

# **Business Insights from Exploratory Data Analysis (EDA)**

## **1. Top-Selling Products Drive Revenue**

The analysis of transaction data reveals that certain products, such as P059 and P054, are consistently among the top-selling items. These products have a high purchase frequency, indicating strong customer demand. Maintaining adequate inventory levels for these items is crucial to avoid stockouts. Additionally, further analysis can be done to understand customer preferences and identify opportunities to introduce similar products to boost sales.

## **2. Wide Price Range with Peaks at Specific Intervals**

The price distribution of products spans from approximately \$16 to \$497, with distinct peaks around \$150, \$300, and \$400. This suggests that customer purchasing power varies significantly, and different pricing segments appeal to different groups. Businesses can leverage this insight by offering targeted promotions, bundling options, and discounts on mid-range products to maximize conversions while maintaining premium pricing for high-end items.

## **3. Even Distribution of Frequent Customers**

The analysis of frequent customers suggests that transactions are well-distributed among multiple buyers, with no single customer dominating purchases. This indicates a diverse and broad customer base. To capitalize on this trend, businesses can implement personalized marketing campaigns, offer exclusive loyalty programs, and use recommendation systems to increase repeat purchases and customer retention.

## **4. Strong Correlation Between Price and Total Sales Value**

The correlation matrix analysis shows a significant positive correlation (0.72) between product price and total sales value. This suggests that higher-priced products contribute significantly to overall revenue. However, the low correlation between price and quantity sold indicates that demand is not strictly price-sensitive. This insight can help businesses set pricing strategies that balance profitability while maintaining competitive pricing to attract more customers.

## **5. Inventory and Pricing Optimization Needed**

Given the correlation trends and product demand insights, businesses should optimize their inventory levels based on revenue contribution rather than just sales volume. High-revenue products should be stocked adequately, while lower-priced but high-selling products may benefit from upselling strategies or bundling with complementary items. Additionally, dynamic pricing models can be explored to maximize profits based on demand fluctuations.

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## **Conclusion**

The EDA conducted on Zeotap's datasets provides actionable insights that can drive better business decisions. By optimizing inventory, refining pricing strategies, and implementing targeted marketing campaigns, businesses can enhance revenue growth and customer satisfaction. Further deep dives into customer segmentation and product performance can uncover additional revenue-generating opportunities.