Superstore Sales

**Dataset:** <https://www.kaggle.com/datasets/vivek468/superstore-dataset-final?select=Sample+-+Superstore.csv>

## Problem Statement

**Problem:**  
The regional sales team at a large retail chain is struggling to understand which products and markets are driving profits, and which are hurting performance. Despite high sales volume, profit margins are inconsistent, and inventory is not always aligned with demand. The management team needs a clear, data-driven dashboard to uncover performance trends, identify growth opportunities, and flag problem areas across product categories and geographic regions.

**Objective:**  
Build a dynamic Excel dashboard that allows stakeholders to interactively explore sales, profit, and quantity trends by category, sub-category, and region. The dashboard should highlight key drivers of performance and uncover areas for strategic action.

## Business Questions

1. Which regions are generating the most sales and profit?
2. Which product categories and sub-categories are most and least profitable?
3. How do sales and profits vary over time (monthly/quarterly)?
4. Are there any product segments where high sales don’t translate to high profit?
5. Which customer segments contribute most to revenue?
6. What is the average discount rate, and how does it affect profitability?

## Key takeaways from the data analysis

1. **Top-Performing Regions (Sales & Profit)**
   * West leads in both sales ($725K) and profit ($108K).
   * East and Central follow, with South having the lowest sales and profits.
   * Profitability does not scale linearly with sales (e.g. Central has higher sales than South but lower profit).
2. **Most and Least Profitable Categories**
   * Most Profitable Category: Technology (~$145K profit)
   * Least Profitable Category: Furniture (~$18K profit)
   * **Sub-Categories:**
     1. Top Performers:
        1. Copiers (~$56K profit)
        2. Phones (~$45K)
        3. Accessories (~$42K)
     2. Worst Performers:
        1. Tables (−$17.7K)
        2. Bookcases (−$3.5K)
        3. Supplies (−$1.2K)
3. **Sales & Profit Trends Over Time**
   * Quarterly: Strong sales in Q4 each year, especially Q4 2017 (~$211K in sales).
   * Monthly: Spikes in November and December; dips in early months (Jan–Feb).
   * Profit generally follows sales but with some divergence (e.g., losses in July 2014 and April 2017 despite decent sales).
4. **High Sales, Low Profit Segments**
   * Chairs: ~$328K in sales but only ~$26.5K profit (low 8% margin)
   * Machines: $189K in sales but very low profit ($3.3K)
   * Tables: High sales (~$207K) but negative profit (−$17.7K)
5. **Top Revenue-Contributing Customer Segments**
   * Consumer segment dominates with ~$1.16M in sales.
   * Followed by Corporate ($706K) and Home Office ($430K).
6. **Discount Insights**
   * Average Discount: ~15.6%
   * Profitability drops sharply as discount increases:
     1. No discount: ~67 profit units
     2. 10%: ~96
     3. 30%: −46 (significant losses)
   * Conclusion: Moderate discounts (≤10%) improve sales without heavily damaging profit. Higher discounts (≥30%) are unprofitable.

## Key Business Insights + Actionable Recommendations

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| **Observation** | **Insight** | **Recommendation** |
| **High Sales ≠ High Profit** | Some product sub-categories (e.g., Tables or Bookcases) had high sales volumes but negative or very low profit margins. | * Reevaluate pricing strategy or sourcing costs for these sub-categories. * Consider reducing discounts or bundling with higher-margin products |
| **Technology Category Drives Most Profit** | Technology contributes a disproportionately high share of overall profit compared to Furniture or Office Supplies. | * Increase marketing spend or targeted promotions for Technology products. * Expand inventory or vendor partnerships in high-margin tech sub-categories like Phones and Accessories. |
| **The West Region Has the Highest Revenue** | The West outperforms other regions in terms of revenue and growth, but its profit margins are inconsistent. | * Deep-dive into sub-regional performance (state or city level) to identify high-cost fulfillment or shipping zones. * Adjust shipping/warehouse strategies or offer region-specific discounts. |
| **Q3 Dip in Profit Despite Stable Sales** | There is a noticeable dip in profit during Q3 (Jul-Sep), even though sales remain relatively stable. | * Investigate Q3 promotions or returns policy; could be due to over-discounting. * Consider inventory turnover and seasonal marketing efficiency for Q3 campaigns. |
| **Discounts Erode Profit Margins** | Average discounts are highest in unprofitable product lines. Sub-categories with 20%+ average discounts often show negative profits. | * Set discount ceilings for low-margin categories. * Shift to loyalty-based or targeted discount strategies instead of blanket markdowns. |
| **Low Quantity Orders in High-Margin Segments** | High-margin categories (e.g., Phones, Copiers) have relatively low order quantities. | * Bundle with accessories or offer B2B quantity deals to increase order sizes. * Upsell and cross-sell in these high-profit segments. |