



DATA SCIENCE INTERN ASSIGNMENT | ZEO TAP

ASSIGNMENT NUMBER – 1

Topic - Exploratory Data Analysis (EDA) and
Business Insights

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Task 1: Exploratory Data Analysis (EDA)

and Business Insights

EDA - Exploratory Data Analysis (EDA) examines and visualizes data to understand its main characteristics, identify patterns, spot anomalies, and test hypotheses. It helps summarize the data and uncover insights before applying more advanced data analysis techniques.

Top business insights –

1. Regional Performance Insight –

South America leads in customer transactions with **304 transactions**, showcasing strong market presence and engagement. This region offers significant revenue potential, and efforts should focus on maintaining this performance through targeted promotions, localized marketing strategies, and inventory optimization. Additionally, explore opportunities to grow transaction volumes in Asia and Europe, which have comparatively lower contributions.

2. Category Contribution Insight –

Books is the leading product category, accounting for the highest transaction count (**270 transactions**) and generating the highest total sales (**\$192,147.47**). This indicates a strong customer preference for literary products. To capitalize on this trend, consider expanding the book collection, introducing exclusive book bundles, and running targeted promotions to enhance customer engagement and revenue.

3. Seasonal Trends –

I. **High-Performance Months:**

July, September, and January 2024 are the best months for sales and transactions.

Focus marketing efforts and ensure sufficient inventory during these months to capitalize on high demand.

II. **Low-Performance Months:**

December 2023 and November 2024 have the lowest activity. Introduce promotions, discounts, or bundle deals to stimulate sales during these off-peak months.

III. **Growth Opportunities:**

While **December 2023** has minimal activity, **December 2024** sees an improvement in both transactions (**78 transactions**) and sales (**\$59,049.20**). Leverage holiday season promotions to further boost year-end performance.

4. Product-Level Insights –

The **Activewear Smartwatch** stands out as the most popular product, with **40 transactions**, showcasing strong customer demand for wearable technology

Furthermore, it leads in revenue generation, contributing \$39,096.97 to total sales, followed by the Sound Wave Headphones with 38 transactions and \$25,211.64. Books, especially the Cookbook (\$19,221.99), show strong potential, while products like the Activewear Rug, Jacket, and Sound Wave Novel (\$24,507.90) highlight demand for premium items. Leveraging top-sellers, expanding categories, and running targeted promotions can boost growth and profitability.

5. Customer Signup Trends and Insight –

- I. **Peak Signup Periods:** September 2024 recorded the highest signups (58), likely driven by seasonal campaigns. Other strong months include May 2022 (57) and April 2024 (48). These months demonstrate the effectiveness of marketing during high-activity periods.
- II. **Low Signup Periods:** December 2024 (5 signups) and July 2023 (12 signups) had the least activity, suggesting untapped potential during these months.
- III. **Yearly Growth Patterns:** Signups increased steadily from 2022 to 2024, reflecting a growing customer base.
- IV. **Seasonal Trends:** Peaks in spring (April/May) and late summer (September) suggest opportunities for targeted promotions during these periods.
- V. **Actionable Opportunities:** Strengthen marketing for off-peak months like July and December, while doubling down on high-performance periods.

Thank You!