Customer Behavior Analysis – ShopEasy

Introduction

This project analyzes customer behavior for an e-commerce platform using SQL and Python. The objective is to evaluate customer engagement, product performance, and marketing effectiveness.

Dataset Summary

Total Customers: 100
Total Products: 20
Total Reviews: 100
Average Rating: 3.73

Top Rated Products

Product 8 (5.00)
Product 19 (4.40)
Product 18 (4.00)
Product 15 (4.00)
Product 1 (4.00)

Lowest Rated Products

Product 7 (2.67)
Product 12 (3.00)
Product 4 (3.00)
Product 16 (3.40)
Product 9 (3.40)

Engagement Summary

Total Engagement Records: 100
Total Likes: 10,446
Average Likes per Record: 104.46

Content Performance

Video: 3,473 likes
Blog: 2,999 likes
Social Media: 2,594 likes
Newsletter: 1,380 likes

Sentiment Analysis

Positive Reviews: 84
Negative Reviews: 11
Neutral Reviews: 5

Geography distribution

Top regions:
  GeographyID **4** → **18 customers** (highest)
  GeographyID **5** → **12**
  GeographyID **2** → **11**
  GeographyID **10** → **10**
  GeographyID **1** → **10**

Write business recommendations
Use this:

1. Focus marketing budget more on Video content (highest engagement).

2. Improve or rework Newsletter strategy (lowest likes).

3. Promote products that are strong in both rating + engagement:
    Product 8 is excellent (5.0 rating) and also high engagement.
    Product 1 has 4.0 rating and very high engagement.

4. Investigate low-rated products:
    Product 7 is the weakest (2.67) → quality/expectations issue.
    Product 16 has high engagement but only 3.40 rating → many users see it, but satisfaction is low → fix product or listing.

5. Campaign optimization:
    Replicate strategy from Campaign 17 (best likes) to other campaigns.

6. Region targeting:
    Run location-based promotions in GeographyID 4 first (largest customer base).