



TASK 1: EXPLORATORY DATA ANALYSIS (EDA) AND BUSINESS INSIGHTS

Business Insights Report

Done by:

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The business insights that can be derived from the EDA and Visualizations performed are as given below: (Note: All plots are available in the IPYNB file)

1. Distribution of High-Value Customers by Region:

- a. Purpose: Identify regions with more high-paying customers helping target regions with higher potential ROI.
- b. Insights:
 - i. The “South America” region is a potential region with high-value customers due to its higher median revenue per customer
 - ii. Additionally, “Europe” and “North America” also show potential customers due to the presence of outliers

2. Region-Specific Product Demand:

- a. Purpose: Identify region-specific product preferences
- b. Insights:

Region	Demanded Product
Asia	Clothing
Europe	Books
North America	Electronics and Books
South America	Books

3. Time-Based Revenue Heatmap

- a. Purpose: Pinpoint peak times for revenue generation to optimize operations or marketing
- b. Insights:
 - i. The hourly-revenue is the highest on Wednesday from 4:00 PM
 - ii. Also, Wednesday has 2 spikes in revenue on an hourly basis – Making it an important day for revenue generation

4. Product Category Contribution over time

- a. Purpose: Understand trends in product category performance over time and identify seasonal patterns
- b. Insights:
 - i. There are seasonal spikes in demand for “Books” in February and May
 - ii. Similarly, there are also seasonal spikes for “Electronics” from July to September

5. Seasonality in Transactions

- a. Purpose: Identify seasonal trends in customer activity and revenue generation.
- b. Insights:
 - i. There is a spike in number of transactions from July to September

6. Most purchased products

- a. Purpose: Identify the trending products as per customer transactions
- b. Insights:
 - i. The most purchased product (P059) is of type “Clothing”
 - ii. Products from “Books” and “Home-Decor” are the most frequent in the “Most Purchased Product” list