Business Insights from EDA

Objective

The purpose of this analysis is to explore customer, product, and transaction data to derive actionable business insights. By understanding customer behavior, product performance, and sales trends, we aim to identify opportunities for growth and improvement.

Methodology

1. **Data Preparation**: Imported and cleaned datasets (Customers.csv, Products.csv, Transactions.csv). Handled missing values, converted date columns to datetime format, and merged datasets for comprehensive analysis.

2. **Exploratory Data Analysis**: Analyzed customer demographics, product performance, and transaction trends using descriptive statistics and visualizations.

3. **Key Metrics**: Focused on customer distribution, product popularity, revenue trends, and average order size and value.

4. **Visualization**: Created bar charts, line graphs, and summary tables to present findings effectively.

Insights

1. **Regional Customer Distribution**:
   o The majority of customers are from the South Africa Region contributing significantly to overall sales. This indicates a strong market presence in this region and potential for targeted marketing strategies.

2. **Customer Signup Trends**:
   o Signup trends over time show consistent fluctuations with notable spikes in January 2023 and July 2024, as observed in the "Signup Trends Over Time" graph. These may be influenced by seasonal promotions or campaigns.

3. **Best-Selling Products**:
   o The "ActiveWear Smartwatch" is the most popular product, followed by "SoundWave Headphones" and "HomeSense Desk Lamp," based on the "Top 10 Popular Products" bar chart. This highlights strong demand for tech and home-related products.

4. **High-Value Product Categories**:
   o Products in the [Category] category have the highest average price. While profitable, analyzing sales volume and customer feedback can help balance pricing strategies with accessibility.

5. **Revenue Trends and Seasonal Insights**:
   o Revenue trends, shown in the "Revenue Trends Over Time" chart, peak in March and November 2024, suggesting strong seasonal sales periods. These months are ideal for running targeted promotions or launching new products.