not always lead to higher profits
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## Deliverables

- Power BI Dashboard (.pbix)
  - SQL Queries (.sql)
  - 1–2 Page PDF Report
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## Conclusion

The analysis reveals clear opportunities to improve retail profitability by controlling discount strategies, reducing losses in underperforming sub-categories, and focusing on high-margin products. The Power BI dashboard enables quick and effective business decision-making.

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## Author

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