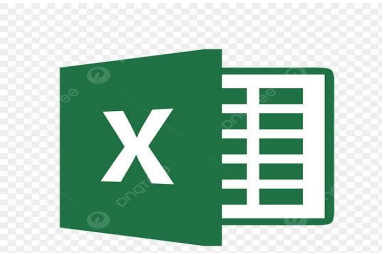
Financial Data Analysis Using Excel



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Introduction

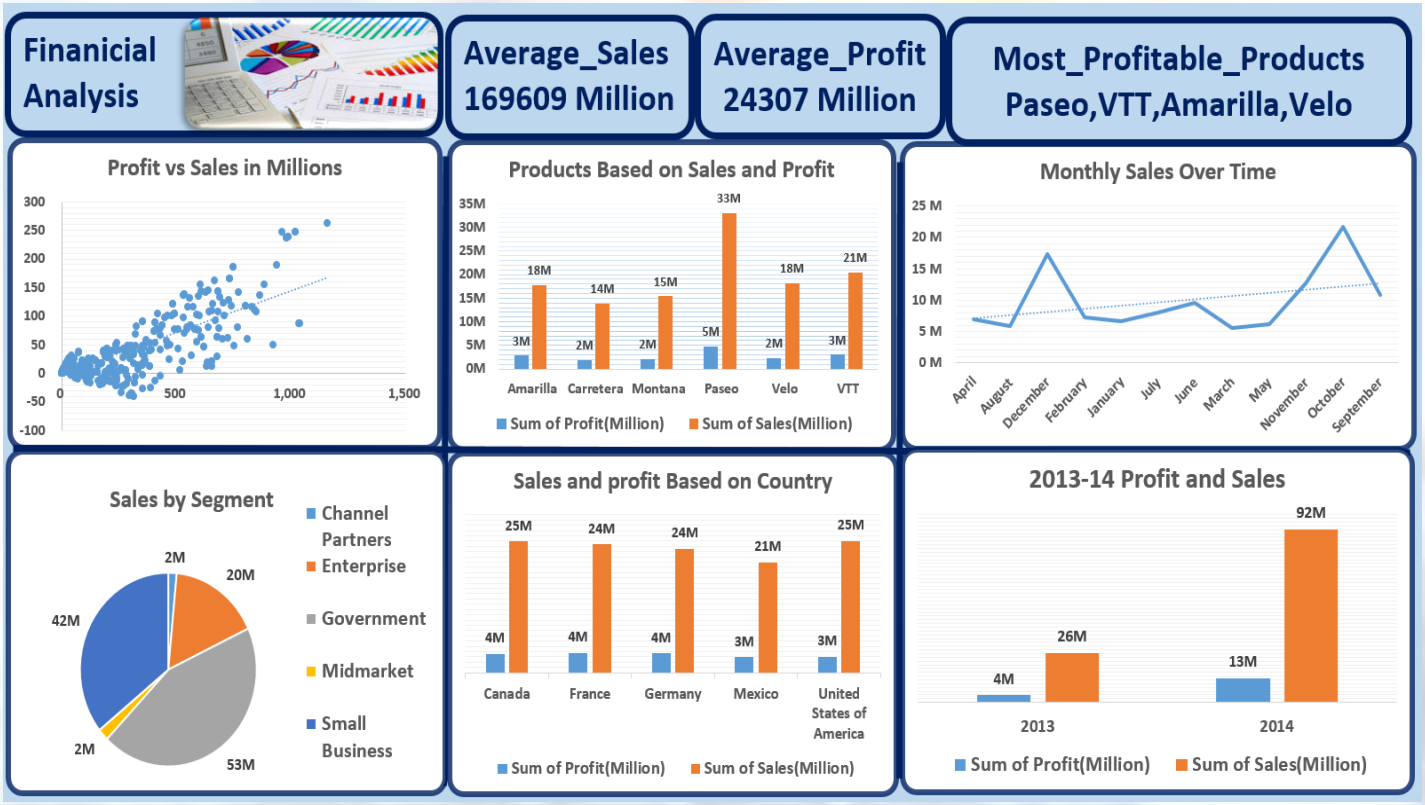
This project focuses on analyzing business performance using a dataset that includes the following key fields: **Segment, Country, Product, Manufacturing Price, Sale Price, Units Sold, Gross Sales, Discounts, Profit (Million), Sales (Million), Month Name, COGS (Cost of Goods Sold), Date, Month Number, and Year**. The main objective of this project is to understand how different factors — especially sales and profit — are related and how businesses can improve profitability by analyzing these trends.

Problem Statement

The company is currently unable to clearly identify which products, customer segments, and countries are contributing most to overall sales and profit. Without this insight, strategic decision-making around marketing, resource allocation, and product focus is limited. There is a need for a comprehensive analysis to uncover key trends, highlight underperforming areas, and support data-driven business growth.

Financial Analysis Dashboard

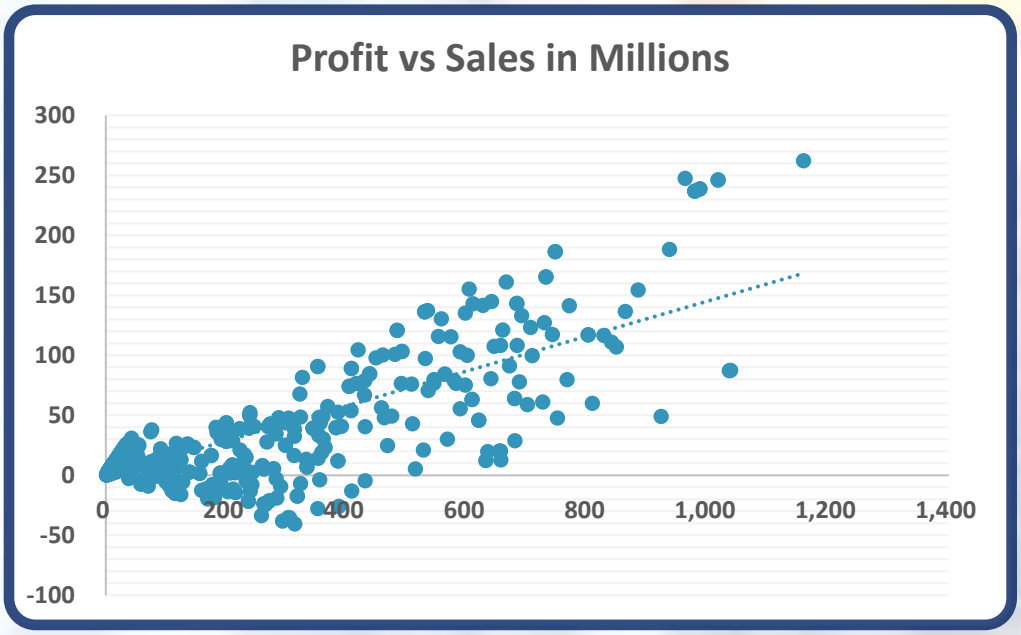
This dashboard presents a comprehensive financial overview of product performance across segments, countries, and time, helping business stakeholders identify growth opportunities and optimize strategic decisions.



1. Profit vs Sales in Millions (Scatter Plot)

Purpose: This scatter plot illustrates the relationship between sales volume and profitability.

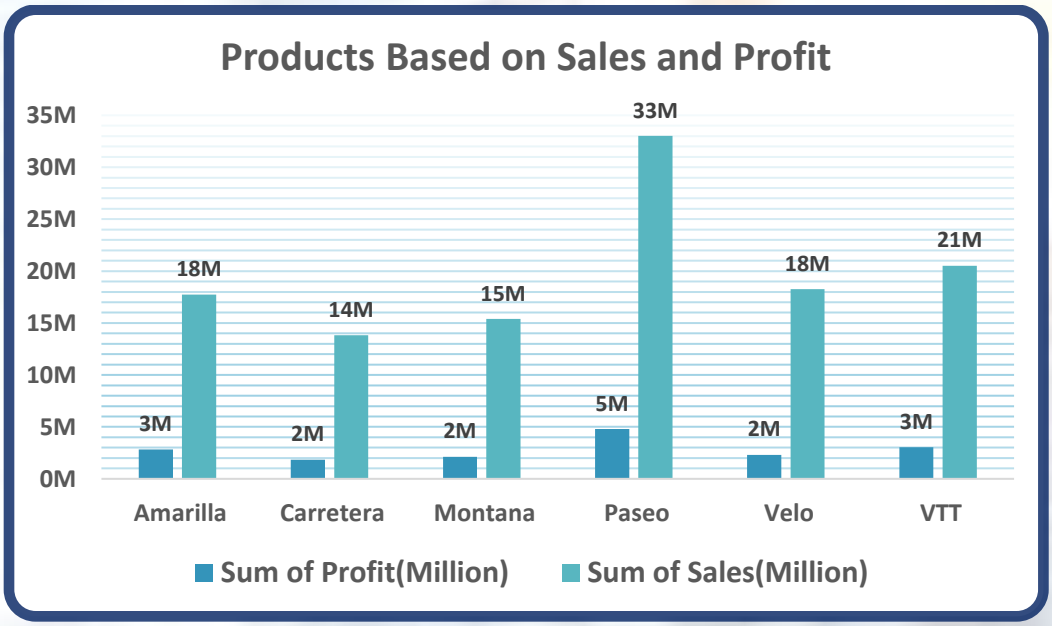
Insight: We observe a general positive correlation, suggesting that higher sales often lead to higher profits. However, a few data points show high sales with low or negative profit, indicating potential issues with cost structure or discounting. This insight is valuable for reassessing pricing or operational inefficiencies.



2. Products Based on Sales and Profit (Clustered Column Chart)

Purpose: Compares sales and profit across different products.

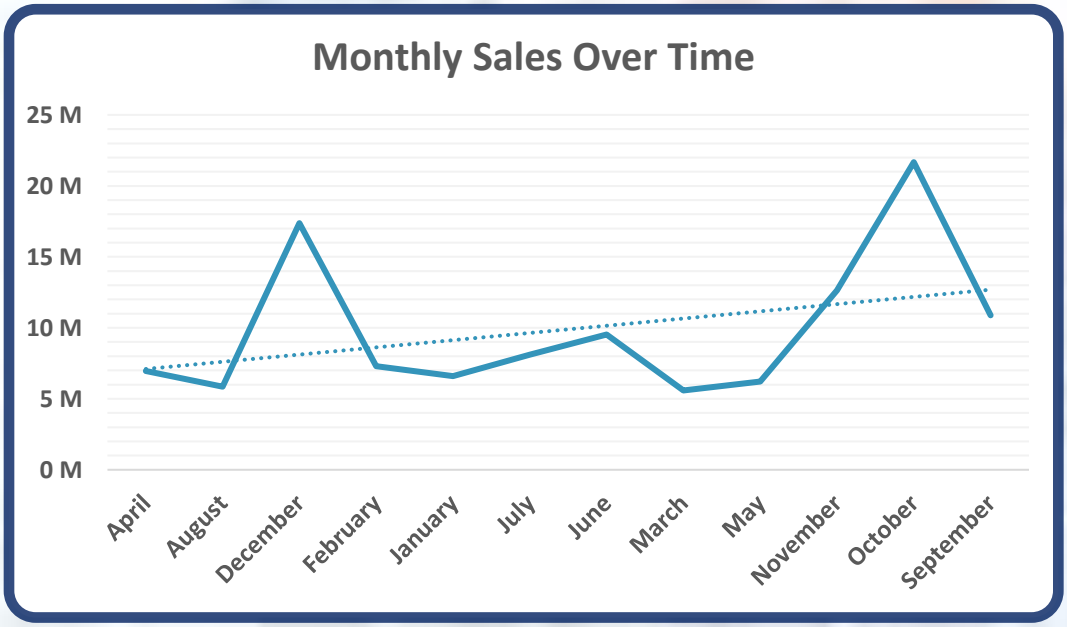
Insight: Products like *Paseo*, *VTT*, and *Amarilla* stand out as high performers, contributing significantly to both revenue and profit. Conversely, products with moderate sales but low profit may require re-evaluation or repositioning in the market.



3. Monthly Sales Over Time (Line Chart)

Purpose: Analyzes monthly sales trends.

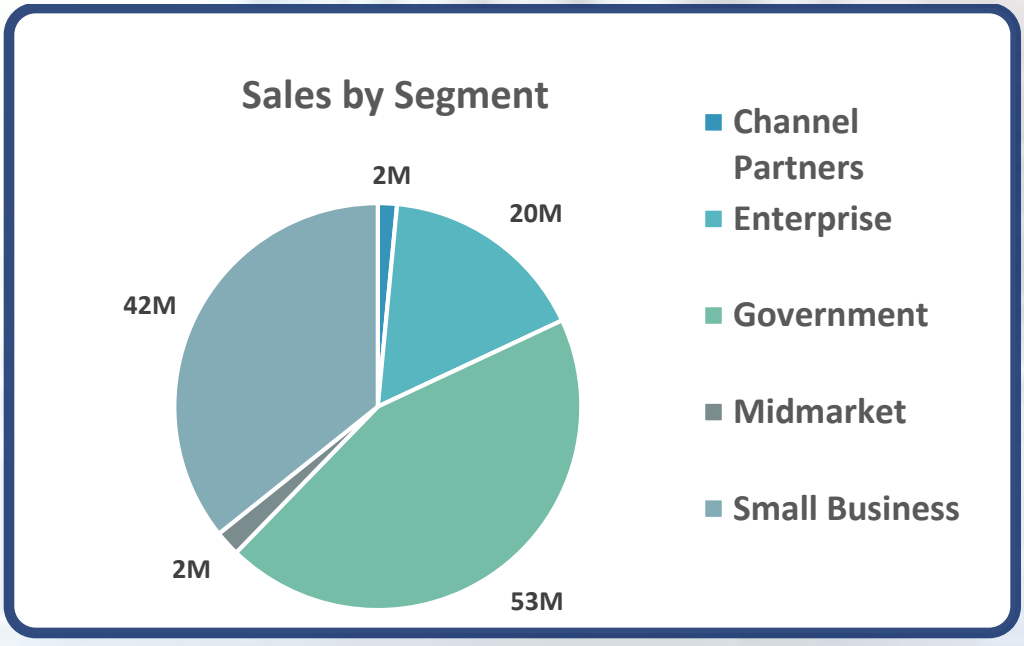
Insight: The chart reveals seasonal fluctuations, with peak sales occurring in October and February. This suggests specific months may be more responsive to marketing campaigns or seasonal demand, offering opportunities to align promotional strategies accordingly.



4. Sales by Segment (Pie Chart)

Purpose: Visualizes sales distribution by business segment.

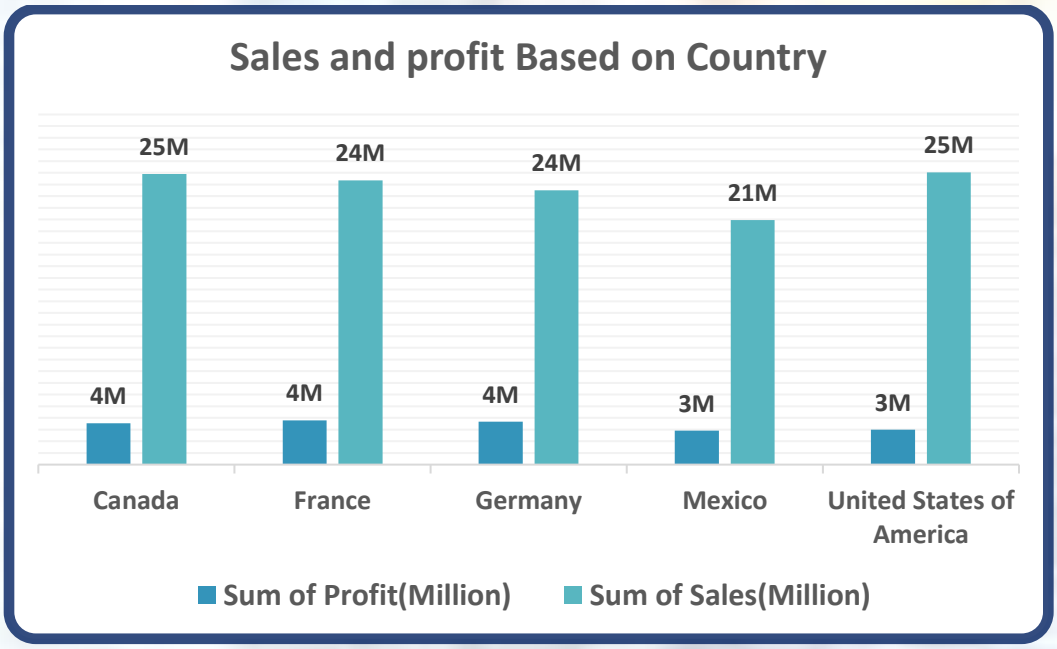
Insight: The *Small Business* and *Government* segments account for the majority of sales, indicating a strong client base in these areas. *Enterprise* and *Channel Partners* have relatively lower contributions, highlighting potential areas for business expansion.



5. Sales and Profit Based on Country (Clustered Column Chart)

Purpose: Evaluates geographic performance.

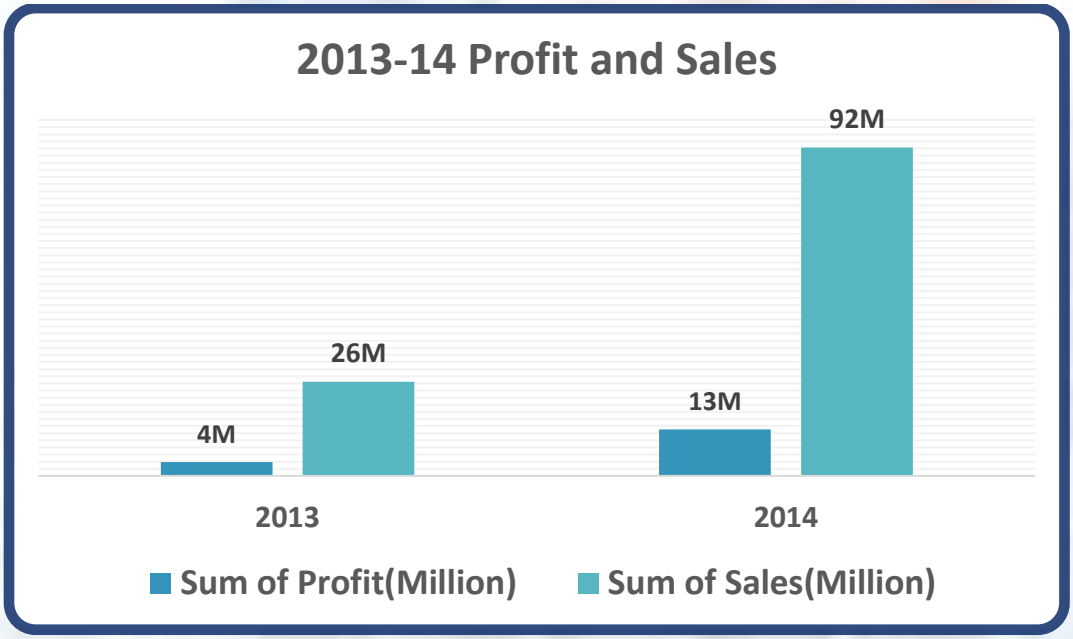
Insight: Countries like *Canada*, *France*, and *Germany* demonstrate consistent sales and profit contributions. This chart helps in regional strategy planning, resource allocation, and identifying markets with high return potential.



6. 2013–14 Profit and Sales (Clustered Column Chart)

Purpose: Compares overall annual performance.

Insight: A substantial increase in both profit and sales from 2013 to 2014 indicates business growth and improved financial efficiency. It also reflects positively on strategic decisions made during the year.



7. Top Metrics Cards (KPI Cards)

- **Average Sales: 169609 Million**
- **Average Profit: 24307 Million**
- **Most Profitable Products**: Paseo, VTT, Amarilla, Velo

These KPI cards summarize the key takeaways in a concise format for executives and decision-makers, ensuring clarity in performance communication.

Statistical Analysis

Problem Statement

Perform a statistical analysis on company sales data to identify which factors (like Discount, Customer Segment, Region, or Category) have the most significant impact on Profit. The goal is to provide actionable insights to help the business increase its profitability.

➢ Multiple Regression Analysis

Objective of Analysis

"Our goal is to understand how different factors like Sale Price, Units Sold, Gross Sales, and Discounts impact the company's overall Profit. This will help the company optimize its pricing and sales strategies to grow revenue and profits effectively."

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.864582
R Square	0.747502
Adjusted R Square	0.746036
Standard Error	21617.27
Observations	694

Dependent Variable

- profit

Independent variables

- Sale,Unit sold,Gross Sales,Discount

INTERPRETATION

- **Multiple R = 0.86**

  This tells us the strength of relationship between independent variables and profit. It's **very strong** (close to 1).

- **R Square = 0.75**

75% of the variation in Profit is explained by the variables we selected (Sale Price, Units Sold,

Gross Sales, Discounts). This is **very good** for business data.

- **Standard Error = 21617**

  On average the prediction of profit can vary +- 21,617.

16		*Coefficients*	*Standard Error*	*t Stat*	*P-value*
17	Intercept	2397.394	2305.663317	1.039784801	0.298804627
18	Sale Price	12.45605	12.68668397	0.98182086	0.326532736
19	Units Sold	-0.78964	1.240346084	-0.636625094	0.524580518
20	Gross Sales	0.204647	0.00822395	24.8842887	5.16999E-98
21	Discounts	-1.09952	0.058589326	-18.76649111	8.82143E-64

INTERPRETATION

- **Sale Price = 12.45**

  For every 1 unit increase in Sale Price, profit **increases by $12.45**, but this is **not statistically significant (p > 0.05)**. So, we can't trust it too much.

- **Units Sold = -0.78**

For each unit increase in Units Sold, profit **slightly decreases by $0.78**, but again, **not significant**. May be due to fixed costs or poor margin on high volume sales.

- **Gross Sales = 0.2046**

This is **statistically significant (p < 0.05)**. Every $1 increase in Gross Sales leads to **$0.20 increas in Profit**. This is very important and trusted.

- **Discounts = -1.10**

This is **also significant (p < 0.05)**. Every $1 increase in discount **reduces profit by $1.10**, which is

a **direct loss**. This means **excessive discounts hurt the business**.

Final Summary of Analysis

"I conducted a regression analysis on financial sales data to discover which factors significantly affect company profit. I found that **Gross Sales** has a positive and significant impact, while **Discounts reduce profit sharply**. Surprisingly, **Sale Price and Units Sold were not significant** in predicting profit, possibly

due to hidden fixed costs or market conditions. This analysis can help optimize pricing and discounting strategies to maximize profits."

➢ Correlation Matrix (Sales vs Profit)

Correlation Matrix		
	Sales(Million)	*Profit(Million)*
Sales(Million)	1	
Profit(Million)	0.806907032	1

The correlation matrix shows the strength and direction of the relationship between two key variables in our dataset: **Sales** and **Profit**.

The value 0.81 shows a strong and positive relationship between sales and profit, which means that when sales increase, profit also tends to increase, and vice versa. Since the value is close to 1, it indicates a very strong connection between the two variables.

Final Recommendation

Based on my detailed data analysis, including multiple regression and correlation analysis, I found that **Gross Sales** has the strongest and most significant impact on overall profit, while **Discounts** negatively affect business performance. The correlation of **0.81 between Sales and Profit** also confirms a strong and direct relationship—higher sales are closely linked to higher profits.

To grow the business effectively, I recommend the following:

1. **Focus on Increasing Gross Sales** by investing in better marketing strategies, improving product visibility, and targeting high-demand customer segments.
2. **Control and Optimize Discounts**, as excessive discounts are reducing overall profitability. Instead of high blanket discounts, apply targeted or seasonal promotions that maintain value.
3. **Monitor Product Performance** using data dashboards regularly, so sales trends and underperforming items can be identified and acted upon promptly.
4. **Leverage Data for Decision-Making**—continue tracking key variables like units sold, product price, and marketing spend, but emphasize sales-driven strategies based on strong predictors like gross revenue.

The End