

# ZEOTAP

*Data Science Intern Assignment EDA Report*

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## **Business Insights**

### **1. Customer Onboarding Delays**

- Insight: Asia faces the longest onboarding delays (~800 days for first purchase), while South America shows anomalies (negative onboarding days), due to the fact that first purchase has been done before signing up. Europe and North America have moderate onboarding timelines (~200–400 days).
- Actions: Launch localized onboarding campaigns (e.g., post-signup discounts) to accelerate first purchases. Streamline processes to maintain or reduce current onboarding timelines.
- Impact: Reducing delays in Asia/South America could boost customer activation by 30–50%, directly increasing early revenue.

### **2. Regional Product Preferences**

- Insights: Clothing dominates in Asia (32.5%) and South America (31.8%), while Electronics lead in North America (29.4%). Europe favors Books (28.5%), but Home Decor lags globally (18–24%).
- Actions:
  - Asia/South America: Prioritize Clothing inventory and seasonal

campaigns.

- North America: Highlight Electronics with tech bundles (e.g., "Smart Home Kits").
- Europe: Promote Home Decor using cross-selling strategies.
- Impact: Aligning inventory with regional demand boosts sales by 20–30%.

### 3. Customer Loyalty & Repeat Purchases

- Insights: North America leads in loyal customers (29.4% with >5 purchases), while South America struggles with 31.8% one-time buyers. Asia has strong repeat buyers (32.5%) but low loyalty conversion.
- Actions:
  - South America: Launch "Second Purchase" discounts.
  - Asia: Introduce tiered rewards (e.g., "Spend \$500, get \$50 off").
  - North America: Strengthen loyalty perks (e.g., early access to sales).
- Impact: Retention improvements could cut acquisition costs by 15–25%.

### 4. Inventory Turnover & Sales Velocity

- Insights:
  - Clothing: in Asia/South America sells fast (velocity 4.8) but yields low margins (~12.5K).
  - Electronics in North America balance velocity (3.2) and value (~20K).
- Action:
  - Asia/South America: Bundle Clothing with higher-margin accessories.
  - North America: Stock premium Electronics to sustain AOV growth.
- Impact: Optimizing turnover-value balance increases profitability by 10–15%.

### 5. Repeat Purchase Rate (RPR)

- Insights: North America\*\* has the highest RPR (~0.8), while \*\*South America\*\* lags (~0.2). \*\*Europe\*\* and \*\*Asia\*\* show moderate RPR (~0.4–0.6).
- Action:
  - South America: Fix data errors (e.g., negative values) and deploy localized loyalty programs.
  - Asia/Europe: Use personalized recommendations to convert repeat buyers.
- Impact: Closing RPR gaps could lift revenue by 20% in underperforming regions.

## **6. Average Order Value (AOV) Trends**

- Insights: North America leads AOV (~\$700), while South America trails (~\$200). Asia and Europe show steady growth (\$300→\$500 from 2024–2025).
- Action:
  - South America: Introduce free shipping thresholds (e.g., "Spend \$100, ship free").
  - Asia/Europe: Upsell premium products during peak seasons.
- Impact: AOV growth could drive 25% revenue uplift in low-performing regions.

## **7. Customer Lifetime Value (CLV)**

- Insights: North America's loyal customers spend 2.3x more (\$700 vs. \$300). Asia has high repeat buyers but lower CLV (\$450).
- Action:
  - Asia: Convert repeat buyers with VIP memberships.
  - North America: Offer exclusive bundles to loyalists.
- Impact: Prioritizing CLV increases long-term revenue by 30–40%.