Executive Report: Customer Shopping Behavior Analysis

Prepared For: Retail Management Team

Project Type: Consumer Behavior Analytics

Tools Used: Python | SQL | PostgreSQL | Power BI

1. Executive Summary

This report presents an analytical study of customer shopping behavior based on 3,900 transaction records across multiple product categories. The objective is to identify purchasing trends, customer segments, revenue drivers, and opportunities to improve engagement and profitability.

2. Business Objectives

• Identify key revenue-driving customer segments

• Understand the impact of discounts and subscriptions on sales

• Analyze product performance across categories

• Improve customer retention and loyalty strategies

3. Methodology

Phase 1: Data Preparation (Python)

• Cleaned missing values (Review Ratings)

• Standardized column names and formats

• Created new features such as age groups and purchase frequency

• Integrated cleaned dataset into PostgreSQL database

Phase 2: Business Analysis (SQL)

• Revenue comparison by gender and age group

• Identification of high-spending discount users

• Top-performing products by rating and sales

• Subscription impact analysis

• Customer segmentation (New, Returning, Loyal)

Phase 3: Data Visualization (Power BI)

• Interactive dashboard with KPIs

• Revenue trends and category performance

• Customer segmentation insights

• Subscription and shipping behavior analysis

4. Key Insights

• Loyal customers represent the majority of transactions.

• Express shipping users show slightly higher average purchase values.

• Certain products are heavily dependent on discounts.

• Young adults contribute the highest revenue among age groups.

• Subscription users show strong repeat purchase behavior.

5. Strategic Recommendations

• Strengthen subscription programs with exclusive benefits.

• Introduce loyalty rewards for returning customers.

• Optimize discount strategies to protect profit margins.

• Promote top-rated products in marketing campaigns.

• Target high-revenue age groups with personalized offers.

6. Conclusion

By leveraging transactional data and advanced analytics, the company can better understand customer behavior, optimize marketing efforts, and drive sustainable revenue growth.