

Online Retail Sales Trends Report

Executive Summary

This report provides a detailed analysis of online retail sales trends using SQL and Python for data extraction, cleaning, and analysis. The findings are visualized through a Power BI dashboard to offer insights into customer demographics, product performance, and geographical sales distribution.

Data Overview

- **Number of Customers:** 92
- **Number of Products:** 7
- **Number of Countries:** 19
- **Total Sales:** \$10.03M

Key Metrics

- **Top Selling Product Lines:** Classic Cars, Vintage Cars
- **Highest Average Order Value:** Trains
- **Top Sales by Country:** USA, Spain, France

Visualizations and Insights

1. **Count of Each Product:**
 - **Classic Cars** dominate the product distribution.
2. **Sum of Sales By Product:**
 - **Classic Cars** have the highest sales, followed by Vintage Cars and Motorcycles.
3. **Sum of Product By Year with Total Sales:**
 - Peak sales were observed in 2004, with a decline in 2005.
4. **Average Order Value:**
 - The highest average order value is associated with **Trains**, followed by **Ships** and **Planes**.
5. **Sum of Sales by Country:**
 - The **USA** leads in sales, followed by **Spain** and **France**.

6. Sum of Price to Each Product:

- **Classic Cars** have the highest price per unit.

7. Countries We Deal With:

- Visualization shows a wide geographical distribution with significant sales in the USA, Europe, and Asia.

Questions and Answers

1. Which product line has the highest total sales?

- **Classic Cars** have the highest total sales.

2. What is the trend in sales from 2003 to 2005?

- Sales increased from 2003 to 2004 and then decreased in 2005.

3. Which country contributes the most to the total sales?

- The **USA** contributes the most to total sales.

4. Which product has the highest average order value?

- **Trains** have the highest average order value.

5. What are the total sales for 2004?

- Total sales for 2004 are approximately \$4M (exact figure needs to be extracted from the dataset).

6. How does the price per unit vary across different product lines?

- The price per unit is highest for **Classic Cars**, followed by **Vintage Cars** and **Motorcycles**.

7. Which regions show significant sales activity?

- Significant sales activity is observed in North America, Europe, and Asia.

Methodology

- **Data Extraction and Cleaning:** SQL queries were used to extract data from the database. Python scripts were employed for data cleaning and preprocessing.
- **Analysis:** Various analytical methods were applied to understand sales trends, customer behavior, and product performance.
- **Visualization:** Power BI was used to create an interactive dashboard to visualize the insights derived from the data analysis.

Conclusion

The analysis highlights the dominance of Classic Cars in sales and the significant contribution of the USA to the overall revenue. The sales trends indicate a peak in 2004 with a subsequent decline in 2005. The insights gained can guide strategic decisions in inventory management, marketing, and regional sales strategies.