Retail Consumer Behavior Analytics Project

1. Project Overview

A leading retail organization aims to gain deeper insights into customer purchasing behavior to increase revenue, improve customer satisfaction, and strengthen long-term loyalty.

The company has observed noticeable shifts in purchasing patterns across demographics, product categories, and sales channels (online vs. offline). Management seeks to identify key factors influencing consumer decisions, including discounts, product reviews, seasonal trends, payment methods, and repeat purchase behavior.

Core Business Question

How can consumer shopping data be leveraged to uncover trends, enhance customer engagement, and optimize marketing and product strategies?

2. Project Deliverables

2.1 Data Preparation & Modeling (Python)

- Clean missing, duplicate, or inconsistent data
- Transform raw data into analysis-ready format
- Perform feature engineering where required
- Prepare structured datasets for further analysis

2.2 Data Analysis (SQL)

- Design structured tables to simulate retail transactions
- Segment customers based on demographics and behavior
- Analyze repeat purchase patterns and loyalty
- Identify key purchase drivers such as discounts, reviews, and seasonality
- Extract actionable business insights using SQL queries

2.3 Visualization & Insights (Power BI)

- Develop an interactive dashboard for stakeholders

• Visualize revenue trends and customer segmentation

• Compare online vs. offline sales performance

• Analyze product category performance

• Measure the impact of discounts, reviews, and payment methods

2.4 Report & Presentation

• Prepare a structured project report including methodology, findings, and recommendations

• Create a professional presentation highlighting key insights and actionable strategies

2.5 GitHub Repository

• Upload Python scripts for data preparation and modeling

• Include SQL scripts and database structure

• Attach Power BI dashboard file

• Add a well-documented README file explaining the project