

Business Insights from Exploratory Data Analysis (EDA)

1. Sales Over Time

OBSERVATION: The sales trends for the year 2024 fluctuate significantly over time, showing no consistent increase or decrease. The highest sales have been achieved in the months, July and September. Lowest sale has been in November but is immediately followed by an increase in the month of December.

INSIGHT: There is a need to investigate the factors behind sales peaks and lows so that marketing strategies, discounts, bundled offers, etc. can be implemented.

2. Top 10 Popular Products

OBSERVATION: The top 10 products reflect the quantities of the products sold. Electronics items such as ActiveWear Smartwatch, SoundWave Headphones top the list. The top 10 sold products quantities range from 65 to 100 units.

INSIGHT: There is a significant interest for wearable technology and lifestyle products. Product ranges within these categories can be increased to promote additional purchases.

3. Popular Categories

OBSERVATION: All four categories have relatively similar sales volumes, ranging between 600 and 700 units.

INSIGHT: This balanced sales volumes across all categories suggests that customers have a diverse range of interest and there is no one category that is preferred over others. This directly translates to the fact that the overall product range is well balanced and the business should continue with offering product ranges from all categories.

4. Regional Sales Distribution

OBSERVATION: South America leads with over \$ 200,000 in sales, followed by Europe with \$150,000. North America and Asia both contribute \$150,000 each.

INSIGHT: South America shows strong market demand, while North America and Asia present opportunities for growth. Targeted marketing and product strategies, particularly in Asia's emerging markets, could help capture more sales.

5. Repeat Purchase Trends

OBSERVATION: Only 12 customers are one-time buyers, while over 175 are repeat buyers. Most repeat customers have spent between \$1,500 and \$8,000, with only one customer spending over \$10,000. In terms of product category sales, Books lead with total sales exceeding \$175,000, while Home Decor has the lowest sales at nearly \$150,000.

INSIGHT: The business has a strong base of repeat customers, indicating loyalty. To further drive sales, targeting repeat buyers with tailored offers in top categories like Books could enhance revenue. Focusing on boosting Home Decor sales may also present growth opportunities.