

✓ 1. E-Commerce Sales Analysis

 **Dataset:** [Superstore Sales Dataset \(Kaggle\)](#)

This is a classic real-world dataset with sales, profit, region, products, discounts, and customers.

Questions to Answer:

1. Which **product categories** generate the most revenue?
2. Which **states/regions** are most profitable and which are loss-making?
3. Does **discount rate** affect profit negatively or positively?
4. What are the **top 10 customers** based on total sales?
5. Are there any **seasonal trends** in sales over months/quarters?

Steps

1. Clean data using excel and python
2. Analyse it
3. Download cleaned data
4. Stored findings
5. Load clean data on power BI and make visualization
6. Make Document to tell story

Answers:

1. Which product categories generate the most revenue?

Technology generates most revenue which is \$ 836154. Sub-category wise phones generate large revenue. It seems that technology products are compact in size. Therefore shipping cost is much lower and selling cost is higher.

2. Which states/regions are most profitable and which are loss-making?

West region is most profit making with \$808418 total profit and 0.149448 profit margin. This indicates proximity of region with vital airports and harbours caused reduction in shipping cost increasing profit margin.

3. Does discount rate affect profit negatively or positively?

Discount rates beyond 20% are affecting profit negatively.

4. What are the top 10 customers based on total sales?

Based on Profit

Customer	Total Profit
Tamara Chand	8981.3239
Raymond Buch	6976.0959
Sanjit Chand	5757.4119
Hunter Lopez	5622.4292
Adrian Barton	5444.8055
Tom Ashbrook	4703.7883
Christopher Martinez	3899.8904
Keith Dawkins	3038.6254
Andy Reiter	2884.6208
Daniel Raglin	2869.0760

Based on profit margin

Customer Name	Sales	Profit	Profit Margin
Jenna Caffey	1058.108	502.9244	0.475305
Tamara Chand	19052.218	8981.3239	0.471406
Raymond Buch	15117.339	6976.0959	0.461463
Steven Roelle	4345.886	1990.4244	0.458002
Bobby Odegard	130.830	59.4522	0.454423
Hunter Lopez	12873.298	5622.4292	0.436751
Andy Reiter	6608.448	2884.6208	0.436505
Christopher Martinez	8954.020	3899.8904	0.435546

Ivan Gibson	744.574	320.4982	0.430445
Roy Skaria	22.328	9.5838	0.429228

Only 3 customers out of top 10 based on total profit are present in top 10 profit margin giving customers. I shows big customers in terms of sales rely more on discounts.

5. Are there any seasonal trends in sales over months/quarters?

Why Q4 Sales Are Exponentially High (US Context)?

1. Holiday Shopping Season (BIGGEST DRIVER)

Q4 includes:

- Thanksgiving
- Black Friday
- Cyber Monday
- Christmas
- New Year gifting

Massive increase in consumer spending, especially:

- Retail
- E-commerce
- Electronics
- Apparel

Common Reasons for Q2 / Q3 Dip in US Sales Data

1. Seasonality & Consumer Behavior (Very Common)

- **Q2 (Apr–Jun)**
 - Post-tax season slowdown (after April tax filings)
 - Consumers reduce discretionary spending
- **Q3 (Jul–Sep)**
 - Summer vacations → lower B2B & office activity

- Decision-makers on leave
 - Retail focus shifts to back-to-school only
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2. Strong Q4 Pull Effect (Biggest Reason)

Heavy sales concentration in:

- **Thanksgiving**
 - **Black Friday**
 - **Cyber Monday**
 - **Christmas**
- Customers delay purchases waiting for **Q4 deals**
This makes Q2/Q3 look weaker in comparison.