Retail Store Analysis using Power BI

1. Introduction

This project focuses on analyzing retail store data using Microsoft Power BI. The goal is to derive meaningful business insights related to pricing, revenue, product performance, and sales trends across different countries. Interactive dashboards and visualizations were created to support data-driven decision making.

2. Project Objectives

- Analyze retail store prices by country.
- Evaluate revenue contribution by country.
- Identify top-performing products based on revenue and quantity.
- Understand sales trends over time using invoice dates.
- Create interactive and insightful Power BI dashboards.

3. Dataset Description

The dataset used in this project contains retail transaction details including invoice number, country, product description, quantity sold, unit price, and invoice date. The data was cleaned and transformed in Power BI before visualization.

4. Data Cleaning and Preparation

The following data preparation steps were performed in Power BI:
- Removal of null and duplicate records.
- Data type corrections for date, price, and quantity fields.
- Creation of calculated columns and measures (Revenue = Quantity × Unit Price).
- Filtering invalid or negative quantity values.

5. Key Analysis and Visualizations

5.1 Price by Country

This analysis compares average and total product prices across different countries. Bar and column charts were used to identify pricing variations between regions.

5.2 Revenue by Country

Revenue by country analysis highlights the countries contributing the highest sales. Maps and bar charts were used to visualize regional revenue distribution.

5.3 Revenue by Product Description

This visualization identifies top revenue-generating products. A bar chart was used to compare revenue across different product descriptions.

5.4 Quantity by Product Description

Quantity analysis shows which products are sold in the highest volume. This helps in understanding customer demand and inventory planning.

5.5 Trend Analysis by Invoice Date

Time-series analysis was performed using invoice dates to understand sales trends over time. Line charts were used to identify seasonal patterns and growth trends.

6. Power BI Dashboard Overview

The Power BI dashboard consists of interactive visuals, slicers, and filters allowing users to explore data by country, product, and time period. Users can drill down into specific insights and dynamically adjust views.

7. Conclusion

The Retail Store Analysis dashboard provides valuable insights into pricing, revenue, product performance, and sales trends. This analysis helps stakeholders make informed decisions regarding pricing strategies, inventory management, and market expansion.