

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

### **1. Transaction Value Distribution:**

- Most transactions are valued under \$1000, but a small number of high-value transactions exceed \$1900.
- This suggests a subset of customers prefers premium products or bulk purchases, indicating a potential market for high-end offerings.
- The company can introduce premium membership or exclusive deals for high-value customers to increase engagement and loyalty.

### **2. Popular Products:**

- A few products dominate sales, with the top five products making up a significant percentage of transactions.
- The company should optimize inventory and marketing efforts around these high-selling products.
- Seasonal trends could also impact product demand, so analyzing time-based purchase patterns may help in inventory planning.

### **3. Regional Sales Trends:**

- Certain regions contribute more transactions than others, suggesting varied demand across geographic locations.
- Focused regional marketing strategies could enhance customer engagement in underperforming areas.
- Understanding regional preferences can help in product localization and personalized advertising.

### **4. Customer Purchasing Behavior:**

- Customers exhibit different spending habits, with some frequently purchasing while others make one-time transactions.
- Personalized promotions based on purchase history can improve retention and revenue.
- Encouraging repeat purchases through email campaigns, loyalty rewards, or personalized discounts can boost sales.

### **5. Signup Date Impact on Transactions:**

- Customers who have been signed up longer tend to make more transactions, implying customer loyalty and retention benefits.
- Implementing loyalty programs could further enhance repeat purchases and customer lifetime value.
- A referral program can be introduced to leverage existing customers in bringing new users, increasing the overall customer base.