



# **Refining Product Data and Pricing for an Enhanced Customer Experience in Online Fashion Retail**

BDM Capstone Project

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# Organization Background

- AJIO, India's leading online fashion store (part of Reliance Retail, since 2016)
- Sells: Clothes, footwear, accessories for men, women, kids (B2C focus)
- Known for: Trendy picks, massive brand selection, seamless pan-India delivery
- Key struggle: Messy product data, confusing prices discounts, more focus on women's fashion

01

Delivers to over 26,000 pin codes making fashion accessible everywhere in India.

02

Hosts 1.3 million+ styles from 5,000+ brands, including unique "AJIO Own" and exclusive Indie collections.

03

Invests in tech virtual try-ons, quick delivery, and personalized suggestions, helping shoppers find the right fit fast.

# Problem Statement

Making shopping easy and fair on AJIO means optimizing how product data, prices, and discounts are managed behind the scenes. I noticed real issues in the catalog—messy details, confusing deals, and some shoppers getting better options than others. My project aims to address these issues, ensuring every customer has a better experience.

01.

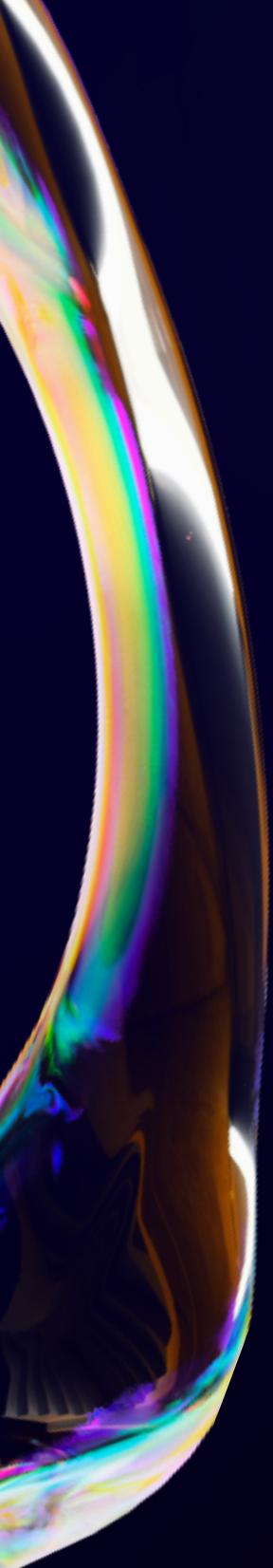
- Brand names and colors were inconsistent, filled with typos or listed in different ways (like “navy” vs. “navy-blue,” “allensolly” instead of “allen-solly”)
- This made searching tough and recommendations unreliable for real shoppers

02.

- Discounts and prices didn’t follow any clear pattern, sometimes big, sometimes barely there
- Shoppers couldn’t tell if a deal was really good, which affects trust and sales

03.

- Women’s section had more choices and better discounts; men’s fashion was left behind
- Fairness and equal opportunities across categories were missing, holding back growth



# Data Collection & Methodology

- I used the Kaggle AJIO Fashion dataset, scraped directly from AJIO's site, so it's as close as you can get to primary data for digital retail (367,172 products).
- The data included: brand, color, product description, gender, original and discount prices, everything a real shopper would see.
- I noticed right away the catalog was messy: color names like "wfn4" or "663", brand typos, and odd price entries. Cleaning up was my first and most important step.
- Using Python (Pandas) and FuzzyWuzzy, I standardized messy entries, grouped rare/invalid names as "other," and made sure all prices and discounts were realistic and usable for analysis.

01

Fixed typos and inconsistent entries with Python & FuzzyWuzzy, reduced 4,000+ color types to 33 clear colors, and merged and corrected brand names.

02

Grouped products into price bands (Budget, Mid, Premium, Luxury) and by gender; removed outlier prices discounts using IQR method to focus on real, typical trends.

03

Created new features (like discount %), ran ANOVA, t-test, and correlation to uncover hidden patterns; used bar charts, boxplots, and heatmaps to turn findings into clear, visual stories.

# Results & Findings

AJIO's messy product data, unpredictable pricing, and gender imbalance in the catalog were affecting search, discounts, and customer experience. My analysis targeted these core problems to make the catalog cleaner, smarter, and more balanced.

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01

Data Quality: From Messy  
to Meaningful

02

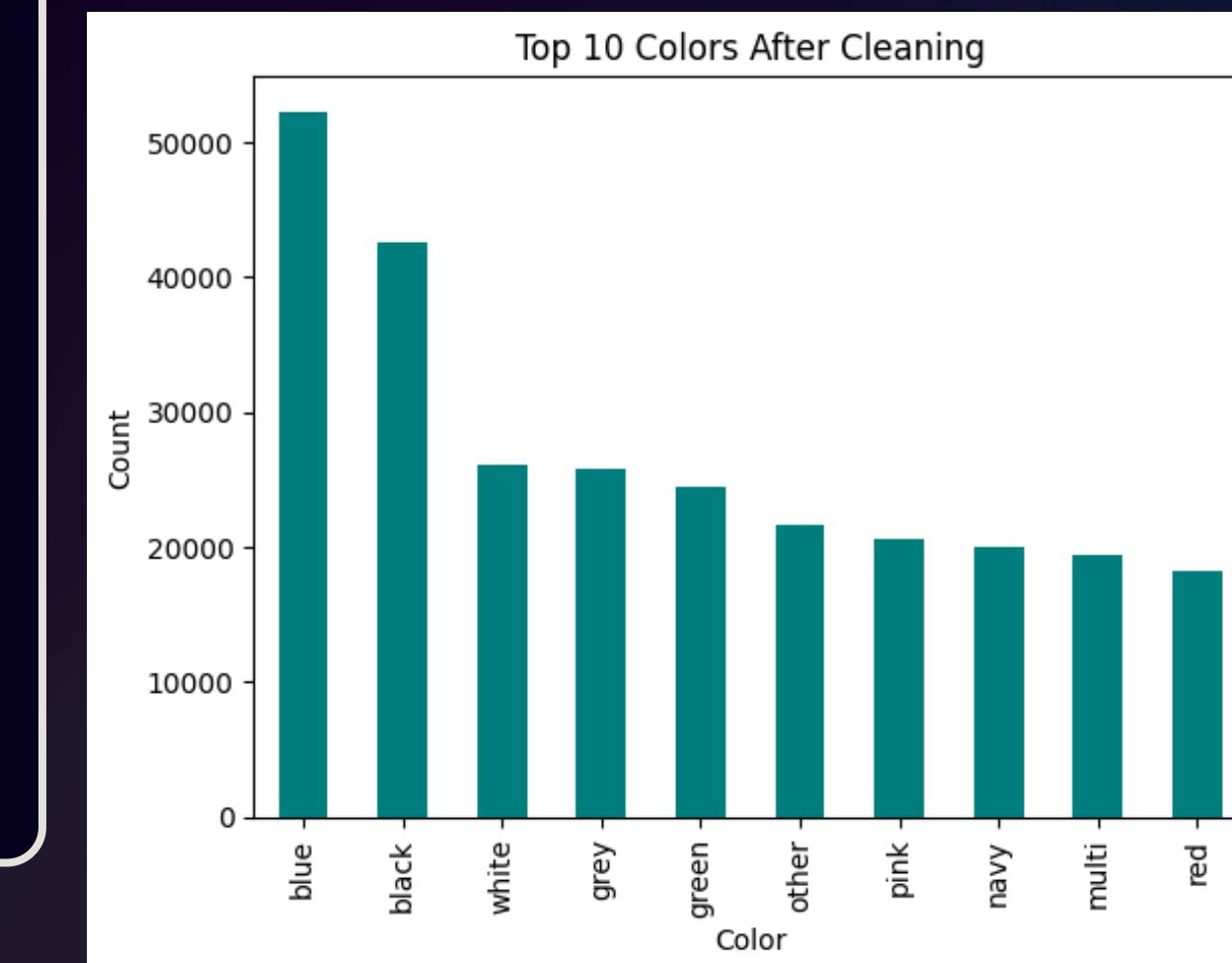
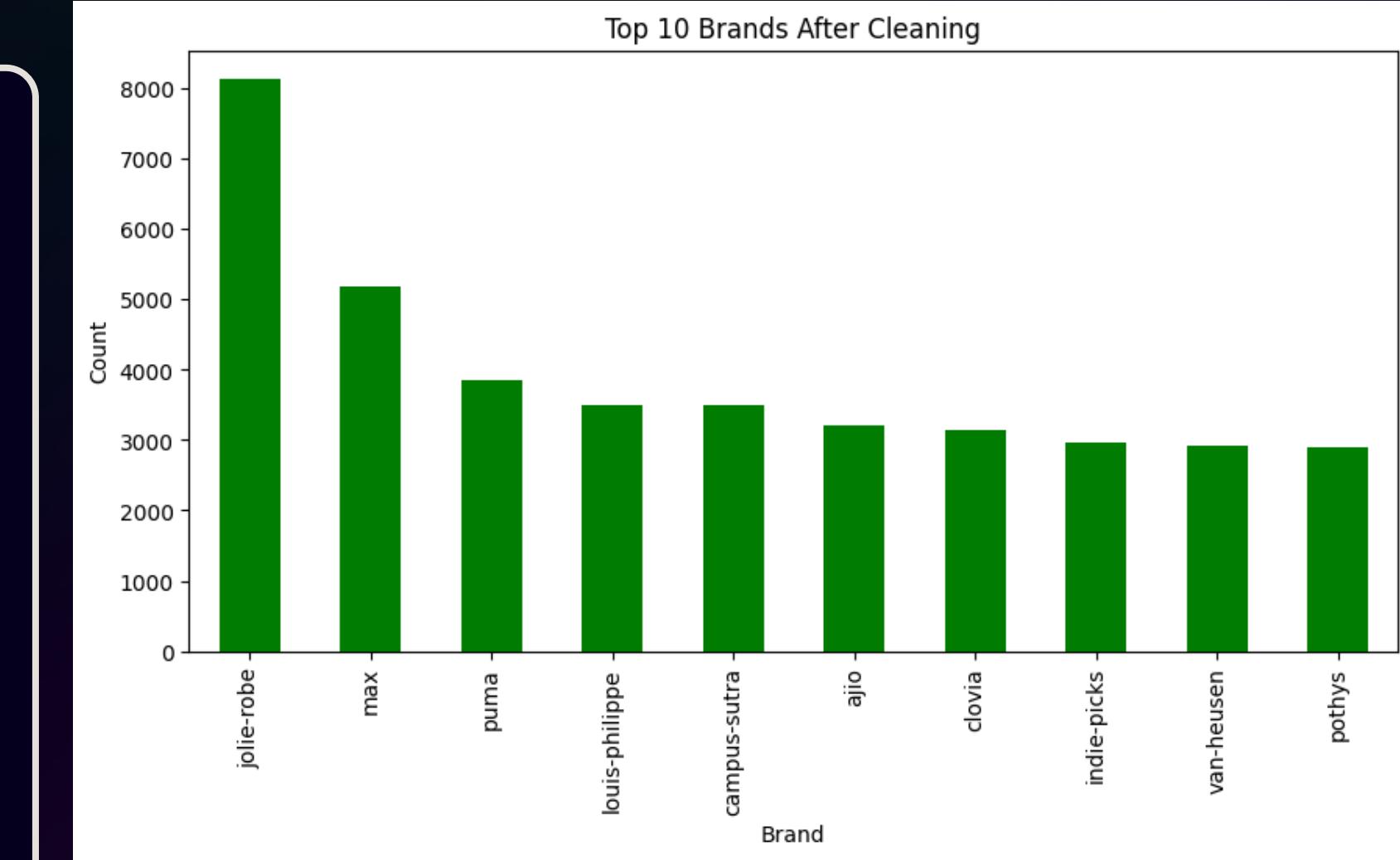
Pricing & Discount  
Patterns

03

Gender Balance & Catalog  
Gaps

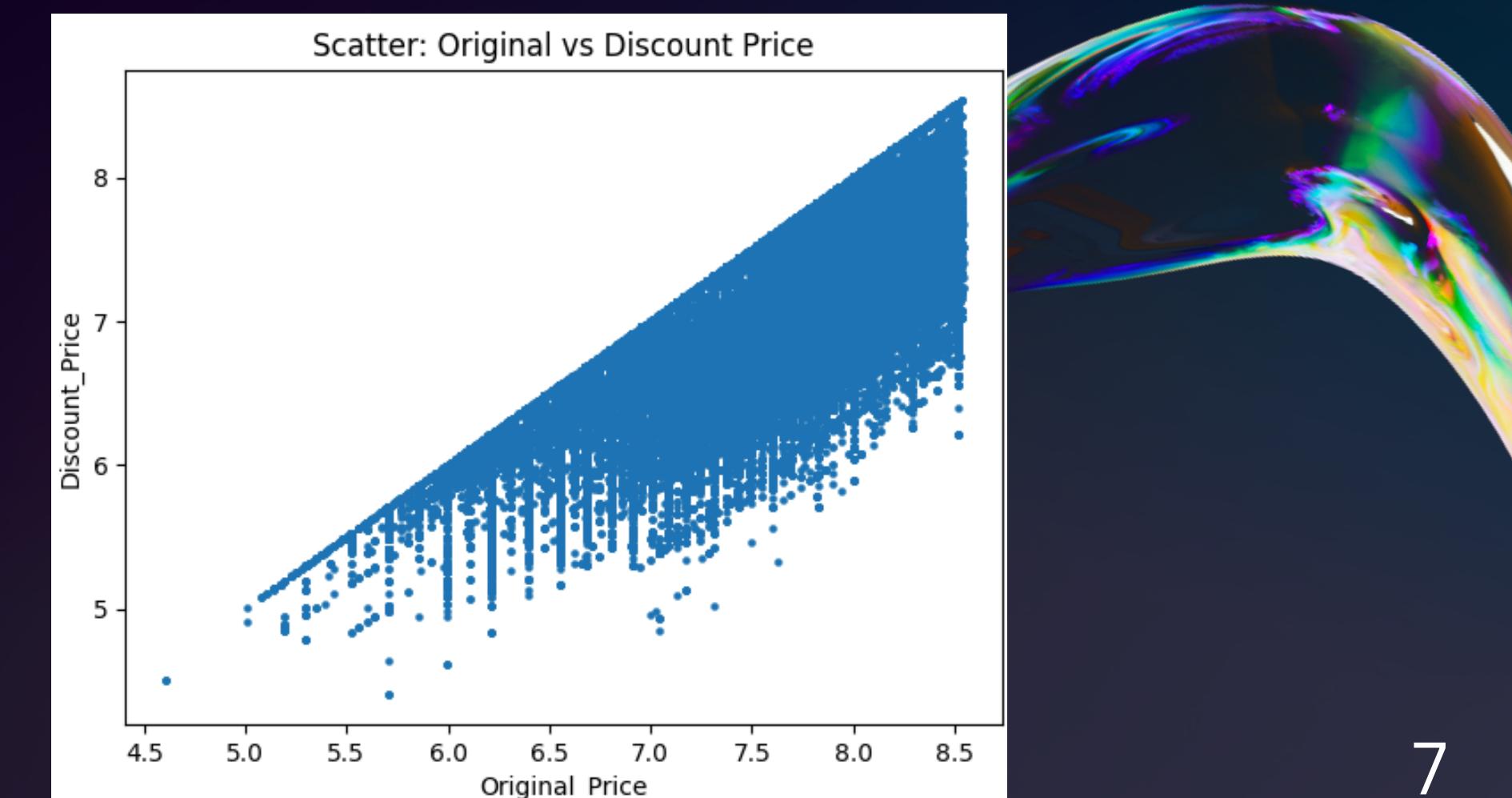
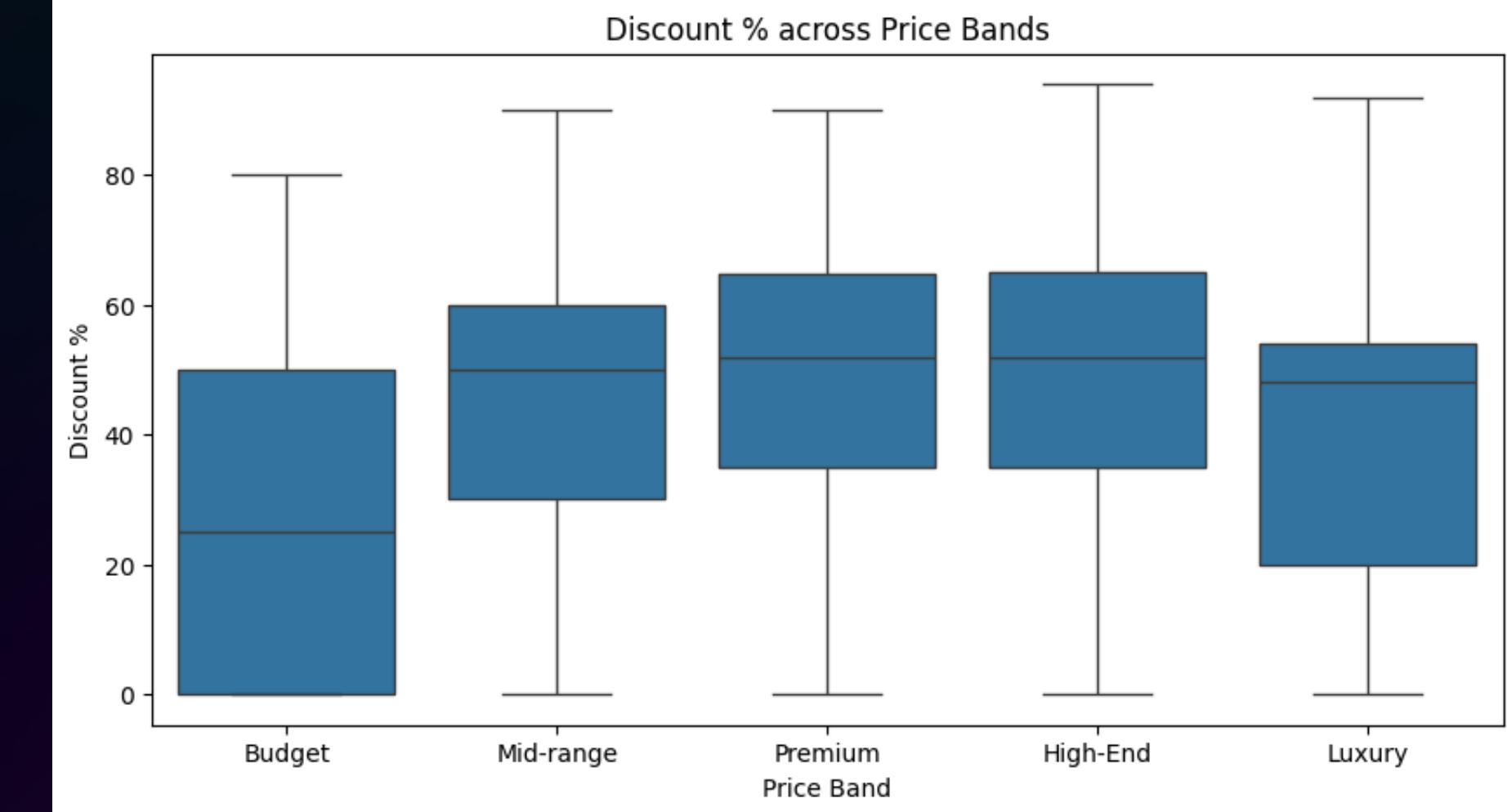
# Data Quality

- Catalog initially had over 4,000 inconsistent color names (e.g., “663”, “navyblue”) and nearly 2,000 brand typos, making search and grouping unreliable.
- After cleaning: Consolidated to 33 standard color categories and unified brand names using Python with fuzzy matching (e.g., “allensolly” → “allen-solly”).
- The top 10 colors and brands now cover a major share of the catalog, the cleaned charts directly show “blue” (52,282 products), “black”, and top brands like “jolie-robe” leading after standardization.
- Impact: Catalog is now easy to search and filter; shoppers see accurate results, and AJIO gains better recommendations and inventory management.



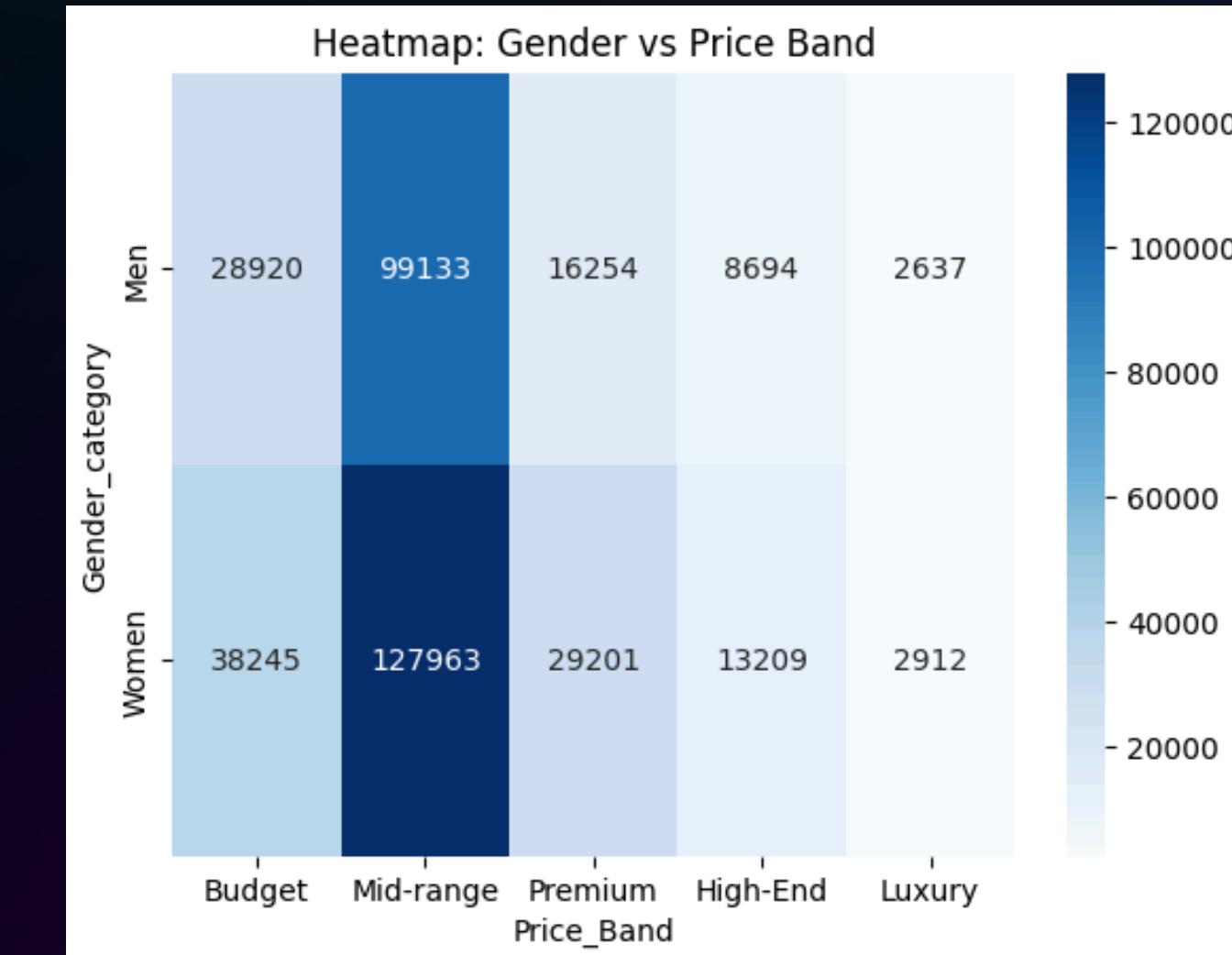
# Pricing & Discount Patterns

- 94% of AJIO's catalog is budget or mid-range, confirming affordable fashion as the focus; luxury makes up just 6% of listings.
- Average discount is 41%, median is 49.96%, most discounts fall between 25% and 60%, especially in mid and premium price bands (see boxplot).
- Luxury discounts are unpredictable: boxplot shows some luxury items get up to 90% off while others are barely reduced, leading to a wide spread.
- Strong positive correlation ( $r = 0.81$ ) between original and discount prices (see scatterplot): higher-priced items almost always mean a larger absolute discount.
- These irregular luxury deals can boost quick sales but may risk AJIO's premium brand appeal.



# Gender Balance & Catalog Gaps

- Women's fashion makes up 58% of AJIO's catalog (211,534 products), while men's is 42% (155,638).
- Across all price bands, women's categories have more options: in the crucial mid-range, there are 127,963 women's products versus 99,133 for men; in luxury, 2,912 for women and 2,637 for men.
- Women's products get more choices and more frequent discounts. For men, premium and luxury options are much fewer, and their price distribution shows more high-value outliers (see boxplot).
- This catalog gap is a clear growth opportunity-expanding men's premium and luxury segments could attract more shoppers and boost sales, creating a better balance for AJIO.



# Recommendations

## Make Data Cleaning a Habit

- Set up regular, automated checks to keep brand names, colors, and catalog details accurate.
- This isn't a one-time fix; clean, consistent data means shoppers can always find what they're looking for and trust what they see.
- Good data leads to better recommendations and a smoother shopping experience.

## Grow Men's Fashion Especially Premium

- Add more options for men, focusing on premium and luxury items where the catalog is thinnest.
- Watch what's trending in men's searches and add those styles and brands.
- Balance the catalog so everyone, men and women, finds deals and choices that feel fair and exciting.

## Discount Smart, Not Random

- Build clear rules for how luxury products are discounted. Avoid huge, scattered price cuts that can make premium goods lose their exclusive feel.
- Test what kinds of luxury deals work best, then stick with what's fair and sustainable.
- The goal: keep AJIO's luxury brands desirable while still offering the right deals at the right time.

## Double Down on What Sells

- Stock up and promote the colors and brands that shoppers love, like Jolie-Robe, Max, Puma, blue, black, and white.
- Use your bestsellers as anchors for campaigns and deals, making them easy to find and always available.
- Focusing on favorites means happier customers and stronger sales.



# Thank You