

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:

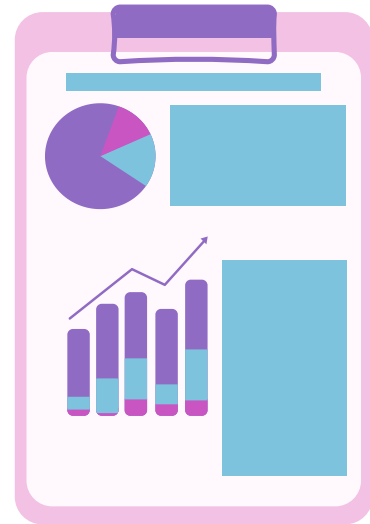
To identify the factors (price, brand, category, marketing) that correlate most strongly with commercial success (loves_count).

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.

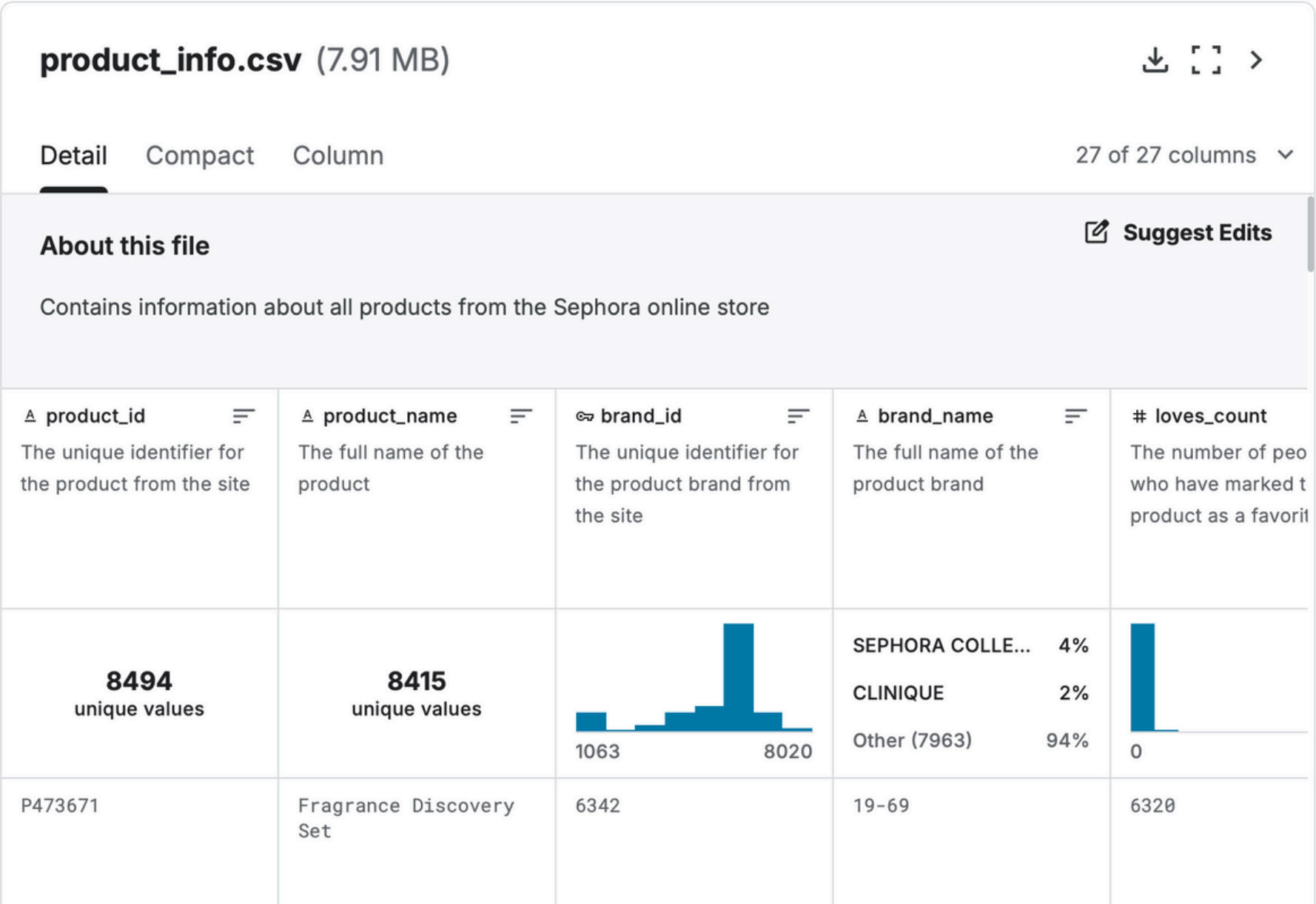
Data Source

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.



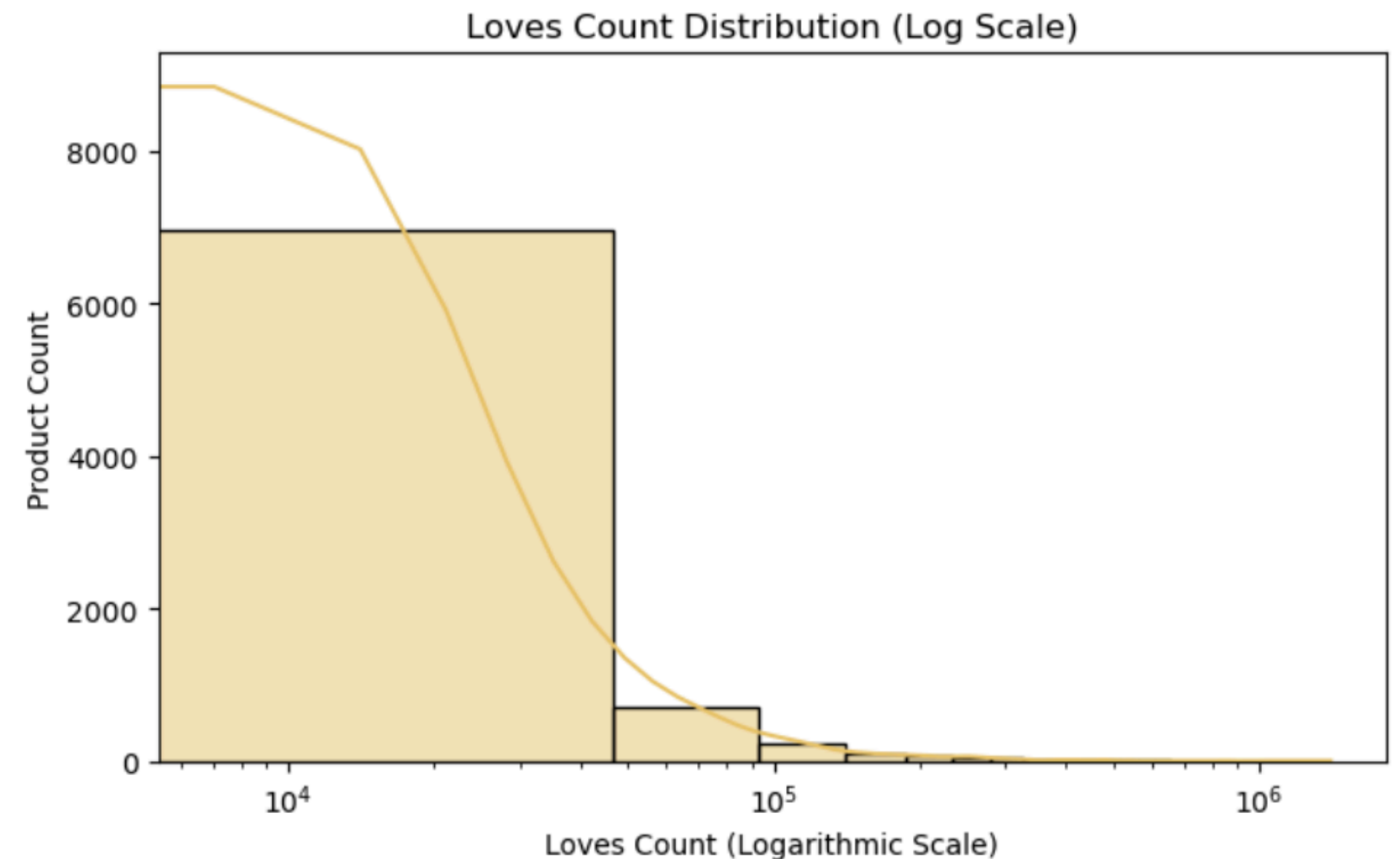
Exploratory Data Analysis

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.

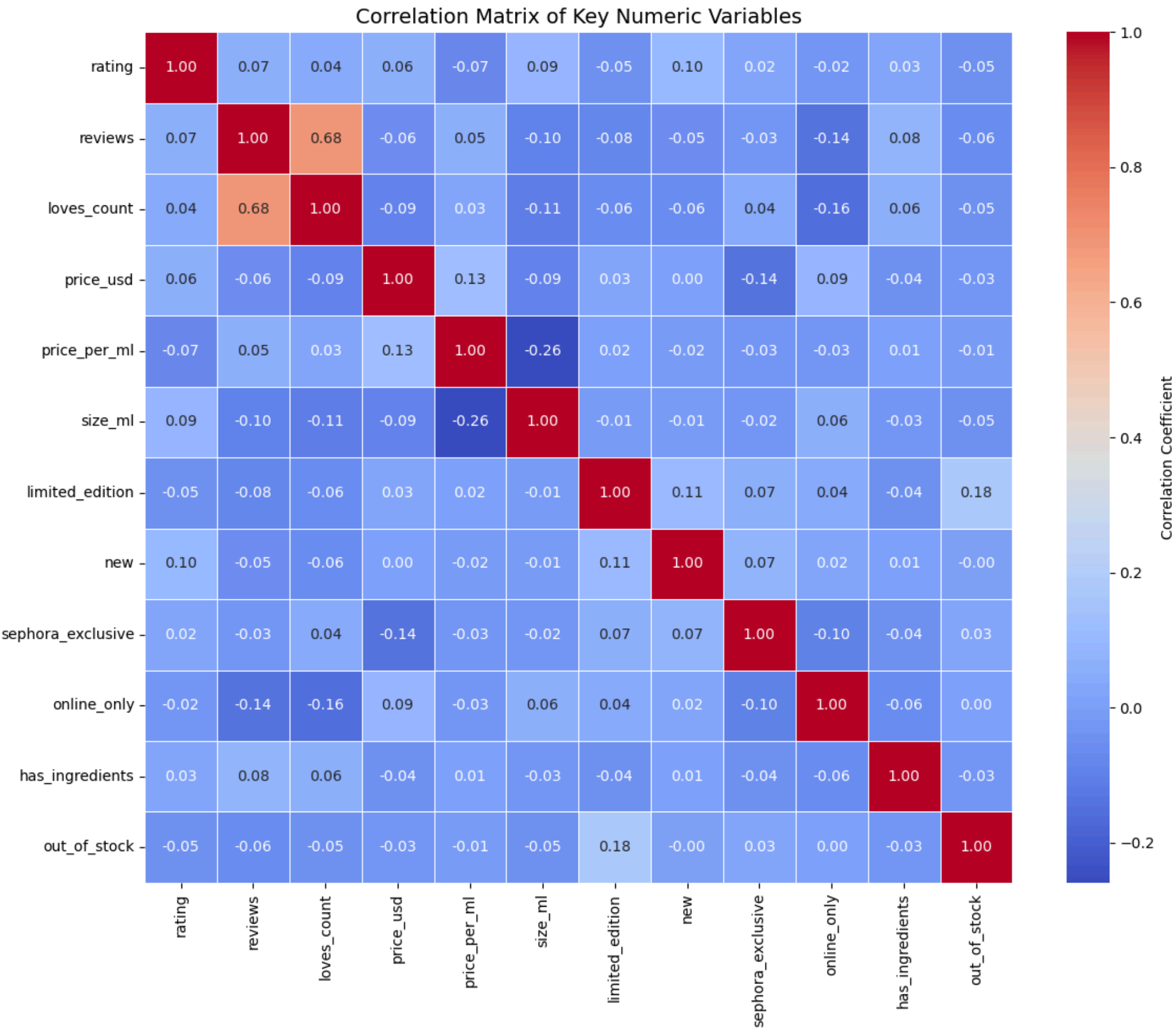
High Baseline Quality

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.



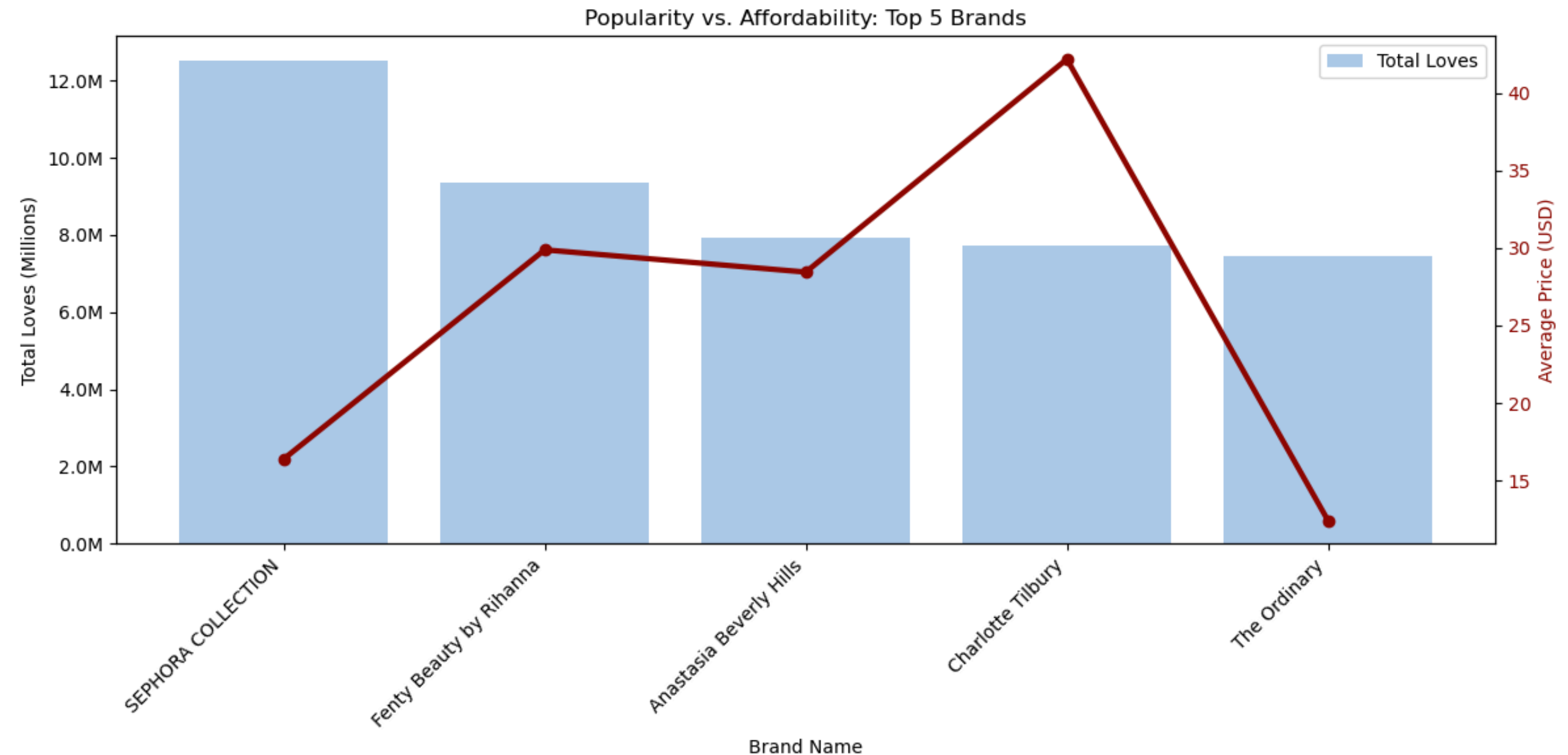
Price vs. Popularity

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.



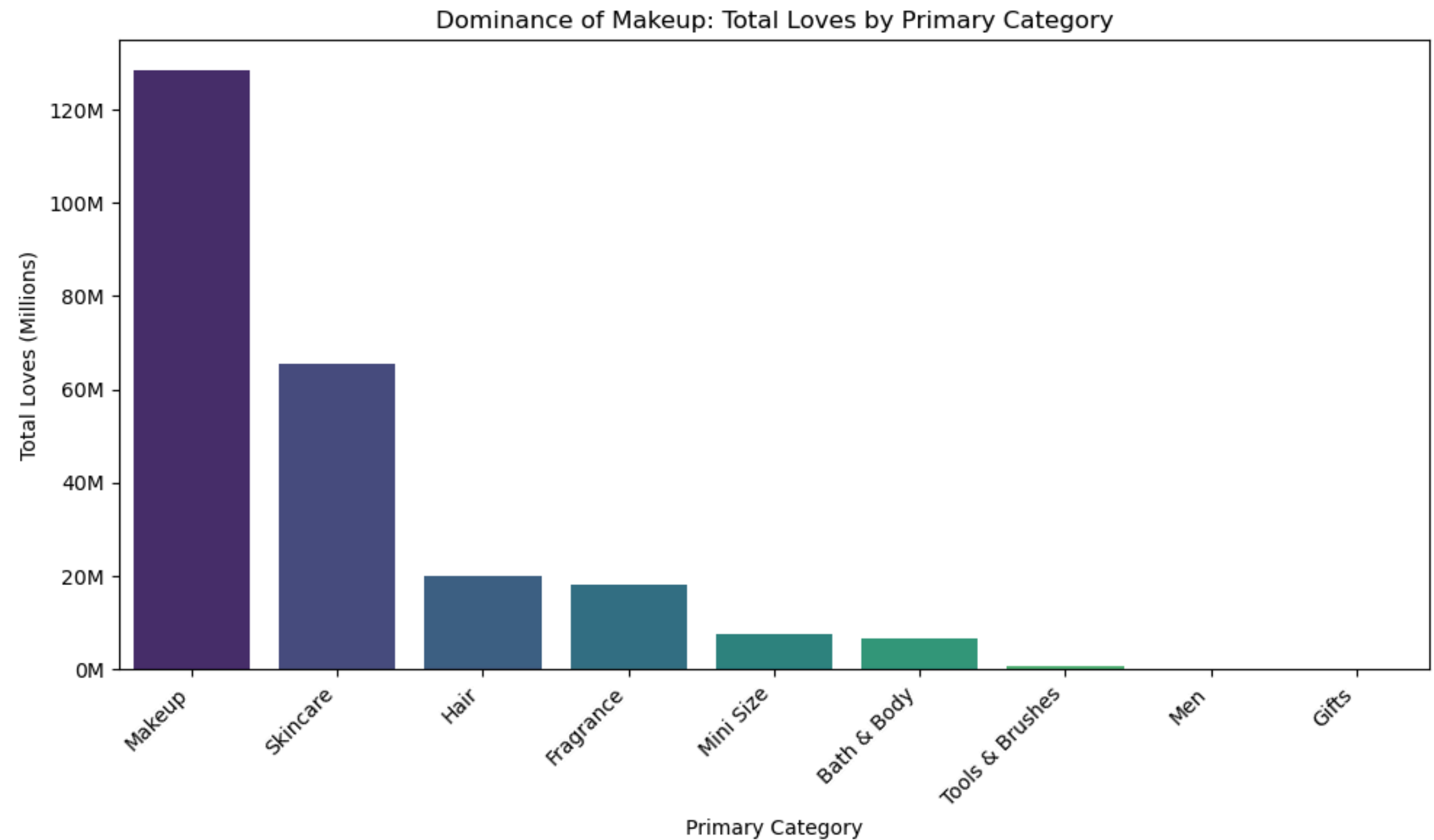
Category Dominance

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.



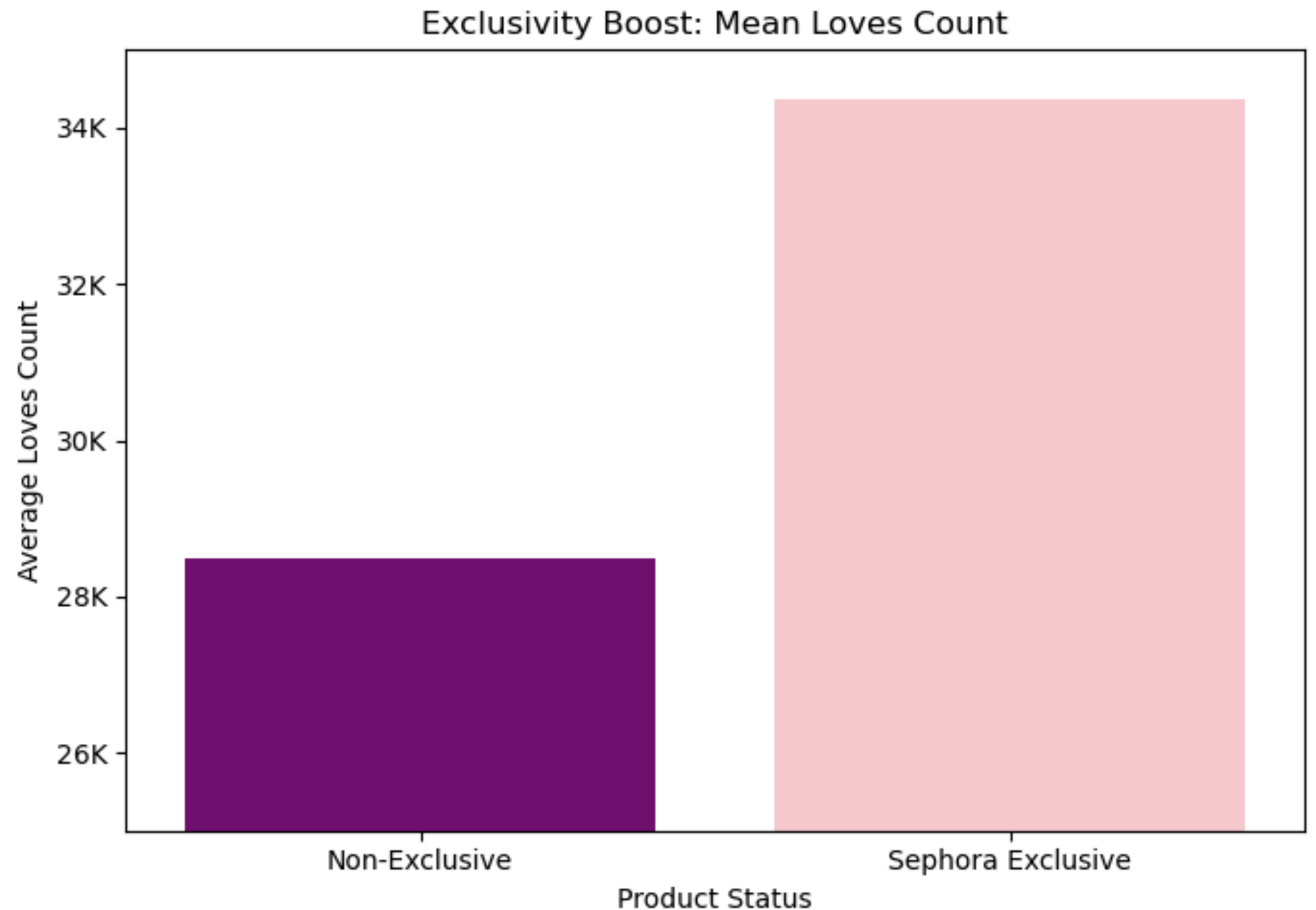
The Exclusivity Boost

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.



Thank You

