

# Business Analytics Project 1

## Country Sales Dataset Analysis Insights

Prudhvi Narayana Divi

NAU ID: 6255352

### Introduction

This report presents the findings and insights from our business analytics project. We have analyzed sales data to gain a better understanding of sales trends, distribution, and other key metrics. The following sections outline our analysis and highlight the key insights.

### Dataset Information

Loaded the dataset from the file `sales\_country\_data.csv` and performed initial data exploration using the following functions:

- `data.head(10)`: Displayed the first 10 rows of the dataset.
- `data.shape`: Determined the shape of the dataset.
- `data.dtypes`: Examined the data types of each column.
- `data.describe()`: Provided summary statistics for numerical columns.

### Sales Distribution

Visualized the distribution of sales using a histogram and custom bins. Here are some key points:

- The majority of sales fall between \$50,000 and \$300,000.
- From histogram, I found that most of the sales occurred between 200k to 250k.

### Discounts Distribution

Visualized the distribution of discounts with a histogram and custom bins. Key points include:

- Most discounts range between 0% and 10%.
- The histogram helps us understand that most of the customers have bought the items which accounted for the discount from 0 to 0.025%

## **Yearly Sales**

Converted the 'year' column to datetime type and analyzed yearly sales. Key insights:

- Yearly sales have been increasing steadily over the years.
- 2022 had the highest sales with 236,034,250.

## **Monthly and Daily Sales**

Grouped data by 'month' and 'day' and calculated total sales for each combination. Key insights:

- The highest daily sales occurred on December 30 with the number of sales being 2015750.

## **Monthly Sales**

Grouped data by 'month' and analyzed monthly sales. Key insights:

- The month with the highest number of sales is December with 45862500.
- The month with the lowest number of sales is February with 28430500.

## **Country Sales**

Grouped data by 'country' and calculated total sales for each country. Key insights:

- The country with the highest sales is United States with 159724250.
- The country with the lowest sales is Canada with 145685750.

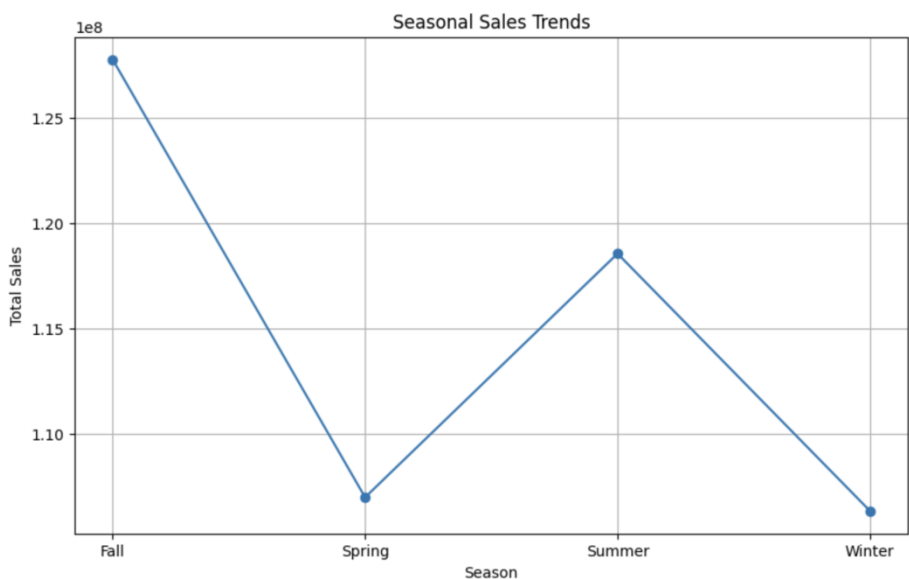
## **Seasonal Sales Analysis**

Categorized data into seasons and analyzed seasonal sales trends. Key insights:

- Fall has the highest total sales.
- Winter has the lowest total sales.

Key Visualization:

From the provided visual, we can observe a seasonal pattern in sales behavior. Sales exhibit a decline during the spring and winter seasons but progressively rise throughout the summer. Notably, during the fall season, sales peak, reaching a substantial total of over \$127,746,000. This analysis underscores the impact of seasons on sales trends, highlighting a distinct and predictable seasonal variation in purchasing patterns.



Conclusion

In conclusion, some important insights are revealed by examining the sales dataset. Most sales are distributed between \$50,000 and \$300,000, peaking between \$200,000 and \$250,000. Most discounts fall between 0% and 10%, with an emphasis on lower numbers. Annual sales have been increasing steadily, reaching a high of \$236,034,250 in 2022. The highest daily sales ever were \$2,015,750 on December 30. The biggest sales were recorded in December at \$45,862,500, while the lowest were recorded in February at \$28,430,500. With \$159,724,250 in sales, the United States tops all other nations, while Canada has the lowest amount at \$145,685,750. The peak season for sales is fall, while

winter sees the lowest totals. This report highlights how seasonality affects sales trends, highlighting the customer behavior.