Customer Shopping Behavior Analysis Report

Project Overview

This project analyzes customer shopping behavior to identify revenue patterns, customer demographics, product performance, discount impact, and customer loyalty.

Tools & Technologies

Python (Pandas, SQLAlchemy), PostgreSQL (SQL), Power BI, Jupyter Notebook

Dataset Description

The dataset contains transaction-level customer shopping data including demographics, purchase behavior, discounts, subscriptions, and reviews.

Python Analysis

Python was used to load, clean, and preprocess the data, standardize column names, and upload the cleaned dataset into PostgreSQL using SQLAlchemy.

SQL Analysis

SQL queries were written to analyze revenue by gender, subscription impact, top products, discount usage, customer segmentation, and age group revenue contribution.

Power BI Dashboard

Interactive dashboards were built in Power BI to visualize revenue trends, customer segments, product performance, and subscription behavior.

Key Insights

Subscribed customers generate higher revenue. Express shipping users spend more. Age group 25–44 contributes the highest revenue. Loyal customers are highly profitable.

Conclusion

This end-to-end project demonstrates real-world data analytics skills using Python, SQL, and Power BI to derive actionable business insights.