

# PROJECT DOCUMENT : GLOBAL SALES PERFORMANCE ANALYSIS

---

## 1. PROJECT OVERVIEW

The **Global Sales Performance Analysis** project focuses on evaluating sales data across regions, products, and customer segments to uncover key trends and patterns. The objective is to assess performance, identify revenue drivers, and highlight areas for improvement. Insights from the analysis will support data-driven decisions, optimize sales strategies, and provide actionable business recommendations.

## 2. OBJECTIVE

The main objective of this project is to analyze and visualize global sales performance data in order to:

- Identify the most profitable **regions, products, and sales channels**.
- Examine the relationship between **revenue, profit, discounts, and marketing spend**.
- Evaluate **customer satisfaction** and its impact on business growth.
- Detect **trends and patterns** in sales transactions for financial planning.
- Provide actionable **insights to optimize profit, allocate resources effectively, and support strategic decision-making**.

## 3. DATASET

The dataset comprises **global sales transaction records** containing key attributes such as:

- **Order ID** – Unique identifier for each transaction
- **Product Category & Sub-category** – Classification of products sold
- **Sales Amount** – Total revenue generated from each order
- **Profit** – Net gain after deducting costs
- **Quantity** – Number of units sold
- **Discount** – Percentage of price reduction applied
- **Region / Country** – Geographical location of the sales
- **Order Date & Ship Date** – Timeline of sales and delivery operations

This dataset offers a **comprehensive perspective on sales performance and profitability**, enabling analysis across multiple dimensions such as product, region, time, and customer behavior.

## 4. LIBRARIES USED

For Data Loading & Manipulation

- **Pandas** – Used for data cleaning, transformation, and structured data handling.
- **NumPy** – Used for numerical operations and mathematical computations

For Data Visualization

- **Matplotlib** – Used for creating basic charts, graphs, and data plots to represent sales trends and distributions.
- **Seaborn** – Built on top of Matplotlib, used for advanced statistical visualizations with enhanced aesthetics.

## 5. STEPS FOLLOWED

- **Data Import and Cleaning** – Loaded the dataset, checked for inconsistencies, handled missing values, removed duplicates, standardized column names, and ensured correct data types.
- **Exploratory Data Analysis (EDA)** – Performed descriptive statistics, summary measures, and visualized data distributions to identify patterns.
- **Sales Trend Analysis** – Analyzed sales over time (monthly and yearly) to detect seasonality and long-term growth trends.
- **Regional Analysis** – Compared revenue and profit performance across different countries and regions.
- **Product Analysis** – Identified top-performing product categories and sub-categories, highlighting demand and revenue drivers.
- **Profitability Analysis** – Measured contribution margins, evaluated discount strategies, and studied key profitability drivers.
- **Customer & Salesperson Analysis** – Assessed customer satisfaction scores and analyzed individual salesperson performance to identify top contributors.
- **Marketing Spend Analysis** – Evaluated the relationship between marketing spend, revenue, and profitability to measure campaign effectiveness.
- **Discount Impact Study** – Investigated how discount percentages influenced sales volume and overall profit margins.
- **Operational Efficiency Analysis** – Examined order processing times and their effect on sales performance and customer satisfaction.
- **Visualization** – Created clear, insightful charts and graphs using Matplotlib and Seaborn to present findings effectively.

## 6. KEY INSIGHTS

- The dataset is a comprehensive view of **worldwide sales transactions**, encompassing various products, regions, and customer segments.

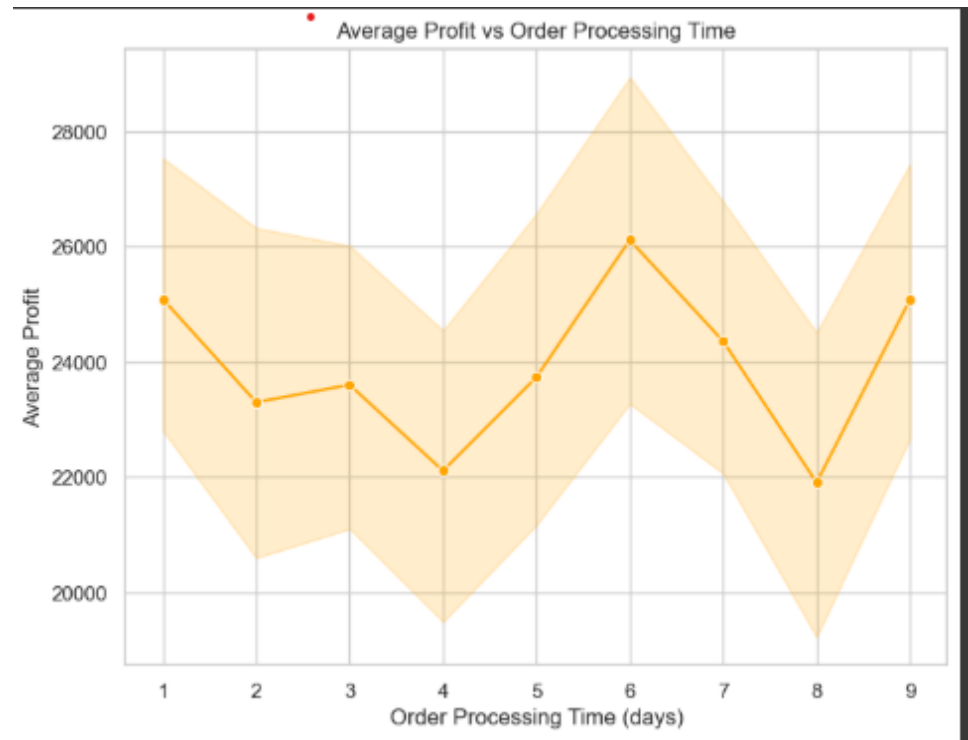
- It contains key **financial indicators** like revenue, profit, units sold, and marketing spend, making it suitable for financial performance analysis.
- The dataset is clean, with **no missing or duplicate values** across its 1,000 entries and 11 columns.
- **Revenue and profit** are highly dependent on the **region, product category, and sales channel**.
- **Discounts and marketing spend** play a critical role in shaping overall profitability.
- **Customer satisfaction** is a significant factor with the potential to drive long-term financial growth.
- Sales trends show **variability across different time periods**, which is crucial for effective financial planning.
- The data contains **patterns and anomalies** that could signal potential business risks or opportunities.
- Insights into **different customer segments** can be leveraged for targeted marketing and sales strategies.
- **Exploratory data analysis (EDA)** was a key part of the study, focusing on profitability by product category and regional financial performance.
- The analysis provides answers to critical business questions, such as which **products and regions are the most profitable**.
- The dataset can be used to understand how **sales trends vary over time**.
- The study also helps in identifying which **regions underperform** and require attention.
- The insights can be used to **optimize discount and marketing strategies** to balance sales growth and profitability.
- **Predictive modeling** is a potential next step to forecast future sales performance.
- The dataset captures key aspects of **transaction value** beyond simple sales counts.
- The analysis is structured to uncover **financial success** by product lines.
- The study focuses on understanding the **financial landscape** across different regions.
- The insights gained are directly applicable to making **strategic business decisions**.
- The dataset is a valuable resource for **data-driven decision-making** in the finance domain.

## 7. OVERALL SUMMARY

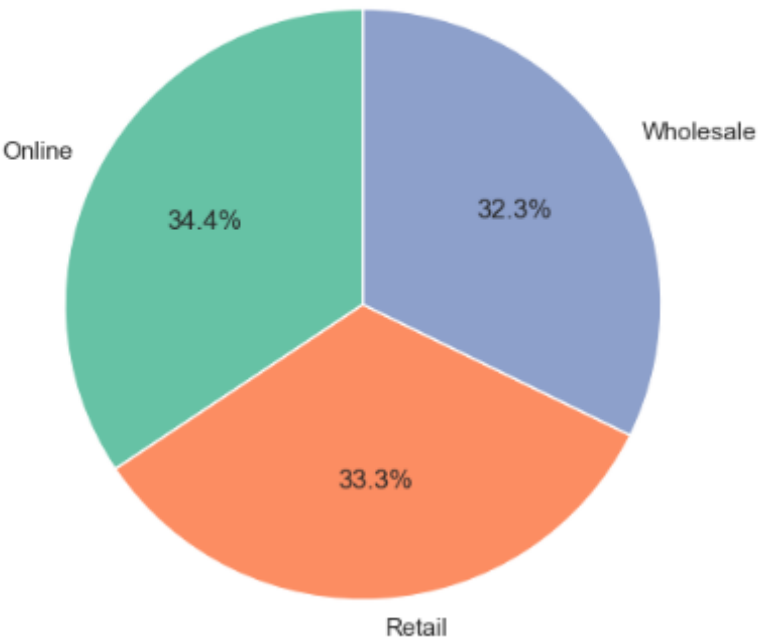
- The document provides a comprehensive analysis of **worldwide sales transactions**.
- The dataset is a **clean and valuable resource** for financial performance and profitability analysis.
- **Revenue and profit** are significantly influenced by region, product category, and sales channel.
- The analysis highlights the critical role of **discounts, marketing spend, and customer satisfaction** in shaping profitability.

- Insights from the analysis are useful for understanding **time-based trends** and identifying **sales anomalies**.
- The findings are crucial for making **data-driven decisions** to optimize business performance and financial success.

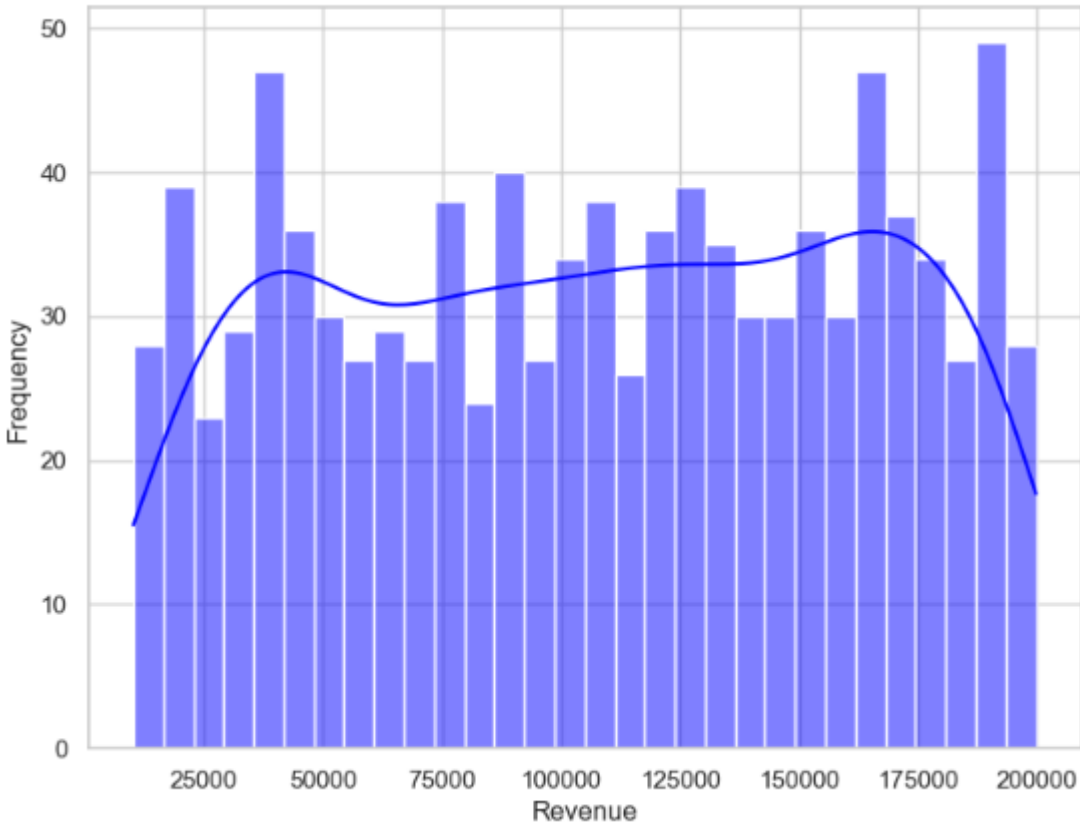
## 8.SCREEN SHOTS OF VISUALS

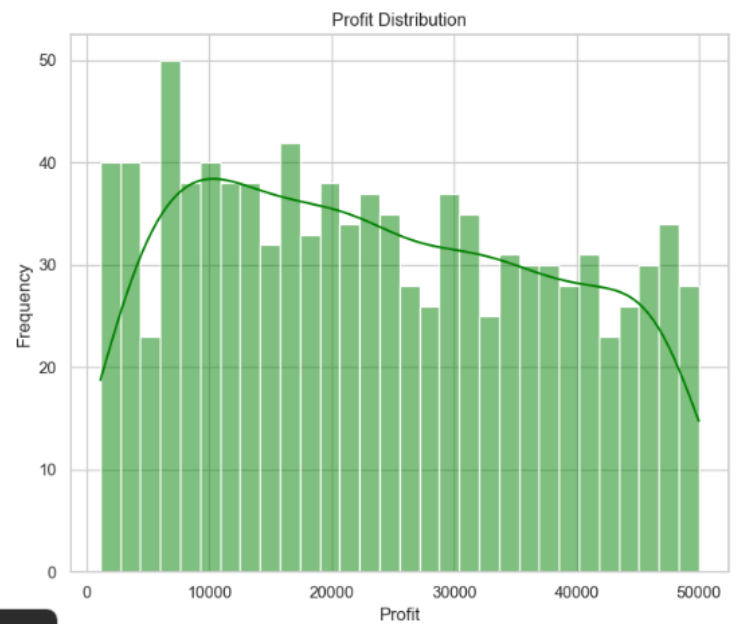
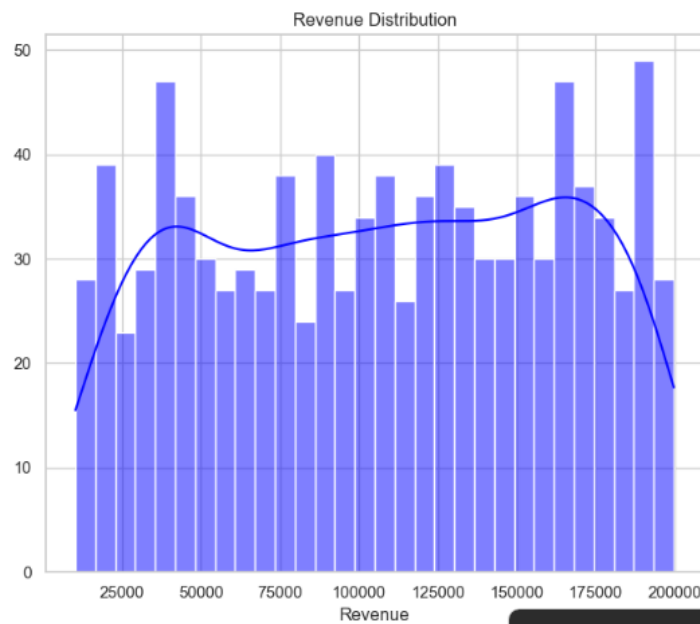
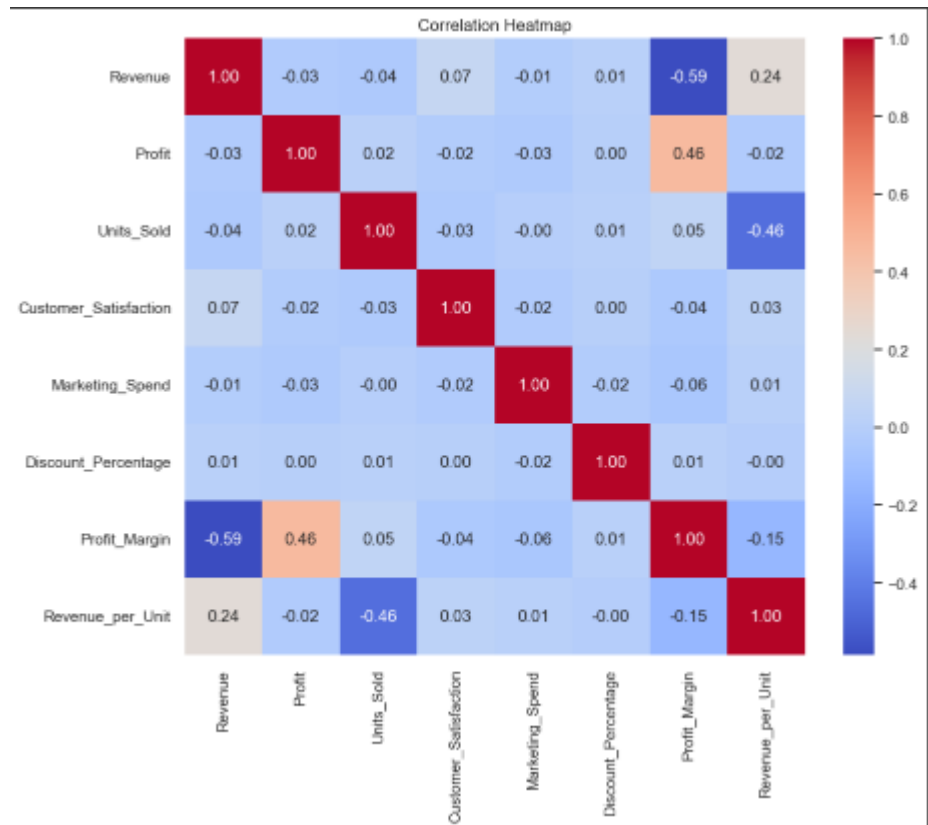


Sales Channel Distribution



Revenue Distribution





## 9. RECOMMENDATIONS

- Focus on high-performing regions and products to maximize profit.
- Optimize discount and marketing strategies to balance sales growth and profitability.
- Address areas with low customer satisfaction to improve loyalty.

- Consider predictive modeling to forecast future sales performance.

## 10. FILES INCLUDE

- Data Source - <https://www.kaggle.com/datasets/shohinurpervezshohan/global-sales-performance-dataset>
- Final\_Project\_Global\_Sales\_Performance.ipynb (Jupyter Notebook) - [https://drive.google.com/file/d/1DAOHvS3h7-z\\_oWHbvbWJhJLn01tLMcCm/view?usp=sharing](https://drive.google.com/file/d/1DAOHvS3h7-z_oWHbvbWJhJLn01tLMcCm/view?usp=sharing)
- Documentation.docx - <https://raw.githubusercontent.com/jeniffer-sys/FINAL-PROJECT---Global-Sales-Performance-Analysis/refs/heads/main/README.md>

## 11. HOW TO USE

1. Open the Jupyter Notebook file in Anaconda/Google Colab/JupyterLab.
2. Ensure required libraries (Pandas, NumPy, Matplotlib, Seaborn) are installed.
3. Run the notebook cells sequentially to reproduce the analysis.
4. Modify dataset paths if required.
5. Use the documentation for reference on project steps and insights.

## 12. CONCLUSION

The analysis provides a comprehensive overview of sales performance globally. It highlights profitable markets, effective product lines, and areas requiring strategic focus. The findings can support decision-making in pricing strategies, regional marketing, and inventory planning. Further analysis can be extended with predictive modeling and interactive dashboards in Power BI.