

Super Store Sales Performance Analysis

1. Executive Summary

The analysis demonstrates that sales volume alone is not a reliable indicator of business performance. While certain products, customers, and regions generate high revenue, profitability is highly sensitive to discount levels, product mix, and geographic performance.

Key findings indicate that discounts exceeding 15% consistently erode profit margins, with some sub-categories generating negative profit despite strong sales. Profitability varies significantly across regions and states, and high-volume customers or products are not always commercially viable when margin is considered.

The three-page Excel dashboard consolidates critical KPIs: **Total Revenue, Total Profit, Profit Margin, Orders, Quantity Sold, and Average Discount**, into an interactive executive view that supports faster, more informed decision-making.

2. Introduction & Project Context

The Super Store Sales Performance Analysis project evaluates historical retail sales data to uncover performance trends, profitability drivers, and operational insights that support data-driven decision-making. The analysis leverages a structured dataset sourced from Kaggle that provides a multi-year view of transactional sales activity in a retail business environment.

The project is positioned as a retail performance analytics case study, designed to simulate a real-world executive reporting scenario. It targets senior and operational stakeholders, including Sales Directors, Executive Leadership (CEO), and Business Managers, who require timely, accurate insights to monitor sales outcomes and guide strategic planning.

The dataset spans 2014 to 2017, providing sufficient historical depth to analyze trends over time, assess category-level performance, and evaluate changes in revenue and profitability. Using Excel Power Query and Power Pivot, the project delivers a three-page interactive dashboard that consolidates key metrics and presents them in a format suitable for executive review.

3. Problem Statement

Retail executives require clear visibility into sales and profitability performance across multiple business dimensions, including geography (state and region), customer segments, shipping modes, product lines, and individual customers, in order to allocate resources effectively and protect margins.

Before this analysis, performance insights were fragmented and non-actionable, making it difficult to identify which regions, products, and customer segments were driving sustainable profit versus those eroding margins. In particular, high sales volumes often mask low or negative profitability, limiting management's ability to make informed pricing and promotional decisions.

Without a centralized and margin-focused performance view, the business risks over-investing in low-margin products, excessive discounting, and inefficient operational strategies, ultimately impacting long-term profitability.

4. Data Dictionary & Data Understanding

Dataset Overview

- **Dataset Name:** Sales Data
- **Source:** Kaggle
- **Structure:** Single fact table
- **Granularity:** One row per order line item

Key Data Fields

Order Information

- Order ID: Unique identifier assigned to each customer order transaction.
- Order Date: Date on which the customer placed the order.
- Ship Date: Date the order was dispatched for delivery.
- Ship Mode: Shipping method used to fulfill the order (e.g., First Class, Second Class, Standard).

Customer Information

- Customer ID: Unique identifier assigned to each customer.
- Customer Name: Name of the customer associated with the order.
- Segment: Classification of customers based on business type or buying behavior.

Geographic Information

- Country: Country where the order was placed or delivered.
- Region: Broad geographic division used for regional performance analysis.
- State: State-level location of the customer or delivery destination.

Product Information

- Product ID: Unique identifier assigned to each product.
- Category: High-level grouping of products (e.g., Furniture, Technology, Office Supplies).
- Sub-Category: More granular classification within a product category.
- Product Name: Descriptive name of the product sold.

Sales Metrics

- **Sales:** Total revenue generated from the transaction before discounts and costs.
- **Quantity:** Number of units sold in the transaction.
- **Discount:** Percentage reduction applied to the listed product price.
- **Profit:** Net profit generated from the transaction after costs and discounts.

Data Preparation & Modeling

Data cleaning and preparation were performed using Excel Power Query, including:

- Identification and removal of duplicate records
- Elimination of redundant fields (Row ID, City, Postal Code)
- Validation and correction of data types

A calendar table was created to support time intelligence analysis. In Power Pivot, key DAX measures were developed, including:

- Total Revenue
- Total Profit
- Total Quantity
- Total Orders
- Profit Margin
- Average Discount

This data model enabled efficient slicing and analysis across time, geography, customer segments, and product hierarchies.

5. Key Insights

Seasonality and Margin Pressure

Sales peak in November and December across all years analyzed. However, these peak periods deliver below-average profit margins, indicating margin erosion driven by aggressive discounting.

Despite sales and profit from the previous year, the profit margin declined by 5.1% in the current year

Shipping Mode Performance

Second Class shipping generates the highest sales and total profit but records the lowest profit margin, highlighting cost-efficiency challenges within this fulfillment option.

Product Category Profitability Imbalance

The Furniture category drives the highest sales volume yet delivers a profit margin of approximately 2.5%, significantly underperforming other categories that achieve margins above 17%.

Customer Segment Dynamics

The Home Office segment records the lowest sales and profit but achieves the highest profit margin, indicating a smaller yet more efficient customer base.

Discount-to-Profit Relationship

Across products, customers, and regions, discounts above 15% consistently lead to margin compression or losses, confirming that high sales do not guarantee high profit.

Dashboard Structure

- **Page 1:** Executive overview – trends, geography, shipping mode performance
 - **Page 2:** Product analysis – category and sub-category profitability
 - **Page 3:** Customer analysis – segment performance and discount impact
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6. Recommendations

1. Implement Discount Threshold Controls

Cap standard discounts at 15%, with approvals required for exceptions to protect margins.

2. Shift Peak-Season Strategy Toward Margin Preservation

Adopt bundling and selective promotions during November–December to reduce profit leakage.

3. Optimize Furniture Category Pricing and Costs

Review pricing, supplier costs, and discounting within Furniture to improve margin contribution.

4. Improve Second-Class Shipping Cost Efficiency

Assess logistics costs and adjust pricing or minimum order thresholds to improve margins.

5. Expand Focus on High-Margin Customer Segments

Develop targeted strategies for the Home Office segment to grow revenue without compromising profitability.

7. Conclusion & Expected Outcome

The Super Store Sales Performance Analysis demonstrates the practical application of Excel-based analytics to solve real business problems. By combining Power Query for data transformation and Power Pivot for modeling and DAX, the project delivers an executive-ready dashboard that shifts focus from revenue tracking to profitability-driven decision-making.

This analysis confirms that the Super Store's profitability challenges are structural, measurable, and solvable.

By focusing on:

- Margin-controlled discounting ($\leq 15\%$) to prevent profit erosion
- High-margin product categories and customer segments (e.g., Home Office segment)
- Targeted optimization of underperforming areas (Furniture category, Second Class shipping, peak-season promotions)

Management can expect:

- Improved overall profit margins without sacrificing revenue growth
- Reduced incidence of loss-making transactions, particularly during peak sales periods
- More efficient allocation of sales, pricing, and operational resources
- A scalable, margin-driven retail performance framework aligned with data-led decision-making best practices