E-commerce Analytics Division – Product Insights Team

Product Analyst Project Report

Executive Summary
This report presents an analytical overview of user behavior and purchase patterns on an online retail platform. The analysis focuses on understanding user engagement, conversion funnels, pricing sensitivity, and brand performance to support data-driven product and marketing decisions.

Dataset Overview
The dataset captures event-level user interactions on an e-commerce platform, including views, cart additions, and purchases. Each record contains details such as event time, product category, brand, price, user ID, and session ID. The dataset enables in-depth behavioral analysis across millions of user sessions.

Objective & Scope
The objective of this analysis is to identify key behavioral trends, funnel drop-offs, and opportunities to improve user conversion and retention. The scope covers user event data, session-level analysis, and category-level insights. Marketing attribution and external campaign data are out of scope for this study.

Key Product Analysis Questions
- 1. Funnel Analysis – Evaluate the purchase funnel (view → cart → purchase) and identify major drop-offs.
- 2. Category & Brand Conversion – Determine top-performing categories and brands based on conversion rate.
- 3. Price Sensitivity – Compare average prices of viewed vs. purchased products to analyze price behavior.
- 4. Power Users & Retention – Identify the top 10% of active users and analyze their purchase contribution.
- 5. Session Behavior – Examine session duration and its correlation with purchase likelihood.
- 6. Time-Based Trends – Study purchase trends by day and hour to identify peak activity windows.
- 7. Brand Loyalty – Assess whether repeat buyers remain loyal to specific brands.
- 8. Cart Abandonment – Calculate cart abandonment rate and re-engagement potential within 7 days.
- 9. High-Value Products – Identify products contributing to the top 20% of total revenue.
- 10. Product Recommendation Opportunity – Analyze co-view and co-purchase patterns to inform recommendations.