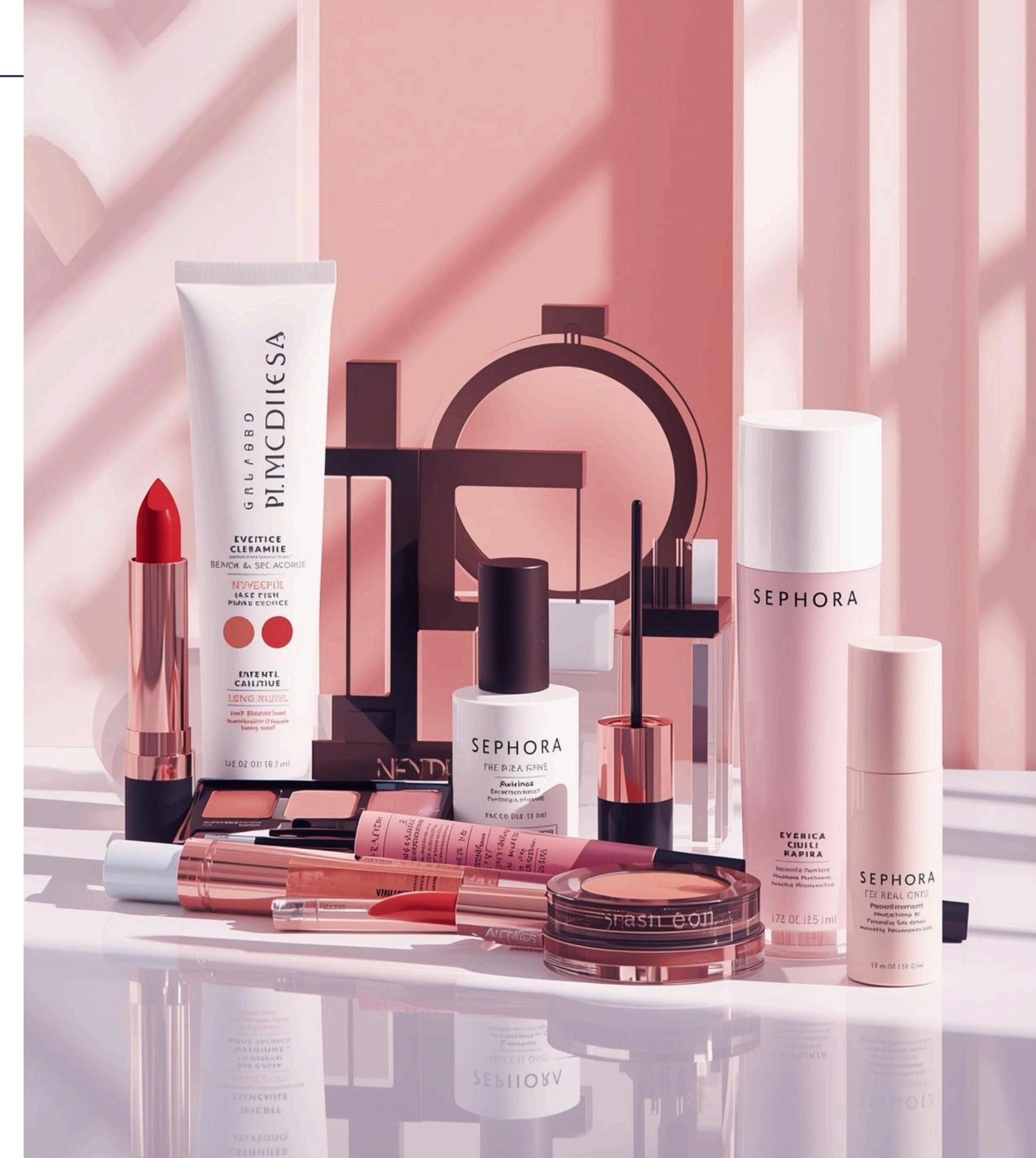


# Sephora

# Unlocking Beauty: A Data-Driven Analysis of Sephora Product Success

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# Project Motivation

## Why this data?

There's a lot of interest in consumer behavior and pricing strategies in the competitive beauty industry.

## Core Goal:

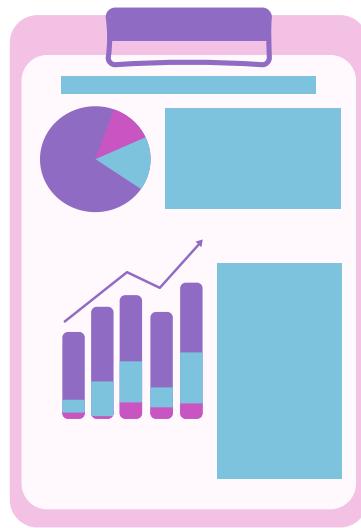
To identify the factors (price, brand, category, marketing) that correlate most strongly with commercial success (loves\_count).

## Target Audience:

Merchandising, Marketing, and Pricing Stakeholders at Sephora.



# Agenda Overview



## Data & Methodology

This section outlines the foundational data source and cleaning methods utilized to ensure high-quality insights, focusing on essential product features that correlate with success metrics.



## Exploratory Analysis

Here, we dive into the initial data exploration, revealing important trends and distributions, while visualizing key metrics that inform our understanding of product performance in the market.



## Research Insights

This section addresses critical research questions regarding product popularity, pricing strategies, and category dominance, providing data-driven answers that illuminate Sephora's path to success.



## Conclusion

Finally, we recap on important points, actionable recommendations to stakeholders, and share possible future work and analysis.

# Data Source

## Data Source:

Real-world Sephora Product Dataset (~8,500 products).

## Key Features:

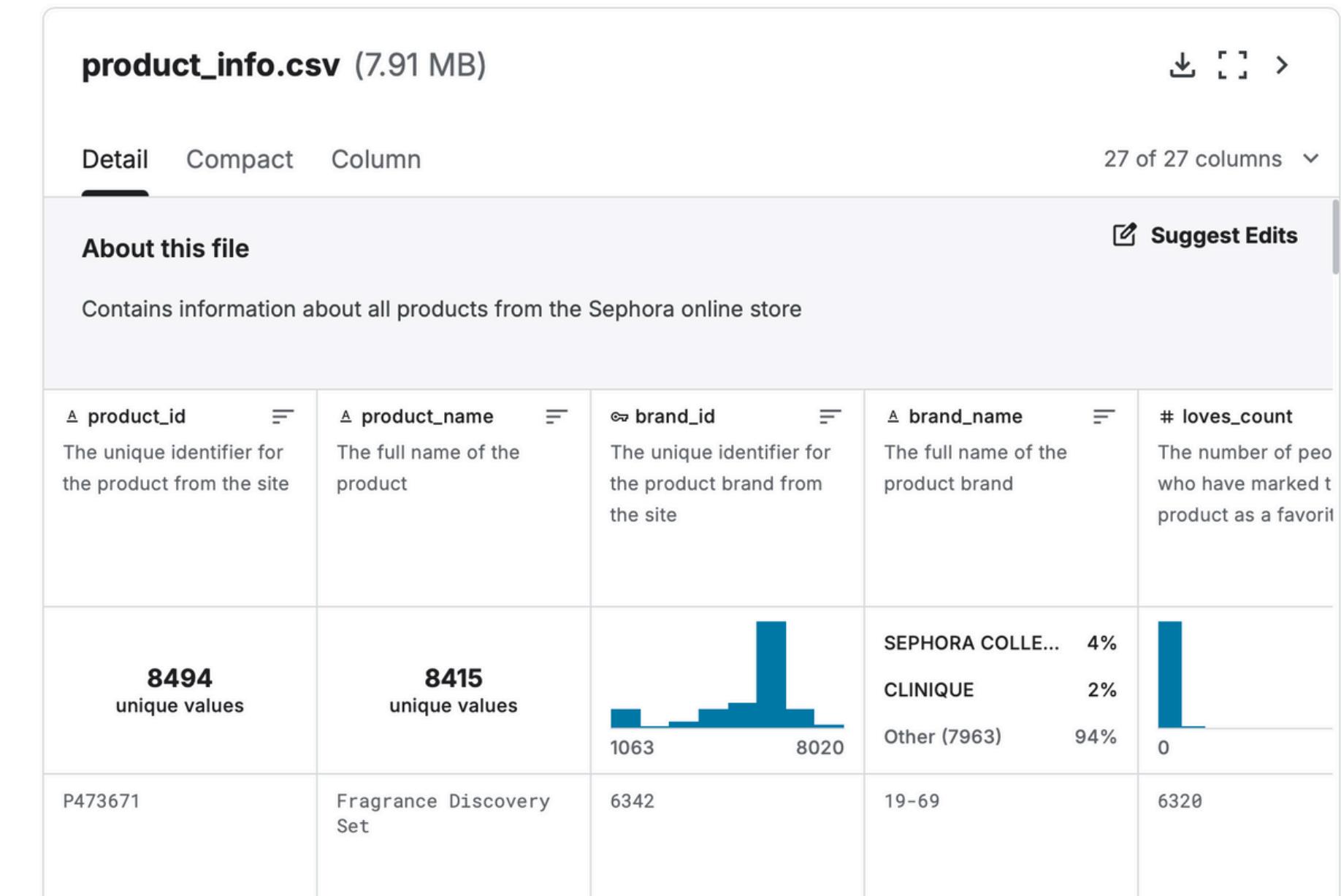
`loves_count, rating, price_usd, brand_name, primary_category.`

## Cleaning:

Handled missing rating/reviews (dropped for quality analysis).

## Feature Engineering:

Creation of the `price_per_ml` feature for true value comparison + 2 other features.



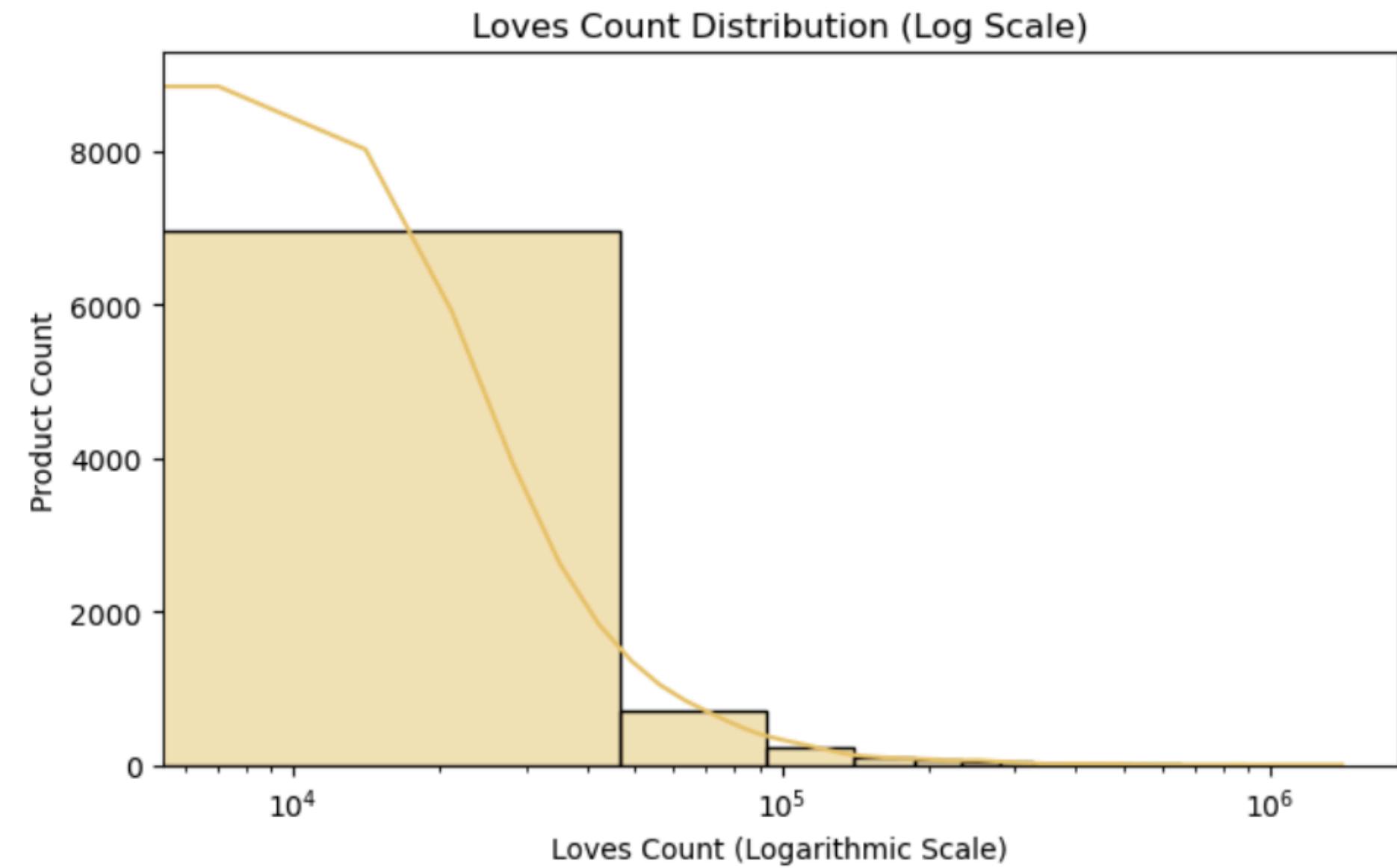
# Exploratory Data Analysis

## Superstar Products

The distribution of loves\_count reveals that a small number of products dominate the market, showcasing the **superstar** effect where few items gain overwhelming popularity and attention.

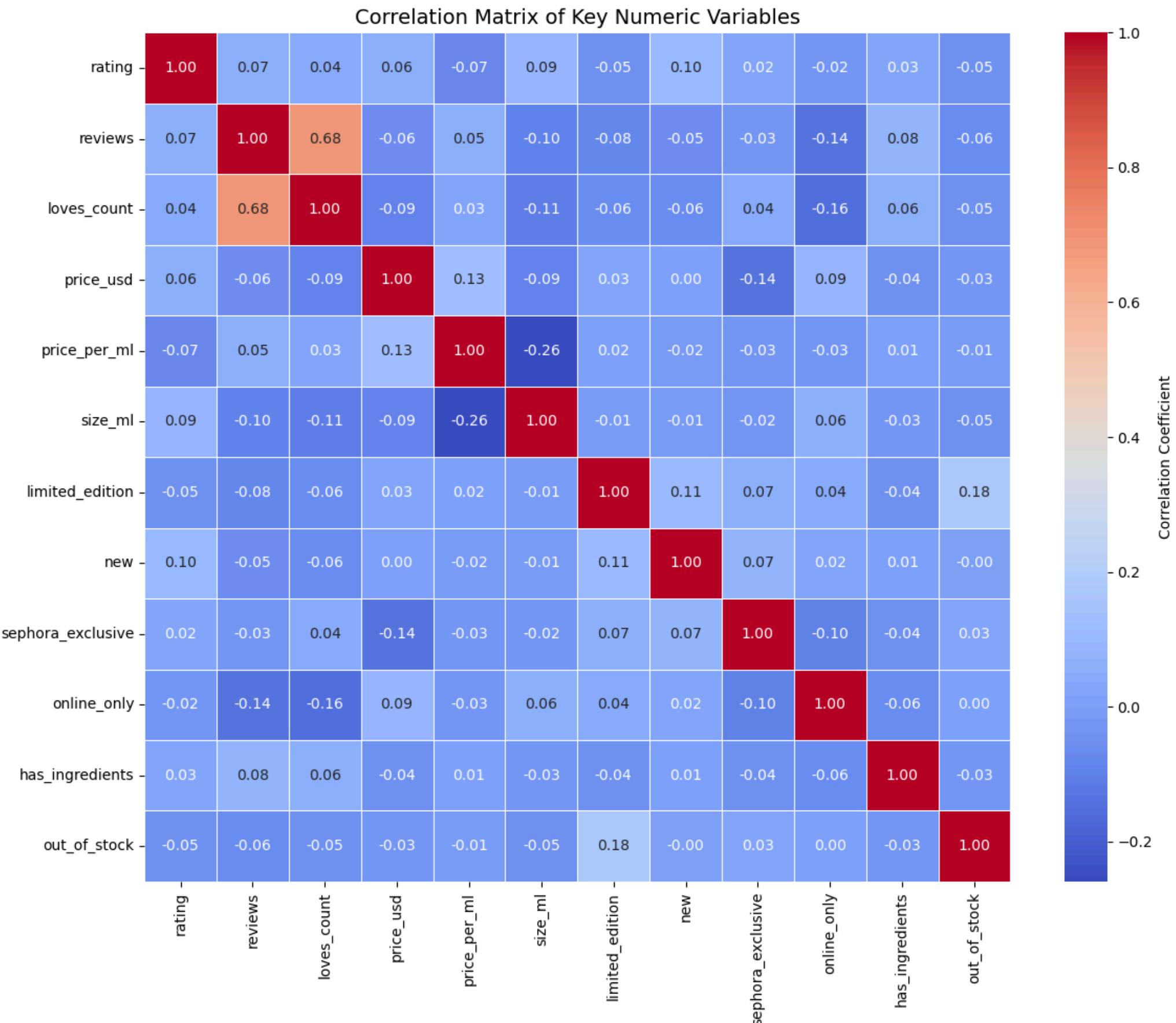
## High Baseline Quality

Despite the skewed distribution of loves\_count, most products maintain a **high baseline quality**, reflecting strong ratings across the board, indicating general customer satisfaction within Sephora's extensive product range.



# Correlation Matrix Insight

The correlation matrix illustrates the relationships among key product features in Sephora's dataset. Notably, there is a **negligible correlation** (0.04) between product ratings and loves\_count, suggesting that **popularity** is influenced more by external marketing factors than by inherent quality.



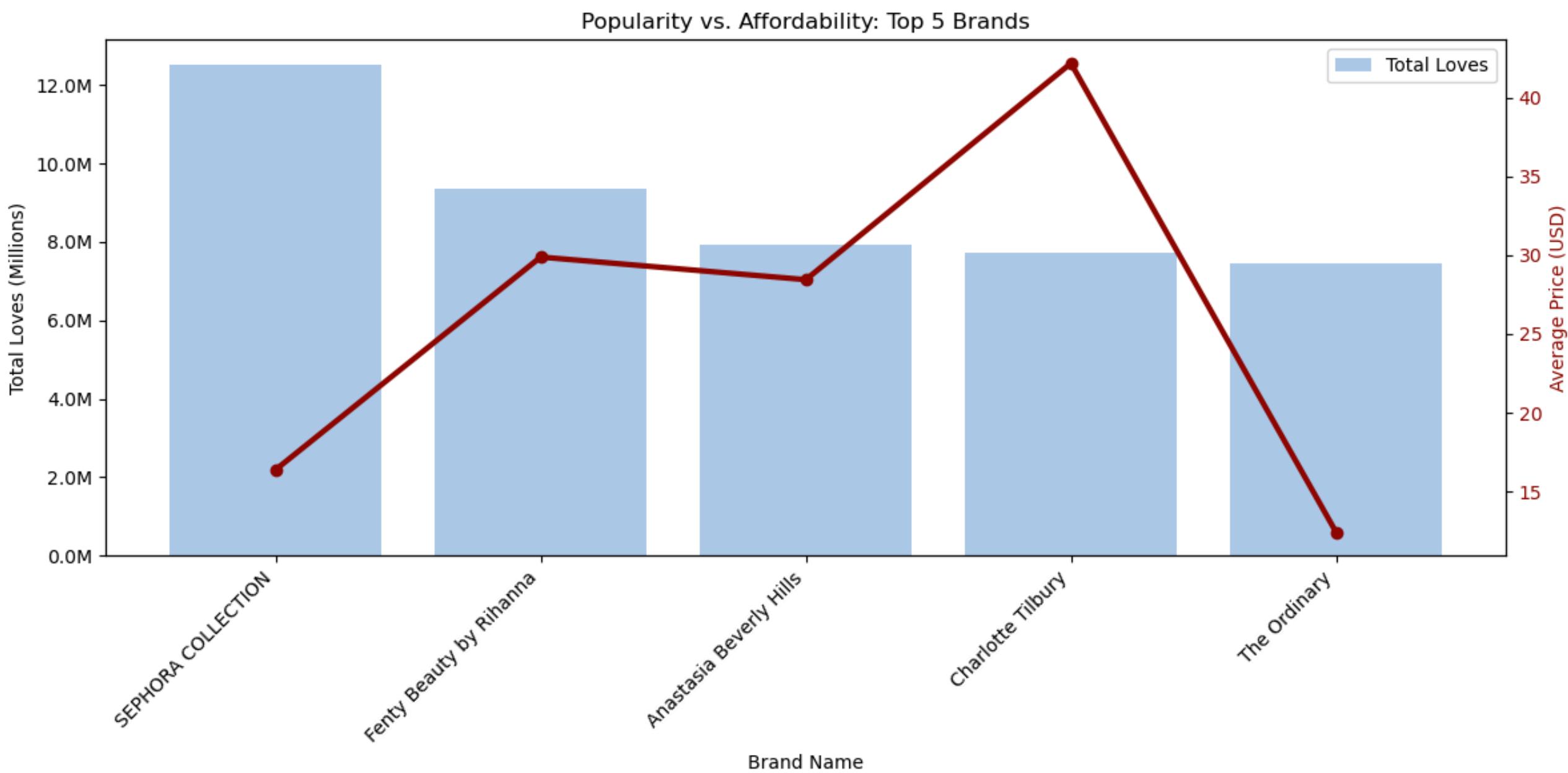
# Price vs. Popularity

## Top Brands

The **most popular brands** within Sephora, such as SEPHORA COLLECTION and The Ordinary, offer products at lower price points, significantly enhancing their accessibility to a wider audience.

## Lowest Prices

Generally, products priced between **\$12 and \$16** tend to attract a larger customer base, demonstrating a strong correlation between affordability and increased product popularity in the beauty sector.



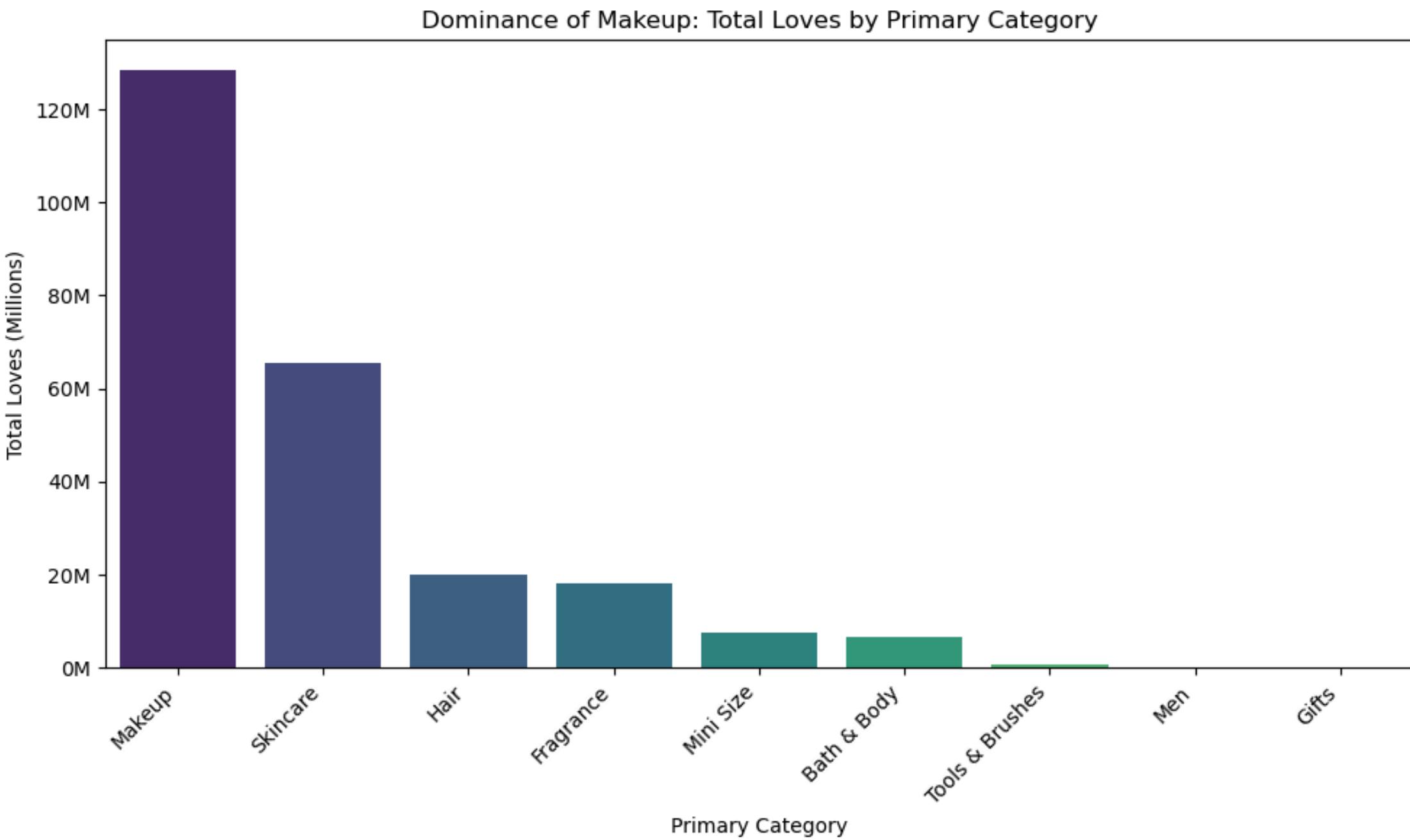
# Category Dominance

## Makeup Dominance

Makeup products dominate the Sephora portfolio, leading in both sales volume and customer engagement. This category's broad appeal drives significant traffic to stores and online platforms.

## Niche Satisfaction

Niche categories such as Tools & Brushes and Men's grooming receive higher satisfaction ratings. These segments indicate that specialized products resonate well with customers, reflecting quality and engagement.



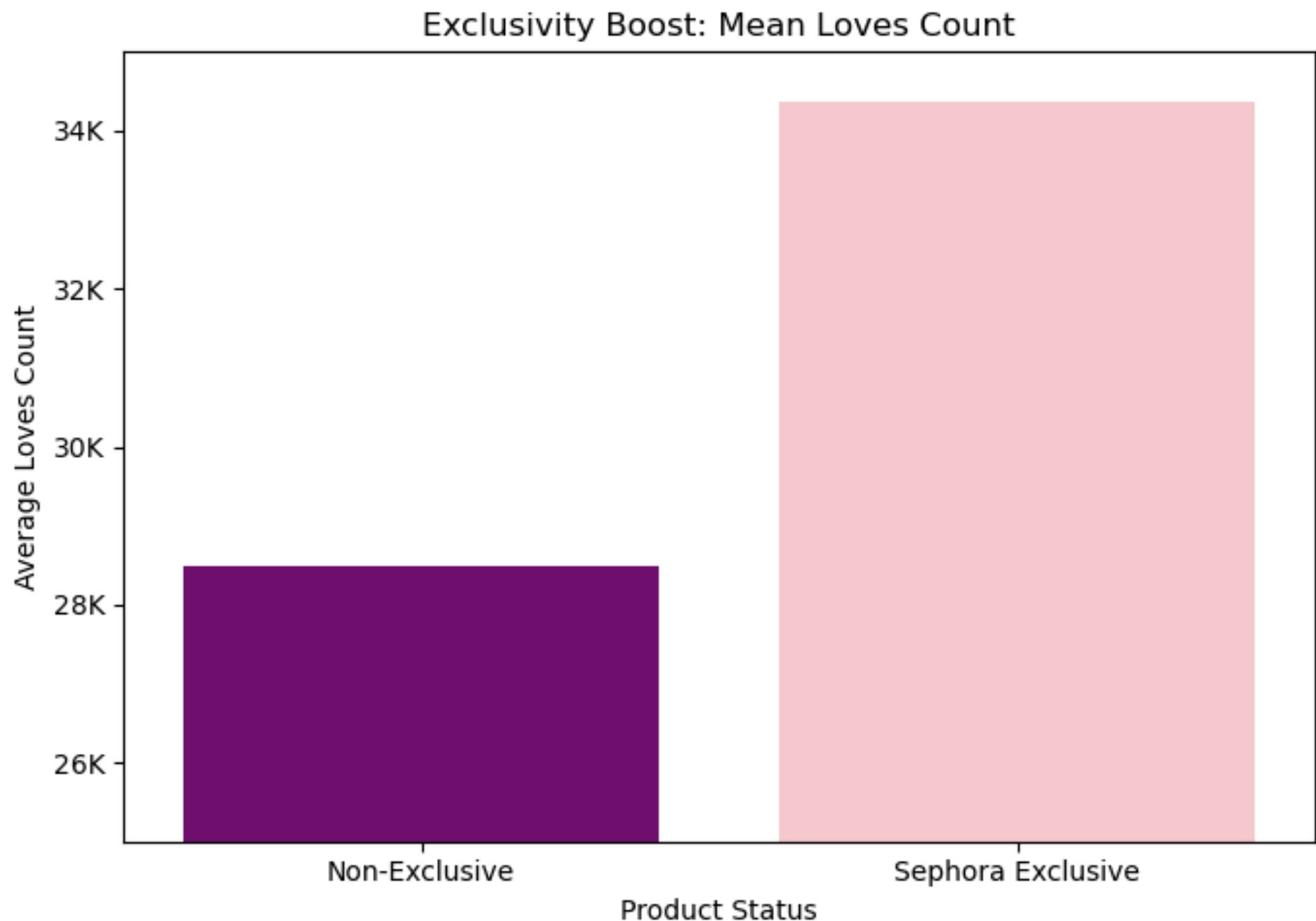
# The Exclusivity Boost

## Exclusive Products

Exclusive products at Sephora show a ~**21% higher loves\_count** compared to non-exclusive ones, emphasizing how the allure of exclusivity captivates consumer interest and engagement significantly.

## Non-Exclusive Products

Non-exclusive products maintain a **consistent customer base**, yet they lack the excitement generated by exclusive offerings, which often leads to less visibility and lower loves\_count overall.



# Quality Validation

## Code Output:

```
Q4: Overall Mean Rating: 4.1945  
Q4: Mean Rating for Top 10% Products by Reviews (1097+ reviews): 4.2931
```

## Average Rating

The **top 10% of high review volume products** boast an average rating of 4.29, indicating that customer satisfaction aligns with product popularity and corroborates quality perceptions.

## Customer Validation

This slight increase in rating compared to the overall average (4.19) demonstrates that customers consistently validate **popular products as high-quality**, reinforcing the trust in Sephora's offerings.

# Stock Management

## Code Output:

```
Q5: Percentage of Out-of-Stock Products for Online-Only vs. In-Store/Both  
online_only percent_out_of_stock  
0  In-Store/Both      7.11%  
1  Online Only       7.26%
```

## Identical Rates

The out-of-stock rates for online-only products and in-store items are nearly identical, approximately 7.11%-7.26%, indicating effective stock management practices across both purchasing channels.

## Consistent Strategies

This consistency suggests that Sephora employs similar stock management strategies, ensuring product availability and customer satisfaction, whether shopping online or in-store, enhancing overall consumer trust.

# Strategic Recommendations



## Focus on Affordability

Prioritizing competitive pricing will enhance mass appeal and attract a wider customer base, ultimately driving increased sales and fostering brand loyalty among cost-conscious consumers.



## Leverage Exclusivity

Promoting exclusive product lines will create a sense of allure and urgency, encouraging customers to engage more with the brand and increasing their overall interest and purchases.



## Invest in Niche Categories

Expanding offerings in high-satisfaction niches allows for premium positioning, catering to discerning customers and enhancing overall market perception, thus reinforcing the brand's commitment to quality and diversity.

# Operational Insights

## Balanced Stock Management

Maintaining a **consistent** stock management strategy online and in-store is vital for meeting **customer demand** and maximizing sales opportunities across all retail channels effectively.

## Prioritize Marketing

Focusing on **visibility** and strategic marketing efforts is essential for enhancing product awareness, driving customer interest, and ultimately increasing overall **popularity** and engagement with Sephora products.



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# Thank You

