Retail Business Performance & Profitability Analysis

Introduction

This project focuses on analyzing retail business data to evaluate sales performance, profitability, and customer segments. The goal was to identify key categories, regions, and segments contributing most to revenue and profit, and to find improvement areas in shipping and discount strategies.

Abstract

The analysis was conducted using a retail sales dataset containing transactions, customer details, and product information. By leveraging SQL for data cleaning and analysis along with Power BI for visualization, KPIs and insights were generated to understand category performance, regional trends, and profit margins. The study supports better business decisions related to marketing, logistics, and pricing strategies.

Tools Used

1. SQL – For data cleaning, transformation, and query-based analysis.
2. Power BI – For creating interactive dashboards and visual analytics.

Steps Involved

1. 1. Data Cleaning: Removed blanks, duplicates, and handled null values using SQL queries.
2. 2. Data Preparation: Created calculated columns such as profit margin and total sales in SQL.
3. 3. Data Import: Loaded the cleaned dataset into Power BI for visualization.
4. 4. KPI Creation: Calculated Total Sales, Total Profit, and Profit Margin metrics.
5. 5. Visualization: Designed visuals such as Category-wise Sales, Ship Mode Performance, Segment Share, and State-wise Sales.
6. 6. Insights Derivation: Identified top-performing cities, profitable categories, and optimal shipping modes.

Key Insights

1. • Technology category generated the highest sales (0.84M).
2. • Standard Class shipping mode provided the most profit.
3. • Consumer segment contributed more than 50% of total sales.
4. • New York City had the highest city-wise sales (0.26M).
5. • Profit margins are highest in Office Supplies category with balanced discount rates.

Conclusion

The retail performance analysis provided valuable insights into sales and profitability patterns. Using SQL for data cleaning and transformation ensured data accuracy and efficient processing. With Power BI, clear and interactive visualizations were created to help decision-makers monitor performance in real-time and make data-driven business decisions.