

End-to-End Retail Performance & Behavioral Analytics RetailNova Inc.

INSIGHTS FOR POLICYMAKERS

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Executive Summary

RetailNova's analytics project analyzed sales, customer, product, store and return data to surface actionable insights. Over the last **12 months** total revenue is **233.98K** (**3,450** units sold) with an average revenue per customer (ARPC) of **698.57**. **Flagship stores** are the largest **profit drivers**, but **Personal Care** — while **profitable** — shows the **highest return rate**. This report summarizes findings from five Power BI dashboards and recommends quick wins and strategic steps to improve profitability and reduce returns.

Objectives & Scope

- Identify key sales trends and anomalies.
 - Understand customer behavior and segmentation.
 - Optimize product performance and inventory.
 - Improve store and regional profitability.
 - Provide dashboards + an insights presentation for leadership.
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Data & Methodology

- **Datasets:** sales, customers, products, stores, returns (cleaned).
- **Cleaning/Feature Engineering:** missing ages imputed, date conversions, IQR capping for quantity, profit_per_unit, age_group, reason_category.

- **Tools:** Python (Pandas/Seaborn), SQL, Power BI.
 - **Deliverables:** Cleaned CSVs, SQL queries, 5 Power BI dashboards, this report, and an insights PowerPoint.
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Key Findings & Insights

1. Sales Overview

(Last 12 months)

- Total Revenue: **233.98K**
- Total Quantity Sold: **3,450**
- Average Revenue per Customer (ARPC): **698.57**

Profit by Store Type (share)

- Flagship: **38.07%**
- Franchise: **31.37%**
- Kiosk: **30.56%**

Top 5 Products by Revenue

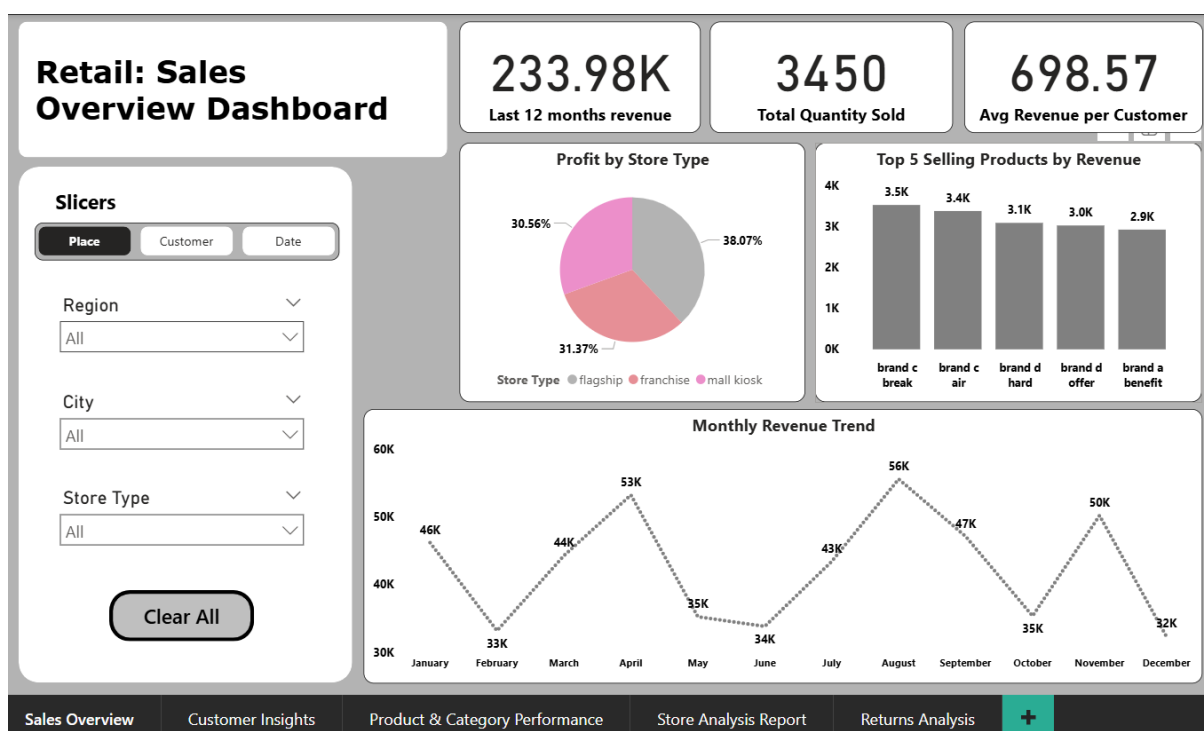
1. Brand C Break — **3.5K**
2. Brand C Air — **3.4K**
3. Brand D Hard — **3.1K**
4. Brand D Offer — **3.0K**
5. Brand A Benefit — **2.9K**

Monthly Revenue Trend

- Highest: **August — 55,559.24**
- Lowest: **December — 32,337.28**

Interpretation & Actions

- August is a clear peak — investigate promotions/events driving the spike and replicate successful tactics.
- Top 5 products contribute a meaningful share — protect inventory levels for these SKUs and build upsell/bundle offers.
- Flagship stores deliver highest profit share — invest in flagship playbook and replicate best practices.



2. Customer Insights

- Total Customers: **800**
- **Age groups (counts):** Adult 254, Mid-adult 222, Young adult 181, Senior 143
- **Gender (counts):** Female 287, Male 275, Other 238

- **Top 3 Customers (by revenue):** C0629 (1,273), C0282 (1,228), C0162 (1,194)

Interpretation & Actions

- Adults and Mid-adults form the largest groups — priority for targeted campaigns.
- “Other” gender segment is sizable — design inclusive communications and test tailored offers.
- Create VIP retention programs for Top customers (C0629, C0282, C0162) to increase CLV.

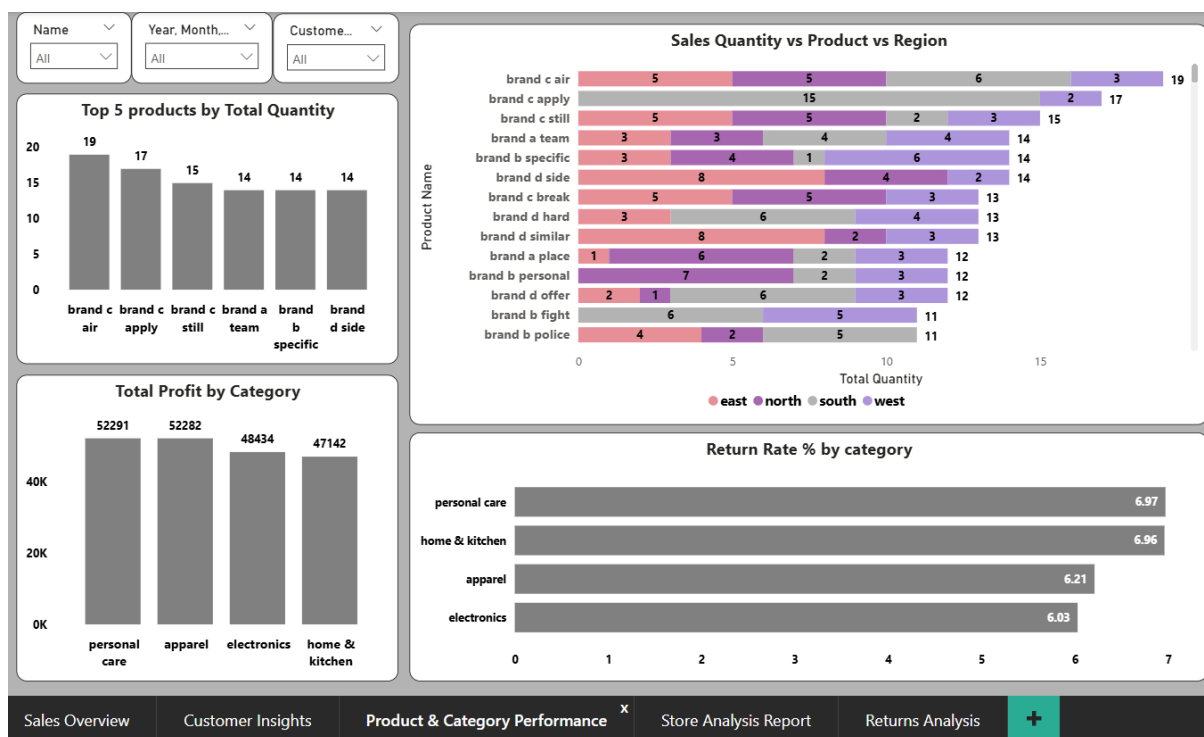


3. Product Performance

- **Best performing category (profit):** Personal Care — **52,291**
- **Lowest performing category (profit):** Home & Kitchen — **47,142**
- **Highest category return rate:** Personal Care — **6.97%**

Interpretation & Actions

- Personal Care drives profit but has the highest return rate — focus on quality checks, improved product descriptions, and packaging checks.
- Home & Kitchen requires a profitability review (pricing, promotions, assortment curation).

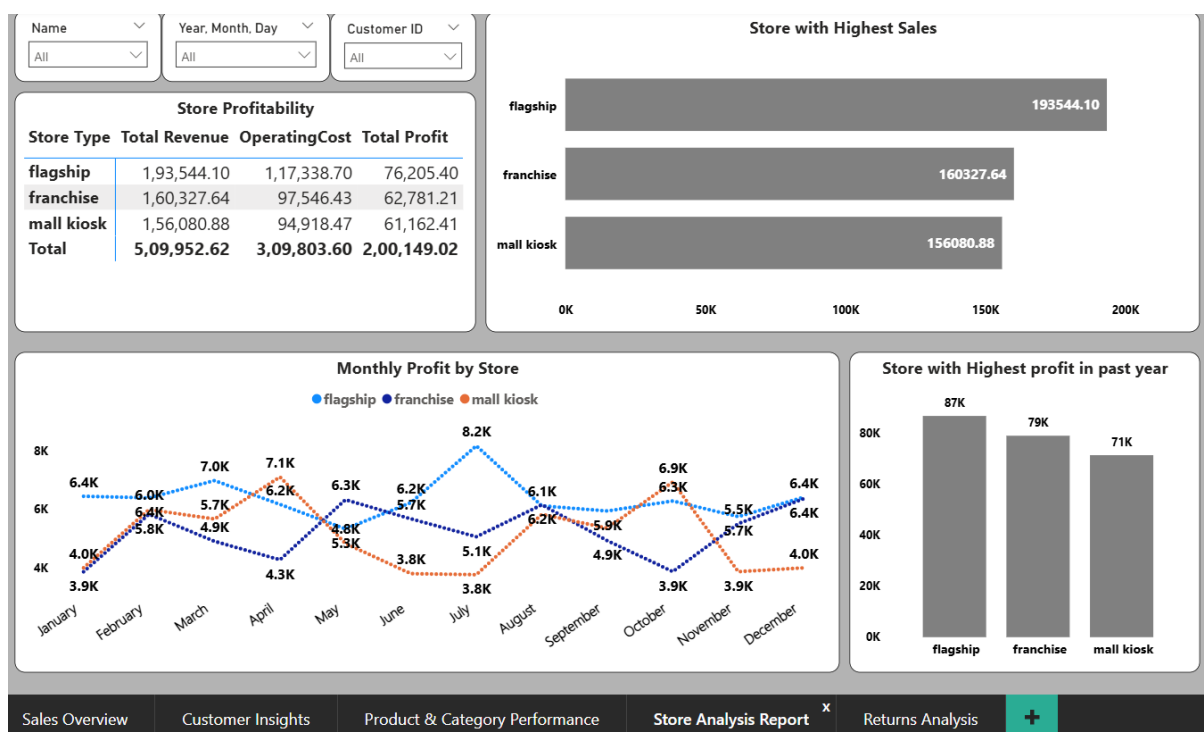


4. Store Analysis

- **Store with Highest Sales:** Flagship — **193,544.10**
- **Store with Highest Profit:** Flagship — **86,853.01**
- **Store with Lowest Profit:** Mall Kiosk — **71,452.51**

Interpretation & Actions

- Flagship stores are high ROI — standardize successful merchandising, staffing and marketing tactics across similar stores.
- Mall kiosks show lower profit — analyze operating costs and SKU mix; consider repositioning or cost optimization.
- Provide data-driven insights to help students select the **best colleges** based on **Location, Fees, Courses, and Infrastructure**.
- Ensure students can **compare Colleges efficiently**, reducing **confusion and uncertainty** in the selection process.

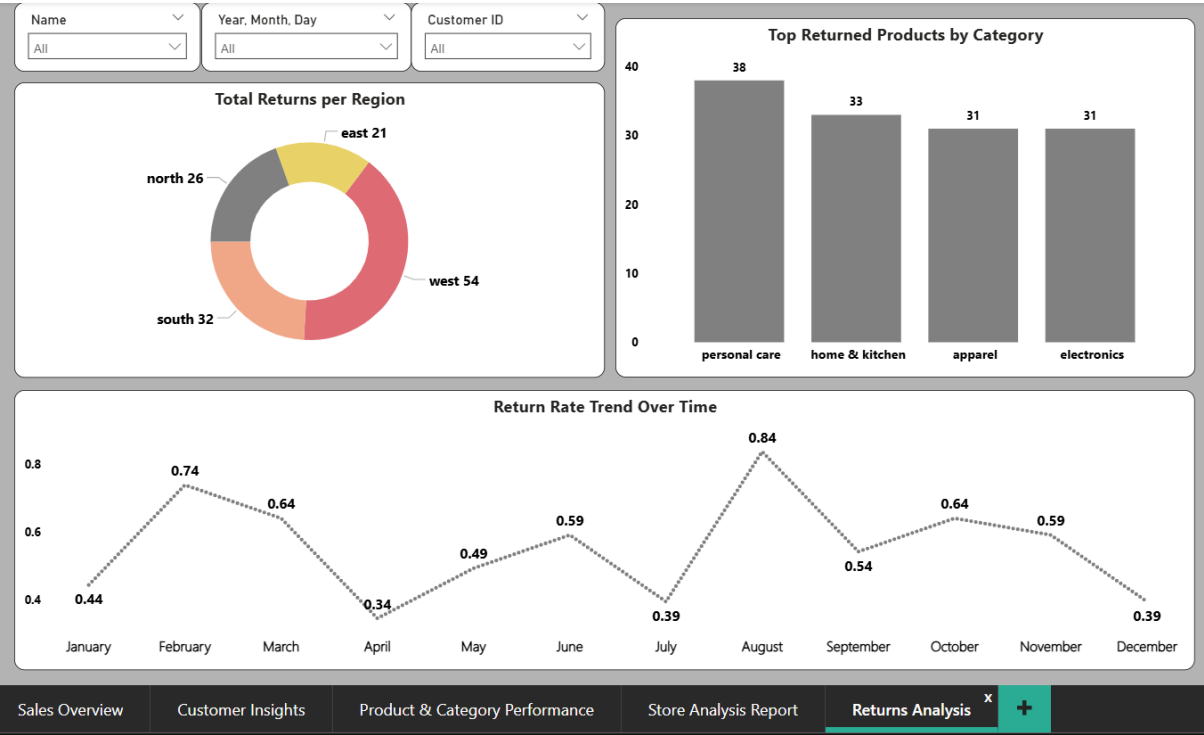


5. Returns Analysis

- **Peak return month:** August (highest rate **0.84%**)
- **Top return categories (counts):** Personal Care (38), Home & Kitchen (33)
- **Primary return reason:** Defective — **30.88%**

Interpretation & Actions

- Defective items drive a large share of returns. Actions: supplier quality audits, stricter QC, and enhanced inbound inspection.
- For Personal Care (high returns), enhance product guides, tighten packaging standards, and run batch inspections.



Recommendations

Quick Wins (0–30 days)

1. Start QC audit for Personal Care SKUs; implement a returns triage for defects.
2. Apply targeted campaigns for Adults & Mid-adults; create offers focused on Top-5 products.
3. Run a cost review for Mall Kiosk locations (operating cost vs profit).

Strategic (1–3 quarters)

1. Replicate flagship store processes across high-potential stores.
2. Rebalance SKU mix for Home & Kitchen; discontinue persistently low-margin SKUs.
3. Build a CLV program for high-value customers (personalized offers, early access).

Project Summary & Deliverables

- Cleaned datasets (CSV), SQL queries answering the 10 business questions, Power BI dashboards (5), final report (this document), and presentation slides.
 - Tools: Python, SQL, Power BI, MS Word/PPT.
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