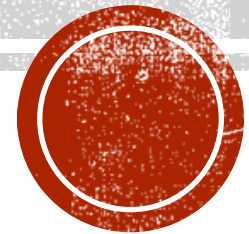# SALES AND PROFITABILITY ANALYSIS

FINANCIAL SAMPLE DATASET
OLADIPO OLAJUMOBI DIVINE

DATASET OVERVIEW

- **Name:** Financial Sample

- **Source:**
  https://www.kaggle.com/datasets/konstantinognev/financial-samplexlsx

- **Size:** 701 records × 16 columns

- **Key Variables (columns):**
  - Segment: This includes the type of customers the product is sold to. They are Channel Partners, Government, Midmarket, Enterprise, and Small Business.
  - Product: Amarilla, Carretera, Montana, Paseo, Velo, VTT
  - Country: Canada, France, Germany, Mexico, United States of America
  - Discount Band: None, Low, Medium, High
  - Financial Metrics: Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, COGS (Cost of Goods Sold), Profit
  - Date: Date, Month Number, Month Name, Year (2013-2014)

1. Which Product and Segment Combination is the most profitable for the company?

2. How do Discount Bands affect Profit Margins? Is there an optimal discount level?

3. What are the monthly sales trends over the years, and are there any visible seasonal patterns?

RESEARCH QUESTIONS

DATA CLEANING SUMMARY

- The dataset is remarkably clean and ready for analysis.

- There are zero missing values and errors in each of the columns.

- The data types for each column seem appropriate, columns that need to be strings are strings, numbers are numbers, and date is date.

- There are no obvious typos in the categorical fields (Segment, Country, Product, Discount Band)

- OUTLIERS:
  - There are 58 negative transactions in the Profit column: These are real business losses (not errors)
  - The Unit Sold column ranges from 214 to 4,492.5: This is a wide variation, there are just 24 values in the column that are greater than 3000. This is actually plausible for different order sizes.
  - The Manufacturing Price Column ranges from $3 to $260: This is a large spread, but it is plausible as it shows the actual product cost differences.
  - The Sale Price column ranges from $7 to $350: The jump from $125 to $300/$350 is significant. This is plausible as there can be a lot of factors that affect a product's sale price, such as, advertisement and transportation cost.
  - Since all these data points tell the true story of the business, all records are maintained as they represent valid business scenarios.
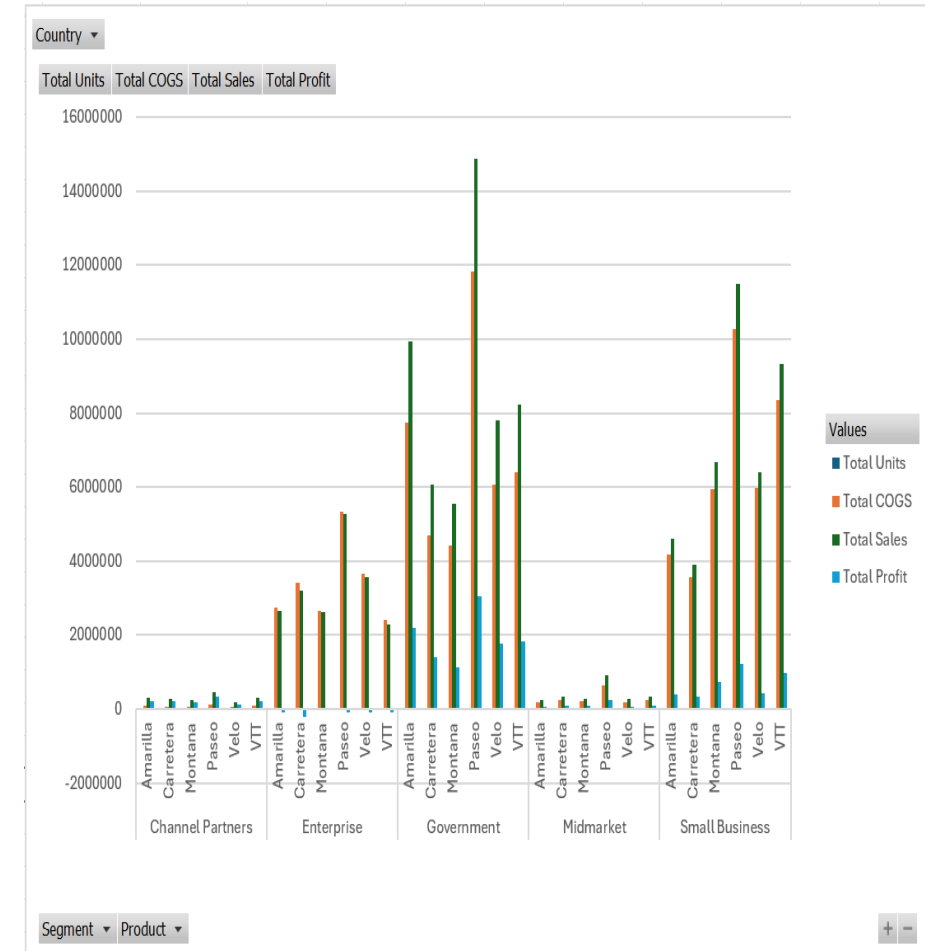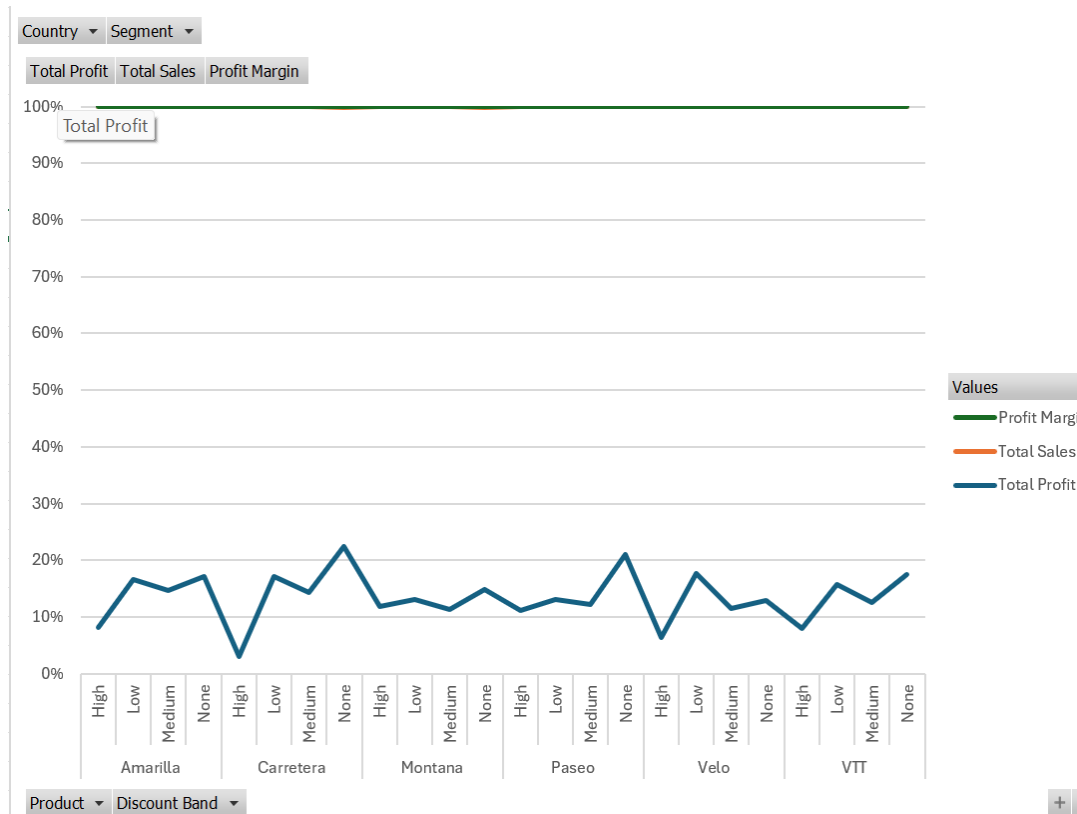
MOST PROFITABLE SEGMENTS

- KEY INSIGHTS:
  - Across all countries, the most profitable segment is the Government segment (total profit of $11,388,173.17), with the Paseo product being the most profitable (total profit of $3,057,290.7).
  - But across each country, only Canada, Mexico, and the United States of America have the Paseo product as the most profitable product in the government segment.
  - France and Germany have the Paseo product as their third most profitable product, and the Amarilla product and Velo product as the most profitable in the Government segment.
  - France is the most profitable company across all products and segments, with a total profit of $3,781,020.78.
- RECOMMENDATIONS:
  - Increase sales focus on the Government segment and the Paseo product (for Canada, Mexico, USA), Amarilla product (for France), and Velo product (for Germany).
  - Replicate the successful strategy of France in similar markets, especially the Velo product.
  - Review underperforming segments and reallocate resources.

DISCOUNT IMPACT ON MARGINS

- **KEY INSIGHT:**
  - From the chart, the None and Low discount bands have the highest profit margin, while the High discount band has the lowest profit margin.
- **RECOMMENDATION:**
  - Use Low discounts to boost sales without destroying margins.
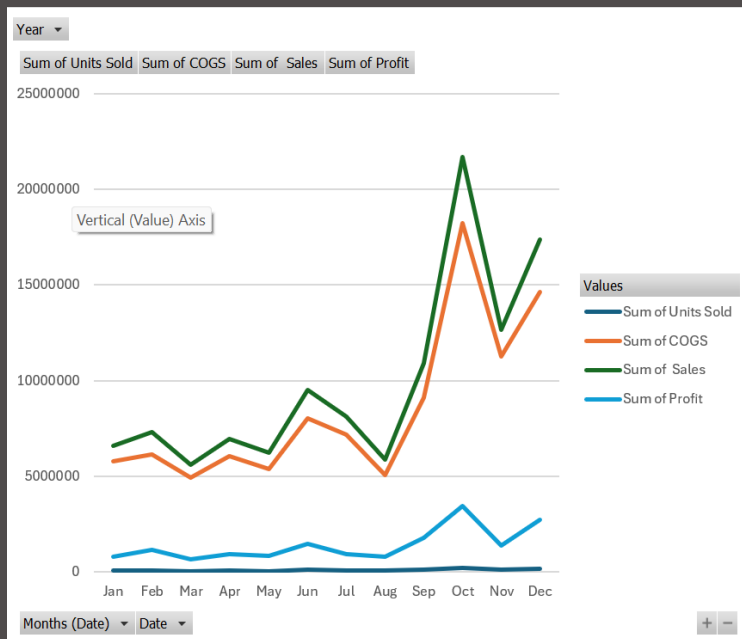 - Avoid High discounts, as they severely hurt profitability.

MONTHLY SALES TRENDS

- KEY INSIGHTS:
  - Across both years, October has the highest sales, units, and profit.
  - December is the second highest, with November being the third.

- RECOMMENDATIONS:
  - Plan major campaigns for August and September to capitalize on the October, November, and December Peaks.

BUSINESS RECOMMENDATIONS

KEY CONCLUSIONS:

- The Government segment purchasing Paseo product is the most profitable combination.

- Low discount bands optimally balance sales volume and profit margins.

- Our business has predictable, strong peaks in October, November and December.

ACTION ITEMS:

Prioritize account management and lead generation for the Government segment.

Highlight Paseo as a flagship product in marketing campaigns.

Standardize the use of Low discounts as the primary promotional tool.

Restrict the approval process for Medium and High discounts.

Plan major marketing campaigns to launch before the October, November, and December peaks.

LIMITATIONS AND FUTURE WORK

LIMITATIONS:

- The dataset has a small time frame of two years (with only 16 months out of the two years.)

- The dataset has no cost of marketing data.

FUTURE WORKS:

- Get a dataset that will address the limitations by:
  - Getting a dataset with larger timeframes.
  - Including the cost of marketing to the data, like inventory, advertisement, transportation, etc.
- Use visualization tools like Power BI to create a sales dashboard for predictive analysis.

THANK YOU

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