

Retail Pricing Analytics

Objective

To uncover pricing inefficiencies and cost optimization opportunities across retail product categories using Power BI. The dashboard analyzes product pricing, freight costs, competitor price gaps, ERP validation mismatches, and revenue forecasting to support strategic pricing decisions.






Dataset Overview

- **Source:** [Kaggle – Retail Price Optimization Dataset](#)
- **Period:** January 2017 – December 2018
- **Key Fields:**
product_category_name, unit_price, total_price, freight_price, freight %, price_gap_comp1/2/3, revenue_validation, product_score, quantity, month_year



Tools & Skills Used

- Microsoft Power BI, Power Query for data shaping, adding new columns, DAX for calculated columns and KPIs

Key Dashboard Features

-  **Freight % vs Revenue:** Combo chart to compare cost inefficiencies across categories
-  **Competitor Price Gap Analysis:** Color-coded table highlighting overpriced/underpriced categories
-  **ERP Validation Tracker:** Monitors mismatch frequency and categories affected
-  **Forecasting for Q4 2018:** Predicts revenue trend using Power BI forecasting
-  **Insight Cards & Filters:** Dynamic KPIs and slicers for product category and year

Overall Key Insights

 Insight	 Action
Watches & Gifts and Health & Beauty consistently delivered high revenue across both years	Consider doubling down on marketing these efficient categories
Consoles & Games had extremely high freight % (57%) with very low sales	Immediate cost optimization or product delisting recommended
Health & Beauty was ₹40–₹100 more expensive than competitors	Risk of low conversion unless justified by brand trust
Computers & Accessories were cheaper than competitors, yet performed strongly	Maintain position for competitive advantage
Console Games pricing aligned with market but still underperformed	Signals good benchmarking but low demand

Year-Wise Breakdown & Trends

◆ 2017 Highlights

Top 5 Product Categories by Revenue

1. **Garden Tools** – ₹95K
2. **Health & Beauty** – ₹71K
3. **Bed, Bath & Table** – ₹71K
4. **Watches & Gifts** – ₹68K
5. **Cool Stuff** – ₹44K

Key Insights:

- Strong seasonal growth observed throughout the year
- **November 2017 peak** indicates high pre-holiday sales (₹87K+)
- Freight percentages remained moderate, and ERP mismatches were minimal
- Early indicators of pricing mismatches emerged in **Smart Watches**

✅ **Summary:** 2017 was a foundation year with steady growth, low system issues, and emerging pricing gaps.

◆ 2018 Highlights

Top 5 Product Categories by Revenue

1. **Health & Beauty** – ₹141K
2. **Watches & Gifts** – ₹139K
3. **Computers & Accessories** – ₹108K
4. **Garden Tools** – ₹68K
5. **Furniture & Decor** – ₹43K

Key Insights:

- **May 2018** was the overall **peak revenue month (₹91K)**
 - Post-May: A steep decline through **June–August** raised concerns
 - Freight % **spiked in several underperforming categories**, especially Consoles
 - ERP mismatches increased, particularly in **Office Supplies** and **Accessories**
 - **Smart Watches and Beauty** remained overpriced against competition, risking conversion loss
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Forecasting (Sep–Dec 2018)

- Forecasted sales range: **₹41K to ₹52K**
 - **Confidence bands** were wide — some lower bounds dipped below ₹0
 - Indicates **high market volatility and risk**
 - Suggests stabilization needed before year-end: pricing strategy, promotions, or cost cuts
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Final Outcome

Built a fully functional, insight-driven **Power BI dashboard** that enables:

- Smart price benchmarking
- Freight burden identification

- ERP system validation
- Forecast-informed planning

Reflects strong analytical thinking, visual storytelling, and hands-on DAX + Power BI expertise.

Files Included

- Retail_Pricing_Analytics.pbix
- Screenshots & visuals
- This project report (README)