

Harpartap Singh - EDA Report

1. Exploratory Data Analysis (EDA):

Data Overview:

Customers Dataset: Contains 200 unique entries detailing customer demographics, including regional distribution and signup timelines.

Products Dataset: Comprises 100 distinct products across various categories, such as Electronics, Home Decor, and Books.

Transactions Dataset: Encompasses 1,000 transactions capturing purchase-related attributes, such as product preferences and purchase frequency.

2. Key Analytical Findings:

1. Temporal Analysis of Customer Signups:

- Signups show a steady upward trend with seasonal spikes due to promotions.
- South America has the highest signups at 29.5% of the customer base.
- The peak growth period was in Q3 2023, correlating with marketing efforts.

2. Analysis of Product Sales Performance:

- Electronics and Home Decor dominate, contributing 58% of total revenue.
- The top 10 products account for 40% of cumulative revenue.
- The best-selling product, 'TechPro T-Shirt,' represents 8% of total sales.

3. Regional Revenue Distribution:

- South America generates 35% of total revenue, followed by Asia (28%).
- North America has the lowest revenue share at 15%, indicating expansion opportunities.

4. Pricing Structure Insights:

- Most products are priced between \$100-\$400, targeting mid-tier customers.
- Low-priced items (< \$100) contribute minimally to overall revenue.

5. Identification of High-Value Customers:

- The top 20% of customers contribute to 75% of total sales.
- High-value customers predominantly purchase Electronics and Home Decor.

Strategic Business Recommendations:

1. Expand marketing efforts in underperforming regions like North America.
2. Diversify the product portfolio focusing on high-demand categories.
3. Introduce loyalty programs targeting high-value customers.
4. Align promotional campaigns with seasonal demand trends.
5. Implement dynamic pricing strategies to capture broader market segments.

